InterCommunity Health Network Coordinated Care Organization (IHN-CCO) is applying to continue as the Coordinated Care Organization for Benton, Lincoln, and Linn counties through the Oregon Health Authority’s (OHA’s) Request for Application (RFA) process that is required in order to serve Oregon Health Plan members. IHN-CCO’s strategic plan for 2020 – 2024 focuses on integration and coordination of physical, behavioral, and oral health services to increase access, reduce costs, and improve health outcomes for IHN-CCO members.

The involvement in the process of over 50 community partner organizations and programs has led to a comprehensive CCO 2.0 application with tangible and achievable goals. IHN-CCO internal departments and staff, community-based organizations, community workgroups, medical providers, behavioral health providers, oral health organizations, and the Community Advisory Council developed strategic plans for each of the five priority areas of the RFA; Behavioral Health, Health Information Technology, Social Determinants of Health/Health Equity, Sustainability and Cost Structure, and Value Based Payments.

**Behavioral Health**
- Provide access to full array of services that are responsive to member needs
- Develop a culturally responsive and linguistically appropriate workforce with trauma informed services
- Continue the Patient-Centered Primary Care Home/Behavioral Health Home model to ensure seamless integration for members

**Health Information Technology**
- Align IHN-CCO’s Health Information Technology strategy by increasing participation in community committees and workgroups
- Reduce barriers to health information exchange for oral and behavioral health providers
- Support health equity efforts that expand access to underserved areas and populations

**Social Determinants of Health/Health Equity**
- Develop the expansion of Traditional Health Worker utilization in the region
- Improve internal infrastructure and investments to coordinate and support health equity trainings and activities
- Align and meaningfully engage the Community Advisory Council and all Community Health Improvement Plans in the region

**Sustainability and Cost Structure**
- Expand innovative payment models, services, and networks
- Maintain financial sustainability through hospital evaluations, pharmacy costs, and health related services
- Ensure financial transparency by publishing clear and concise reports

**Value Based Payments**
- Continue to support and expand the Patient-Centered Primary Care Home model of care
- Expand value based payments into inpatient hospitals and maternity care
- Achieve all timeline goals of value based payments to providers
### Attachment 2 - Application Checklist

The checklist presented in this Attachment 2 is provided to assist Applicants in ensuring that Applicant submits a complete Application. Please complete and return with Application. This Application Checklist is for the Applicant’s convenience and does not alter the Minimum Submission requirements in Section 3.2.

#### Application Submission Materials, Mandatory Except as Noted

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<th>Notes</th>
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<td>Attachment 6 – Chart or listing presenting the identities of and interrelationships between the parent, Affiliates and the Applicant.</td>
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<td>Attachment 12 – UCAA Supplemental Financial Analysis Workbook Template</td>
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<td>Attachment 12 – Three years of Audited Financial Reports</td>
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<td>Attachment 15 – Representations</td>
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<td>Attachment 16 – Member Transition Plan</td>
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<td>Redacted Copy of Application Documents for which confidentiality is asserted.</td>
<td>All redacted items must be separately claimed in Attachment 4. (Optional)</td>
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</table>
Any individual signing below hereby certifies they are an authorized representative of Applicant and that:

1. Applicant understands and accepts the requirements of this RFA. By submitting an Application, Applicant acknowledges and agrees to be bound by (a) all the provisions of the RFA (as modified by any Addenda), specifically including RFA Section 6.2 (Governing Laws) and 6.4 (Limitation on Claims); and (b) the Contract terms and conditions in Appendix B, subject to negotiation and rate finalization as described in the RFA.

2. Applicant acknowledges receipt of any and all Addenda to this RFA.

3. Application is a firm offer for 180 days following the Closing.

4. If awarded a Contract, Applicant agrees to perform the scope of work and meet the performance standards set forth in the final negotiated scope of work of the Contract.

5. I have knowledge regarding Applicant’s payment of taxes. I hereby certify that, to the best of my knowledge, Applicant is not in violation of any tax laws of the state or a political subdivision of the state, including, without limitation, ORS 305.620 and ORS chapters 316, 317 and 318.

6. I have knowledge regarding Applicant’s payment of debts. I hereby certify that, to the best of my knowledge, Applicant has no debts unpaid to the State of Oregon or its political subdivisions for which the Oregon Department of Revenue collects debts.

7. Applicant does not discriminate in its employment practices with regard to race, creed, age, religious affiliation, gender, disability, sexual orientation, national origin. When awarding subcontracts, Applicant does not discriminate against any business certified under ORS 200.055 as a disadvantaged business enterprise, a minority-owned business, a woman-owned business, a business that a service-disabled veteran owns or an emerging small business. If applicable, Applicant has, or will have prior to Contract execution, a written policy and practice, that meets the requirements described in ORS 279A.112 (formerly HB 3060), of preventing sexual harassment, sexual assault and discrimination against employees who are members of a protected class. OHA may not enter into a Contract with an Applicant that does not certify it has such a policy and practice. See https://www.oregon.gov/DAS/Procurement/Pages/hb3060.aspx for additional information and sample policy template.

8. Applicant and Applicant’s employees, agents, and subcontractors are not included on:
   a. the “Specially Designated Nationals and Blocked Persons” list maintained by the Office of Foreign Assets Control of the United States Department of the Treasury found at: https://www.treasury.gov/ofac/downloads/SDNList.pdf, or
   b. the government wide exclusions lists in the System for Award Management found at: https://www.sam.gov/portal/
9. Applicant certifies that, to the best of its knowledge, there exists no actual or potential conflict between the business or economic interests of Applicant, its employees, or its agents, on the one hand, and the business or economic interests of the State, on the other hand, arising out of, or relating in any way to, the subject matter of the RFA, except as disclosed in writing in this Application. If any changes occur with respect to Applicant’s status regarding conflict of interest, Applicant shall promptly notify OHA in writing.

10. Applicant certifies that all contents of the Application (including any other forms or documentation, if required under this RFA) and this Application Certification Sheet are truthful and accurate and have been prepared independently from all other Applicants, and without collusion, Fraud, or other dishonesty.

11. Applicant understands that any statement or representation it makes, in response to this RFA, if determined to be false or fraudulent, a misrepresentation, or inaccurate because of the omission of material information could result in a "claim" {as defined by the Oregon False Claims Act, ORS 180.750(1)}, made under Contract being a "false claim" {ORS 180.750(2)} subject to the Oregon False Claims Act, ORS 180.750 to 180.785, and to any liabilities or penalties associated with the making of a False Claim under that Act.

12. Applicant acknowledges these certifications are in addition to any certifications required in the Contract and Statement of Work in Attachment 10 at the time of Contract execution.

Signature: [Signature] Title: CEO Date: 4/15/19

(State of Oregon) ss:

County of Benton

Signed and sworn to before me on 4/15/19 (date) by Kelly Kaiser (Affiant’s name).
Attachment 4 - Disclosure Exemption Certificate

Kelley Kaiser ("Representative"), representing IHN-CCO ("Applicant"), hereby affirms under penalty of False Claims liability that:

1. I am an officer of the Applicant. I have knowledge of the Request for Application referenced herein. I have full authority from the Applicant to submit this Certificate and accept the responsibilities stated herein.

2. I am aware that the Applicant has submitted an Application, dated on or about 4/15/19 (the "Application"), to the State of Oregon in response to Request for Application #OHA-4690-18 for CCO 2.0 (the RFA). I am familiar with the contents of the Application.

3. I have read and am familiar with the provisions of Oregon’s Public Records Law, Oregon Revised Statutes ("ORS") 192.311 through 192.478, and the Uniform Trade Secrets Act as adopted by the State of Oregon, which is set forth in ORS 646.461 through ORS 646.475. I understand that the Application is a public record held by a public body and is subject to disclosure under the Oregon Public Records Law unless specifically exempt from disclosure under that law.

4. I have checked Box A or B as applicable:

   A. [✓] The Applicant believes the information listed in Exhibit A to this Exhibit 4 is exempt from public disclosure (collectively, the “Exempt Information”), which is incorporated herein by this reference. In my opinion, after consulting with a person having expertise regarding Oregon’s Public Records Law, the Exempt Information is exempt from disclosure under Oregon’s Public Records Law under the specifically designated sections as set forth in Exhibit A or constitutes “Trade Secrets” under either the Oregon Public Records Law or the Uniform Trade Secrets Act as adopted in Oregon. Wherever Exhibit A makes a claim of Trade Secrets, then Exhibit A indicates whether the claim of trade secrecy is based on information being:

      1. A formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information that:

         i. is not patented,

         ii. is known only to certain individuals within the Applicant’s organization and that is used in a business the Applicant conducts,

         iii. has actual or potential commercial value, and

         iv. gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.

      Or

      2. Information, including a drawing, cost data, customer list, formula, pattern, compilation, program, device, method, technique or process that:

         i. Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

         ii. Is the subject of efforts by the Applicant that are reasonable under the circumstances to maintain its secrecy.

   B. [ ] Exhibit A has not been completed as Applicant attests that are no documents exempt from public disclosure.
5. The Applicant has submitted a copy of the Application that redacts any information the Applicant believes is Exempt Information and that does not redact any other information. The Applicant represents that all redactions on its copy of the Application are supported by Valid Claims of exemption on Exhibit A.

6. I understand that disclosure of the information referenced in Exhibit A may depend on official or judicial determinations made in accordance with the Public Records Law.

---

**Exhibit A to Attachment 4**

Applicant identifies the following information as exempt from public disclosure under the following designated exemption(s):

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<th>Section Redacted</th>
<th>ORS or other Authority</th>
<th>Reason for Redaction</th>
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<tbody>
<tr>
<td>Attachment 9: Strategic Roadmap</td>
<td>ORS 646.461 through ORS 646.484</td>
<td>1. Known only to certain individuals within IHN-CCO and is used in a business the IHN-CCO conducts. Gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.</td>
</tr>
<tr>
<td>Attachment 9: Health Information Technology Questionnaire Sections A1a, C1, C1d</td>
<td>ORS 646.461 through ORS 646.480</td>
<td>2. Known only to certain individuals within IHN-CCO and is used in a business the IHN-CCO conducts. Gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.</td>
</tr>
<tr>
<td>Attachment 9: Health Information Technology Questionnaire Sections D2b, D2e1, D2g1</td>
<td>ORS 646.461 through ORS 646.484</td>
<td>3. Gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.</td>
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Certificate of Completion
The State of Oregon, Other, Non State Employees, hereby certifies that

InterCommunity Health Network CCO
Has successfully completed the following:

DAS - CHRO - Overview of Pay Equity

On 4/1/2019
Attachment 5 - Responsibility Check Form

OHA will determine responsibility of an Applicant prior to award and execution of a Contract. In addition to this form, OHA may notify Applicant of other documentation required, which may include but is not limited to recent profit-and-loss history, current balance statements and cash flow information, assets-to-liabilities ratio, including number and amount of secured versus unsecured creditor claims, availability of short and long-term financing, bonding capacity, insurability, credit information, materials and equipment, facility capabilities, personnel information, record of performance under previous contracts, etc. Failure to promptly provide requested information or clearly demonstrate responsibility may result in an OHA finding of non-responsibility and rejection.

1. Does Applicant have available the appropriate financial, material, equipment, facility and personnel resources and expertise, or ability to obtain the resources and expertise, necessary to demonstrate the capability of Applicant to meet all contractual responsibilities?

   YES ☑  NO ☐

2. Within the last five years, how many contracts of a similar nature has Applicant completed that, to the extent that the costs associated with and time available to perform the contract remained within Applicant’s Control, Applicant stayed within the time and budget allotted, and there were no contract claims by any party? Number: 1

   How many contracts did not meet those standards? Number: 0  If any, please explain.

   Response: IHN-CCO has been a contracted OHA provider since 2012.

3. Within the last three years has Applicant (incl. a partner or shareholder owning 10% or more of Applicant’s firm) or a major Subcontractor (receiving 10% or more of a total contract amount) been criminally or civilly charged, indicted or convicted in connection with:
   • obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract,
   • violation of federal or state antitrust statutes relating to the submission of bids or proposals, or
   • embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property?

   YES ☐  NO ☑

   If "YES," indicate the jurisdiction, date of indictment, charge or judgment, and names and summary of charges in the response field below.

   Response:

4. Within the last three years, has Applicant had:
   • any contracts terminated for default by any government agency, or
   • any lawsuits filed against it by creditors or involving contract disputes?

   YES ☐  NO ☑

   If "YES," please explain. (With regard to judgments, include jurisdiction and date of final judgment or dismissal.)

   Response:
5. Does Applicant have any outstanding or pending judgments against it?  
   YES ☐ NO ☑

   Is Applicant experiencing financial distress or having difficulty securing financing? YES ☐ NO ☑

   Does Applicant have sufficient cash flow to fund day-to-day operations throughout the proposed Contract period?  
   YES ☑ NO ☐

   If "YES" on the first question or second question, or “NO” on the third question, please provide additional details.
   Response:

6. Within the last three years, has Applicant filed a bankruptcy action, filed for reorganization, made a general assignment of assets for the benefit of creditors, or had an action for insolvency instituted against it?  
   YES ☐ NO ☑

   If "YES," indicate the filing dates, jurisdictions, type of action, ultimate resolution, and dates of judgment or dismissal, if applicable.
   Response:

7. Does Applicant have all required licenses, insurance and/or registrations, if any, and is Applicant legally authorized to do business in the State of Oregon?  
   YES ☑ NO ☐

   If "NO," please explain.
   Response:

8. Pay Equity Certificate. This certificate is required if Applicant employs 50 or more full-time workers and the prospective Contract price is estimated to exceed $500,000. [This requirement does not apply to architectural, engineering, photogrammetric mapping, transportation planning or land surveying and related services contracts.] Does a current authorized representative of Applicant possess an unexpired Pay Equity Certificate issued by the Department of Administrative Services?  
   YES ☑ NO ☐ N/A ☐

   Submit a copy of the certificate with this form.
   Response: See Attachment 5: Pay Equity Certificate.

AUTHORIZED SIGNATURE

By signature below, the undersigned Authorized Representative on behalf of Applicant certifies to the best of his or her knowledge and belief that the responses provided on this form are complete, accurate, and not misleading.

Applicant Name: InterCommunity Health Plans, Inc. dba InterCommunity Health Network Coordinated Care Organization  
RFA: 4690-19  
Project Name: CCO 2.0

Signature: [Signature]  
Title: CEO  
Date: April 15, 2019

(Authorized to Bind Applicant)

Attachment 5: Responsibility Check Form
State of Oregon

OFFICE OF THE SECRETARY OF STATE
Corporation Division

Certified Copy  845V363D3

I, LESLIE CUMMINGS, Deputy Secretary of State of Oregon, and Custodian of the Seal of said State, do hereby certify:

That the attached

Copy of the

Restated

Articles of Incorporation

for

INTERCOMMUNITY HEALTH PLANS, INC.

is a true copy of the original document(s).

In Testimony Whereof, I have hereunto set my hand and affixed hereto the Seal of the State of Oregon.

LESLIE CUMMINGS, DEPUTY SECRETARY OF STATE

3/20/2019
Restated Articles of Incorporation - Nonprofit

In accordance with Oregon Revised Statutes 192.410-192.490, the information on this application is public record. We must release this information to all parties upon request and it will be posted on our website.

Please type or print legibly in black ink. Attach Additional Sheet if Necessary.

1) NAME OF CORPORATION: InterCommunity Health Plans, Inc.

2) NEW NAME OF THE CORPORATION: (If changed)

3) A COPY OF THE RESTATED ARTICLES MUST BE ATTACHED.

4) CHECK THE APPROPRIATE STATEMENT:

☐ The restated articles contain amendments which do not require membership approval. The date of the adoption of the amendments and restated articles was July 2012. These amendments were duly adopted by the board of directors.

☐ The restated articles contain amendments which require membership approval. The date of the adoption of the amendments and restated articles was July 2012.

The vote of the members was as follows:

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<th>Number of members entitled to vote</th>
<th>Number of votes entitled to be cast</th>
<th>Number of votes cast FOR</th>
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5) EXECUTION: (Must be signed by at least one officer or director.)

By my signature, I declare as an authorized authority, that this filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment or both.

Signature: Douglas R. Boysen
Printed Name: Douglas R. Boysen
Title: VP - General Counsel
SIXTH RESTATED ARTICLES OF INCORPORATION

OF

INTERCOMMUNITY HEALTH PLANS, INC.

(Oregon Nonprofit Membership Corporation)

Pursuant to the provisions of the Oregon Nonprofit Corporation Act, the following Sixth Restated Articles of Incorporation are adopted:

ARTICLE I

NAME AND DURATION

The name of the corporation is InterCommunity Health Plans, Inc., and its duration shall be perpetual.

ARTICLE II

TYPE OF CORPORATION

This corporation is a public benefit corporation.

ARTICLE III

PURPOSES

This corporation is organized and operated exclusively for charitable and educational purposes and the promotion of social welfare, including, for such purposes, the making of distributions to organizations that qualify as exempt organizations under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended or the corresponding provision of any future federal income tax laws (the “Code”).

1 - SIXTH RESTATED ARTICLES OF INCORPORATION
OF INTERCOMMUNITY HEALTH PLANS, INC.
Subject to the restrictions set forth in these Articles, the corporation may engage in any lawful activity for which corporations may be organized under ORS Chapter 65.

ARTICLE IV

PROHIBITED TRANSACTIONS

Notwithstanding any other provision in these Articles, this corporation shall engage only in activities which are permitted to be engaged in by a corporation exempt from federal income tax under Section 501(c)(4) of the Code.

The corporation shall not carry on propaganda or otherwise attempt to influence legislation, and the corporation shall not participate in or intervene in (including the publication or distribution of statements) directly or indirectly any political campaign on behalf of or in opposition to any candidate for public office.

No part of the net earnings of the corporation shall inure to the benefit of or be distributable to its directors, officers or other private individuals, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article III hereof.

ARTICLE V

MEMBERSHIP

The corporation is a membership corporation, and its sole member is Samaritan Health Services, Inc.

Except as otherwise provided in these Articles, the rights of the member shall be as set forth in the Bylaws of the corporation. Additional members may be added in accordance with the Bylaws of the corporation.

ARTICLE VI

REGISTERED OFFICE AND AGENT

The name and address of the registered agent and office are: Douglas R. Boysen, 3600 N.W. Samaritan Drive, Corvallis, Oregon 97330.
ARTICLE VII

MANAGEMENT AND DIRECTORS

The affairs of the corporation shall be managed by a Board of Directors as provided by law, these Articles of Incorporation, and the Bylaws of the corporation. The Board of Directors shall be elected or appointed by the member which is Samaritan Health Services, Inc.

ARTICLE VIII

DISTRIBUTION OF ASSETS ON DISSOLUTION

Upon the dissolution or liquidation of the corporation, the assets of the corporation shall be applied and distributed consistent with the requirements of ORS 65.637, or any successor statute, and as follows:

(a) All liabilities and obligations of the corporation shall be paid, satisfied and discharged or adequate provision shall be made therefor;

(b) Assets held by the corporation upon condition requiring return, transfer or conveyance, which condition occurs by reason of dissolution, shall be returned, transferred or conveyed in accordance with such requirements; and

(c) The value of any remaining assets shall be distributed to the member, Samaritan Health Services, Inc.

In the event the member is not then exempt under Section 501(c)(3) of the Code, any remaining assets shall be distributed to an organization or organizations determined by the board of directors, which are organized and operated as charitable, educational or scientific organizations and qualified as exempt from federal income taxation under Section 501(c)(3) of the Code and as exempt from Oregon state income and excise taxes, to be used as nearly as possible for purposes similar to those of this corporation.

ARTICLE IX

ELIMINATION OR LIMITATION OF LIABILITY

No director or uncompensated officer shall be personally liable to the corporation, its members, or any other person for monetary damages for conduct as a director or uncompensated officer; provided, however, that a director or uncompensated officer shall remain liable for:

3 - SIXTH RESTATED ARTICLES OF INCORPORATION
OF INTERCOMMUNITY HEALTH PLANS, INC.
1. Any breach of the director's or officer's duty of loyalty to the corporation or its members;

2. Acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;

3. Any unlawful distribution;

4. Any transaction from which the director or officer derived an improper personal benefit; and

5. Any act or omission in violation of ORS 65.361 to ORS 65.367 of the Oregon Nonprofit Corporation Act (pertaining to director conflicts of interest, loans to or guarantees for directors and officers, and unlawful distributions).

The civil liability of directors, officers, executive board members, and the members shall be limited to the fullest extent permitted under the Oregon Nonprofit Corporation Act.

ARTICLE X

INCORPORATOR

The name and address of the incorporator is Peter F. Stoloff, 121 S.W. Morrison, Suite 600, Portland, Oregon 97204.

ARTICLE XI

PRINCIPAL OFFICE ADDRESS

The principal office address of the corporation is: 3600 N.W. Samaritan Drive, Corvallis, Oregon 97330.

ARTICLE XII

BYLAWS

This corporation may prescribe, in its Bylaws, any provisions for the regulation and management of its affairs not inconsistent with law or with these Articles. Any amendment of the Bylaws shall require the approval of the members of the corporation.

4 - SIXTH RESTATED ARTICLES OF INCORPORATION
OF INTERCOMMUNITY HEALTH PLANS, INC.
The undersigned, being of the age of 18 years or more, declares under penalties of perjury that he has examined the foregoing Sixth Restated Articles of Incorporation and to the best of his knowledge and belief, they are true, correct and complete.

Doug Boysen
Secretary of the Board of Directors
August 27, 2012

Person to contact about this filing:

Douglas R. Boysen
3600 N.W. Samaritan Drive
Corvallis, Oregon 97330
Telephone: (541) 768-4478
<table>
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<th>Document</th>
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<th>Contact Telephone Number</th>
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</thead>
<tbody>
<tr>
<td>Application</td>
<td>Generally</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
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<td>(541) 768-7967</td>
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<td>Charissa White</td>
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<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Application</td>
<td>Attachment 6: General Questions</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Application</td>
<td>Attachment 7: Provider Participation and Operations Questionnaire</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 8: Value Based Payments</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 9: Health Information Technology</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 10: Social Determinants of Health/Health Equity</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
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<td>Application</td>
<td>Attachment 11: Behavioral Health</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 12: Cost and Financial Questionnaire</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 13: Attestations</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 14: Assurances</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 15: Representations</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Application</td>
<td>Attachment 16: Member Transition Plan</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<td></td>
<td>Readiness Review</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<td></td>
<td>Membership and Enrollment</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Sample Contract</td>
<td>Generally</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit B: Statement of Work</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit C: Consideration*</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Sample Contract</td>
<td>Exhibit D: Standard Terms and Conditions</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
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<tr>
<td>Sample Contract</td>
<td>Exhibit E: Required Federal Terms and Conditions</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit F: Insurance Requirements</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit G: Delivery System Network Provider and Hospital Adequacy Report Reporting Requirements</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit H: Value-Based Payments</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit I: Grievance System</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit J: Health Information Technology</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit L: Solvency Plan and Financial Reporting</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit M: Behavioral Health</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
<tr>
<td>Sample Contract</td>
<td>Exhibit N: Social Determinants of Health and Equity</td>
<td>Charissa White</td>
<td>(541) 768-7967</td>
<td><a href="mailto:transformation@samhealth.org">transformation@samhealth.org</a></td>
</tr>
</tbody>
</table>
SHS Solely Owned Legal Entities

Samaritan Health Services, Inc.
§ 501(c)(3)
93-0961989

100% Control

Mid-Valley Healthcare, Inc.
§ 501(c)(3)
93-0396847

Samaritan Albany General Hospital
§ 501(c)(3)
93-0110095

Good Samaritan Hospital Corvallis
§ 501(c)(3)
93-0391573

Samaritan North Lincoln Hospital
§ 501(c)(3)
93-1305493

Samaritan Pacific Health Services, Inc.
§ 501(c)(3)
93-1329784

Lebanon Community Hospital Foundation, Inc.
§ 501(c)(3)
93-1260080

Albany General Hospital Foundation
§ 501(c)(3)
93-0712890

Good Samaritan Hospital Foundation, Corvallis
§ 501(c)(3)
23-7252406

North Lincoln Hospital Foundation
§ 501(c)(3)
93-0867677

Samaritan SeniorCare, Inc.
§ 501(c)(3)
93-1245534

Samaritan Resources, LLC
93-1262271

FirstCare Health Foundation
§ 501(c)(3)
93-0900124

FirstCare Medical Foundation
§ 501(c)(3)
93-0932697

Boulder Falls Properties, LLC
46-5293210

Paradigm Indemnity Corporation
73-1668317

InterCommunity Health Plans, Inc.
§ 501(c)(4)
93-1124326

Samaritan Health Plans, Inc.
93-0860860

Samaritan Dialysis Services, LLC
93-1246968

Attachment 6: Control of Ownership Chart
PRESCRIPTION DRUG BENEFIT ADMINISTRATION AGREEMENT

This Prescription Drug Benefit Administration Agreement, effective January 1, 2016 ("Effective Date"), is between Samaritan Health Services, Inc., an Oregon nonprofit corporation ("Client"), and OptumRx, Inc., a California corporation ("Administrator").

The parties agree as follows:

1. PRESCRIPTION DRUG BENEFIT SERVICES.

   1.1 Engagement.

   1.2 Performance Standards.

   1.3 Compliance with Laws.

       Each party will comply with all Laws and Regulations applicable to its respective business and the performance of its obligations under this agreement, including maintaining any necessary licenses and permits. If a party's performance as required by this agreement is prohibited by or conflicts with any applicable Laws and Regulations, then the party whose performance is owed or required will be required to perform, but only to the extent permitted by applicable Laws and Regulations. Any provisions now or hereafter required to be included in this agreement by applicable Laws and Regulations or any Governmental Authority will be binding and be enforceable against the parties and deemed incorporated in this agreement, irrespective of whether these provisions are expressly provided for in this agreement.

2. TERM AND TERMINATION

   2.1 Term.

   2.2 Termination.
2.2.1 Mutual Agreement.

2.2.2 For Cause.

2.2.3 Payment Default.

2.2.4 Automatic Bankruptcy Termination.

To the fullest extent permitted by applicable Laws and Regulations, in the event of a Bankruptcy Event affecting either Administrator or Client. "Bankruptcy Event" means that Client or Administrator: (a) cannot pay its debts generally as they become due; (b) makes a voluntary assignment for the benefit of creditors; (c) is declared insolvent in any proceeding; (d) commences a voluntary case or other proceeding seeking liquidation, reorganization, insolvency, readjustment of debt, liquidation, or dissolution; (e) is named as a debtor or party in a case or proceeding and indicates its approval or consent or acts in furtherance of the case or proceeding, or if the case or proceeding is not dismissed or stayed for 60 days after it begins, or is the subject of any order appointing a receiver, liquidator, custodian or trustee or approving the petition in any such case or proceeding; or (f) the sum of the party's debts (including contingent obligations) exceeds the fair market value of the party's assets, exclusive of any property transferred, concealed, or removed with the intent to hinder, delay or defraud the party's creditors.

2.2.5 Adverse Legal Determination.

Subject to section 8.4, either party may terminate this agreement immediately upon notice to the other party (a) following a Judgment (as defined in section 6.1). or change in any applicable Laws and Regulations that would make performance of this agreement, in all material respects, unlawful or illegal for the terminating party, or (b) if a Governmental Authority requires either party to terminate this agreement.
2.2.6 For Convenience.

2.3 Effect of Termination.

2.4 Transition Assistance Following Termination.

3. COMPENSATION AND BILLING

3.1 Compensation.

3.2 Compensation Changes.
3.3 Payment Terms.

3.4 Timely Notice of Overpayment.

3.5 Late Payments and Late Fees.

3.6 Right of Recoupment.

3.7 Payment from Members.

3.8 Claims Processor Fees.
3.9. Broker Fee.

4. MAINTENANCE OF RECORDS; AUDITS

4.1 Records.

4.2 Client Audits.

5. DATA PROTECTION AND OWNERSHIP

5.1 Data Ownership.
5.2 Use of Name

5.3 Confidentiality

5.3.1 Confidentiality Obligations.

5.3.2 Definition of Confidential Information.
5.3.3 Exceptions to Confidentiality Obligations.

5.4 Return of Confidential Information.

5.5 Protected Health Information.

5.6 Equitable Relief.

6. INDEMNIFICATION; INSURANCE; LIMITATION OF LIABILITY

6.1 Indemnification.
6.2 Insurance Requirements.

Each party will maintain: (a) during and for a reasonable period of time after the Term, reasonable and customary insurance (whether through third party carriers or self-insured arrangements or retentions), as to type, policy limits and other coverage terms, to cover the risks of loss faced by companies similar to the party in size, industry and business operations; and (b) all insurance coverage, bonds, security and financial assurances as applicable Laws and Regulations may require from time-to-time.

6.3 Limitation of Liability and Claims.

7. TAXES AND ASSESSMENTS

7.1 Payment of Taxes and Expenses.
7.2 Tax Reporting.

7.3 State and Federal Surcharges, Fees and Assessments.

8. MISCELLANEOUS

8.1 Subcontractors.

8.2 Notices.

8.3 Amendment.
8.4 Independent Contractor.

The parties are independent contractors, and no agency, partnership, joint venture, employee-employer or franchiser-franchisee relationship is intended or created by this Agreement. Administrator and all of Administrator's employees, agents, and contracted staff (collectively "Administrator's Staff") while performing the Services are independent contractors and not employees of Client. Administrator's Staff are not eligible for nor will they participate in Client's benefit, worker's compensation, retirement or insurance plans or programs. No tax of any kind will be withheld or paid by Client on behalf of Administrator or Administrator's Staff.

8.5 Access to Books and Records.

If required by law, the Comptroller General, Department of Health and Human Services and their duly authorized representatives shall have access to this Agreement and records for all times covered by this Agreement necessary to verify the nature, extent and costs of the Services provided by Administrator and included in Client's cost report, both during and for four (4) years after this Agreement terminates. This access shall be provided in accordance with the provisions of Public Law 96-499, Omnibus Reconciliation Act of 1980, as amended. The Comptroller General and his/her duly authorized representative shall have similar access to agreements subject to 42 USC 1395 between Administrator and any organization related to Administrator and to books, documents and records of Administrator and such organizations solely as they relate to the performance of the Services under this Agreement.

8.6 Compliance.

Administrator, and any Services provided to Client will comply with all federal, state, and local laws applicable to them; all applicable standards of Client's accrediting organization; and all best practices required by their license or certification, if any. Administrator warrants: a) all Services will be performed in a professional manner consistent with specifications and industry standards; b) Administrator and its Staff will comply with Client's patient care and vendor access policies while at any Client facilities; c) Administrator and its Staff possess the requisite licenses (if any), expertise, and equipment necessary to perform the Services; and d) neither Administrator nor its Staff are excluded from participation in Medicare or Medicaid programs. In the event that Administrator or any of its Staff who provide Services are excluded from Medicare or Medicaid, Administrator shall immediately notify Client. As a result of the Deficit Reduction Act, Client has adopted a False Claims Prevention Policy. While providing Services under this Agreement, Administrator will comply with this Policy and adhere to applicable Federal and Oregon Laws. Administrator has received informed consent to and will conduct a criminal background check on its Staff assigned to Client prior to the start of any Services performed at a Client facility. Administrator warrants that any software provided pursuant to this Agreement does not contain any virus or other malicious code that may disable the software or provide unwanted functions outside of the software's descriptions and specifications. Any software or products created or provided will be the latest version available, new or good as new, safe for use, and perform and function as provided in its documentation.
8.7 Waiver; Severability.

The failure of any party to insist in any one or more instances upon performance of any term of this agreement will not be construed as a waiver of future performance of the term, and the party’s obligations for the term will continue in full force and effect. The provisions of this agreement are severable. The invalidity or unenforceability of any term or provision in any jurisdiction will be construed and enforced as if it has been narrowly drawn so as not to be invalid, illegal or unenforceable to the extent possible and will in no way affect the validity or enforceability of any other terms or provisions in that jurisdiction or of this entire agreement in that jurisdiction.

8.8 Assignment.

A party may not assign, delegate or transfer this agreement without the prior written consent of the other party, except that Administrator may assign this agreement to any affiliate upon 30-day notice to Client, so long as Administrator remains obligated under this agreement. This agreement will bind the parties and their respective successors and assigns and will inure to the benefit of the parties and their respective permitted successors and assigns.

8.9 Governing Law.

This agreement and each party’s rights and obligations under it will be governed by and construed in accordance with the laws of Oregon, without giving effect to conflicts of law principles.

8.10 Force Majeure.

If any party is prevented from performing or cannot perform any of its obligations under this agreement because of any cause beyond the reasonable control of and not the fault of the party invoking this section, including any act of God, fire, casualty, flood, earthquake, war, strike, lockout, epidemic, destruction of production facilities, riot, insurrection or material unavailability, and if the non-performing party has been unable to avoid or overcome its effects through the exercise of commercially reasonable efforts, this party will give prompt notice to the other party, its performance will be excused, and the time for its performance will be extended for the period of delay or inability to perform due to such occurrences, except that if performance is extended under this section for more than 60 days, then at any time before reinstatement of the performance, the other party may terminate this agreement upon notice to the non-performing party. Administrator will maintain commercially reasonable business continuity and disaster recovery plans.

8.11 Relationship of the Parties; Third Party Beneficiaries.

The sole relationship between the parties is that of independent contractors. This agreement will not create a joint venture, partnership, agency, employment or other relationship between the parties. Nothing in this agreement will be construed to create any rights or obligations except among the parties; no person or entity will be regarded as a third party beneficiary of this agreement.

8.12 Survival.

Any term of this agreement that contemplates performance after termination of this agreement will survive expiration or termination and continue until fully satisfied, including section 5, which will survive so long as the information is Confidential Information or the data is proprietary to either party or its successors, successors-in-interest or assigns, and section 6, which will survive indefinitely.
8.13 Attorneys' Fees.

In the event of any dispute involving this agreement (including an arbitration), the substantially prevailing party will be entitled to recover its reasonable legal fees, costs and other expenses incurred in resolving or settling the dispute, in addition to all other damages or relief that a court or arbitrator deems proper.

8.14 Dispute Resolution.

8.15 Integrated Agreement; Interpretation; Execution.
The parties’ duly authorized representatives are signing this Prescription Drug Benefit Administration Agreement as of the Effective Date.

CLIENT
Samaritan Health Services, Inc.

By: ____________________________
Name: Whitley __________
Title: VP COO Samaritan Health Plans __________

ADMINISTRATOR
OptumRx, Inc.

By: ____________________________
Name: Jeff Grosklags
Title: CFO
Attachment 6: General Questions

Background Information about IHN-CCO

A1. Describe the Applicant’s Legal Entity status, and where domiciled.

IHN-CCO’s legal entity status, and where domiciled: InterCommunity Health Plans, Inc. dba InterCommunity Health Network Coordinated Care Organization (IHN-CCO) is a public benefit corporation, organized and operated exclusively for charitable and educational purposes, functioning as a 501(c)(4) under the IRS, and domiciled in the State of Oregon.

A1a. Describe Applicant’s Affiliates as relevant to the Contract.

IHN-CCO is currently made up of the following Affiliates relevant to the contract: Samaritan Health Services (SHS) has 100% control over IHN-CCO. Samaritan Health Plans (SHP) is under 100% control of SHS, therefore is an affiliate of IHN-CCO.

A1b. Is the Applicant invoking alternative dispute resolution with respect to any Provider (see OAR 410-141-3268)? If so, describe.

No, IHN-CCO is not invoking alternative dispute resolution with respect to any Provider.

A1c. What is the address for the Applicant’s primary office and administration located within the proposed Service Area?

IHN-CCO’s primary office and administration address is in Benton County:
   2300 NW Walnut Boulevard
   Corvallis, OR 97330

A1d. What counties are included in this Service Area? Describe the arrangements the Applicant has made to coordinate with county governments and establish written agreements as required by ORS 414.153.

Benton, Lincoln, and Linn counties are the Service Area. IHN-CCO has coordinated and established written agreements with county governments as the CCO for the Service Area listed in the 2019 Contract as required by ORS 414.153.

A1e. Prior history:

A1e(1). Is Applicant the Legal Entity that has a contract with OHA as a CCO as of January 1, 2019 (hereinafter called "Current CCO")?

Yes, Applicant is the Legal Entity that has a contract with OHA as a CCO as of January 1, 2019.

A1e(2). If no to 1, is Applicant the Legal Entity that had a contract with OHA as a CCO prior to January 1, 2019?
N/A

A1e(3). If no to 1 and 2, is Applicant an Affiliate with or a Risk Assuming Entity of a CCO that has a current or prior history with OHA?

N/A

A1e(4). If no to 1, 2, and 3, what is Applicant’s history of bearing health care risk in Oregon?

N/A

A1f. Current experience as an OHA contractor, other than as a Current CCO. Does this Applicant (or an Affiliate of Applicant) currently have a contract with the OHA as a licensed insurer or health plan third party administrator for any of the following (hereinafter called “Current OHA Contractor”)? If so, please provide that information in addition to the other information required in this section.

- Public Employees Benefit Board
- Oregon Educators Benefit Board
- Adult Mental Health Initiative
- Cover All Kids
- Other (please describe)

IHN-CCO has experience with, and is currently, an OHA contractor through the Cover All Kids contract.

A1g. Does the Applicant (or an Affiliate of Applicant) have experience as a Medicare Advantage contractor? Does the Applicant (or an Affiliate of Applicant) have a current contract with Medicare as a Medicare Advantage contractor? What is the Service Area for the Medicare Advantage plan?

Samaritan Health Plans maintains a Medicare Advantage contract with the Center for Medicare and Medicaid Services (CMS) for Benton, Lincoln and Linn counties, Oregon. This contract has been in effect since 2005 and includes contracting with Medicare as a Special Needs Plan currently in Benton, Lincoln, and Linn counties.

A1h. Does Applicant have a current Dual Special Needs Coordination of Benefits Agreement with OHA to serve Fully Dual Eligible Members?

Yes, IHN-CCO has a current Dual Special Needs Coordination of Benefits Agreement with OHA to serve Fully Dual Eligible Members.

A1i. Does the Applicant (or an Affiliate of Applicant) hold a current certificate of authority for transacting health insurance or the business of a health care service contractor, from the Department of Consumer and Business Services, Division of Financial Regulation?
Yes, Samaritan Health Plans, an affiliate of IHN-CCO, holds a current certificate of authority for transacting health insurance or the business of a health care service contractor, from the Department of Consumer and Business Services, Division of Financial Regulation.

A1j. Does the Applicant (or an Affiliate of Applicant) hold a current contract effective January 1, 2019, with the Oregon Health Insurance Marketplace?

No, IHN-CCO does not hold a current contract effective January 1, 2019, with the Oregon Health Insurance Marketplace.

A1k. Describe Applicant’s demonstrated experience and capacity for engaging Community members and health care Providers in improving the health of the Community and addressing regional, cultural, socioeconomic and racial disparities in health care that exist among Applicant’s enrollees and in Applicant’s Community.

IHN-CCO embraces a collaboration model called Collective Impact; bringing together providers, community partners, local government, citizens, and members to transform health in our region. IHN-CCO has identified stakeholders in the past seven years that coincide with the identified stakeholders from the Oregon Health Authority, including but not limited to: community-based organizations that address disparities and the social determinants of health, bilingual and bicultural providers, Traditional Health Workers, interpreters and translators, mental and public health authorities, and more. IHN-CCO facilitates major projects that have the Community Advisory Council, the partners listed above, and others as shared-decision makers, ensuring the voice of the community is heard and they are engaged in our efforts to improve community health and address disparities.

A1l. See Attachment 6: Résumés for Key Personnel.

A1m. See Attachment 6: Contact Chart.

Corporate Organization and Structure

B1a. See Attachment 6: Articles of Incorporation.

B1b. Samaritan Health Services, Inc. has 100% control over InterCommunity Health Plans, Inc. (aka IHN-CCO). See Attachment 6: Control of Ownership Chart.

B1c. Describe any licenses the corporation possesses.

IHN-CCO does not possess any licenses.

B1d. Describe any administrative service or management contracts with other parties where the Applicant is the provider or Recipient of the services under the contract. Affiliate contracts are excluded in this item and should be included under Section C.
All administrative services or management contracts are within an affiliate contract, see section C below. IHN-CCO has no other administrative service or management contracts with other parties.

Corporate Affiliations, Transactions, Arrangements

C1a. See Attachment 6: Schedule Y for organization chart or listing. IHN-CCO purchases the following business functions from Samaritan Health Services (SHS): Information technology, human resources, legal, accounting, and other administrative services. IHN-CCO purchases compliance services from Samaritan Health Plans (SHP), and partners with SHP for care coordination and management of Dual Eligible members.

C1b. Describe of any expense arrangements with a parent or Affiliate organization. Provide detail of the amounts paid under such arrangements for the last two years. Provide footnotes to the operational budget when budgeted amounts include payments to Affiliates for services under such agreements.

IHN-CCO maintains administrative agreements with the parent organization SHS, and compliance and performance agreements with its affiliate SHP. Details of the amounts paid under these expense arrangements are described in the following footnotes to our operational budget:

- IHN-CCO purchases administrative services from SHS in the form of information technology, human resources, legal, accounting, and other administrative services. SHS uses a shared service model to centralize these services for its organizations to gain efficiencies and cost effectiveness. In 2018 the agreement totaled $1,760,520, and in 2017 $1,725,996.
- IHN-CCO leases office space from SHS. In 2017 and 2018 IHN-CCO leased space at the 2300 NW Walnut building in Corvallis, Oregon. SHS charges a market rate on a square footage basis. In 2018 the lease totaled $1,033,845 and in 2017 $1,009,230.
- IHN-CCO purchases compliance services from its affiliate SHP. SHP is contracted for Medicare Advantage plans and as such supports a robust compliance function. To perform these services SHP charges IHN-CCO a $5 per member per month to oversee the compliance function. This arrangement centralizes the expertise required for Medicare and Dual Eligible members to gain efficiencies. In 2018 these costs totaled $3,303,275 and in 2017 $3,213,274.
- IHN-CCO partners with SHP to manage the health condition and risks of Dual Eligible members. An agreement is in place with SHP to share any cost savings achieved through the shared management of the members. In 2018 IHN-CCO shared $2,016,869 with SHP and in 2017 $7,697,059.

C1c. Describe Applicant’s demonstrated experience and capacity for:
- Managing financial risk and establishing financial reserves
- Meeting the minimum financial requirements for restricted reserves and net worth in OAR 410-141-3350.
IHN-CO and its affiliated insurance plans are very experienced in managing the financial risks and reserves required of a health insurance plan. IHN-CO utilizes the Board of Directors, Finance Oversight Council, Finance Committee, and dedicated finance accounting and analysis departments to provide oversight of financial reserves, performance, and risk. While IHN-CO is not required to adhere to NAIC reporting standards, through its affiliate SHP, the financial process and review are based on NAIC insurance practices. IHN-CO maintains necessary reserves as required and calculated in Schedule L. Appropriate reserves are held in trust accounts to ensure solvency for IHN-CO’s liabilities. Since the inception as InterCommunity Health Plans, Inc. in 1993 and IHN-CO in 2012, IHN-CO has maintained consistent and adequate reserve balances to meet the financial risks of the plan.

IHN-CO contracts with an outside actuarial firm to review incurred but not received (IBNR) balances annually and when finance oversight deems appropriate. The actuarial determinations ensure IHN-CO is properly reserved each fiscal year. In addition, these reserves are reviewed by an outside financial auditing firm to provide a second independent review for the IHN-CO Board of Directors.

IHN-CO adheres to an investment policy that limits portfolio balances and investments to be of sound risk and follow OAR 410-141-3350 requirements for restricted reserves and net worth. The investment policy is approved by the Board, and the investment portfolio is reviewed by the Board on an annual basis.

**Subcontracts**

D1a. Please identify and describe any business functions the Contractor subcontracts or delegates to Affiliates.

IHN-CO currently subcontracts for a portion of the following business functions to affiliate SHS: administrative staffing, human resources, information systems, provider credentialing, accounting, and legal. IHN-CO purchases compliance services from Samaritan Health Plans (SHP), and partners with SHP for care coordination and management of Dual Eligible members.

D1b. What are the major subcontracts IHN-CO expects to have? Please provide an example of subcontracted work and describe how Applicant currently monitors Subcontractor performance or expects to do so under the Contract.

See Attachment 6: Subcontract Examples and Attachment 6: Subcontracts and Delegated Entities Report.

The major subcontracts IHN-CO expects to have are Optum Rx, Advantage Dental Services, LLC, Capitol Dental Care, Inc., Oregon Dental Service, and Willamette Dental Group, P.C.

How IHN-CO currently monitors performance:

The responsible operational area and SHP Compliance Department monitor and audit to ensure that they are in compliance with all applicable laws, rules and regulations with respect to
delegated responsibilities, and to ensure that the monitoring the entities with which they contract (their downstream entities). The Compliance Department may also audit Related Entities to ensure those entities are compliant with all applicable state and federal laws, regulations, and policies. SHP may request proof of downstream monitoring activities.

IHN-CCO routinely performs oversight of Optum Rx’s Pharmacy Benefit Management (PBM) activities such as pharmacy claim rejections, formulary exception processing, benefit administration, business continuity and disaster recovery preparedness, and other administration of clinical programs. OptumRx provides IHN-CCO with a quarterly performance review to ensure they are meeting contract expectations.

IHN-CCO’s four Dental Care Organizations (DCOs) are monitored regularly for performance. The DCOs are Advantage Dental Services, LLC, Capitol Dental Care, Inc., Oregon Dental Service, and Willamette Dental Group, P.C. IHN-CCO reimburses all DCOs based on percentage of measures met. All DCOs are provided with a scorecard periodically and final performance is calculated annually. Quality measures include the following:

- Dental health assessments for kids in DHS (Department of Human Services) custody
- Dental sealants on permanent molars for children
- Follow-up within 14 days of an emergency department visit for dental caries
- Internal survey: Satisfaction and access
- Meaningful use: EHR (electronic health record) certification
- Oral evaluation for adults with diabetes
- Pregnancy and oral health: Increase the percent of members who have a dental visit during pregnancy
- Preventive services for elevated cares risk focus metric

Third Party Liability

E1a. How will Applicant ensure the prompt identification of Members with TPL across its Provider and Subcontractor network?

IHN-CCO will ensure providers promptly identify members with third party liability (TPL) through our online Provider Manual policy as well as through provider contract language. In addition, IHN-CCO has a robust system in place for identifying members with TPL. This includes maintaining member other coverage information in IHN-CCO’s core processing system to be utilized in claim processing. Claims received indicating other coverage that is not current in our system are promptly researched and our system updated. Claims are identified for potential TPL when submitted with designated diagnosis codes. These are then managed via the “pay and pursue” methodology. Subrogation Coordinators work with members, attorneys, Department of Human Services (DHS), providers and the County Court systems to capture additional TPL savings through subrogation in collaboration with the State.

E1b. How will Applicant ensure the prompt identification of Members covered by Medicare across its Provider and Subcontractor network?
IHN-CCO currently serves 1,500 members who are dually enrolled on the Samaritan Advantage Special Needs Plan and eligibility on both plans is contained in one system for these members, ensuring both prompt identification and automated claims processing on both plans. After adjudication on the Samaritan Advantage Medicare plan, claims are electronically converted to IHN-CCO claims where they are processed for secondary payment. For Medicare members on fee for service (FFS) or other Advantage plans, claims are received from Centers for Medicare and Medicaid Services (CMS) via the Coordination of Benefits Agreement (COBA) electronic data interchange (EDI) files. These are promptly processed following coordination of benefits (COB) rules and procedures. Any enrollment discrepancies are coordinated with the Medicaid State Liaison.

Oversight and Governance

F1a. IHN-CCO’s governing board, how board members are elected or appointed, how the board operates, and decisions that are subject to approval by a person other than IHN-CCO:

The sole member of IHN-CCO as a corporation is Samaritan Health Services, Inc. The management of the affairs of IHN-CCO is vested in its Board of Directors. The number of Directors of the Corporation is no less than 9 and no more than 19. The composition meets the standards set forth under ORS 414.625(1)(0) to constitute a Coordinated Care Organization, the majority of the members of the Board of Directors must share in the financial risk of the Corporation, and the Chief Executive Officer (CEO) of SHS holds a position on the Board. The Board is comprised of the Samaritan Health Services CEO/President as the Chair of Board, Samaritan Health Services’ Hospital CEO, two physicians, one dentist, one mental health practitioner, one certified public accountant, two county commissioners, and one county administrative officer. SHS, as the sole member, is the decision-maker for nominations for membership on the Board. Other decisions are reviewed and approved by the IHN-CCO Board of Directors.

F1b. Key committees’ composition, reporting relationships and responsibilities, oversight responsibility, and monitoring activities are as follows:

**Finance Operations Council/Committee** - The purpose of the Finance Committee is to provide financial insights and analysis to the Finance Operations Council and IHN-CCO staff to raise the financial acumen of our managers and employees. The committee identifies, addresses and coordinates solutions of financial risks facing IHN-CCO as directed by the Finance Operations Council. The Finance Committee oversees operational finance processes and audits. The Finance Operations Council serves to review and approve IHN-CCO financial reporting.

**Data Governance Council/Steering Committee** - The Data Governance Council provides oversight and decision making related to business data and information. The Data Governance Steering Committee provides strategic direction on business processes, data management, key performance indicators and performance metrics. They serve as the highest point of escalation.

**Delivery System Transformation Committee/Regional Planning Council** - The Delivery System Transformation Committee (DST)’s major goal is to utilize the collective impact model
to build on current resources and partnerships to transform the delivery system in Benton, Lincoln, and Linn counties. The DST formally reports to and takes direction from the IHN-CCO Regional Planning Council (RPC). Membership of the DST is open to anyone that can positively affect the health outcomes of IHN-CCO members in Benton, Lincoln, and Linn counties. Membership of the RPC is comprised of community and IHN-CCO leaders.

**Quality Improvement Committee/Quality Management Council** - The Quality Improvement Committee (QIC) consists of representation from all core IHN-CCO departments and reports directly to the Quality Management Council (QMC). The QIC collects and analyzes utilization data to assess any potential over or under utilization of physical health and dental services and develops recommendations for the QMC. The QMC is the oversight group for all IHN-CCO quality activities and is comprised of IHN-CCO and community leadership.

F1c. The composition, reporting responsibilities, oversight responsibility, and monitoring activities of the IHN-CCO CAC:

The composition of the CAC is 19 representatives, with IHN-CCO members, parents, caregivers, or legal guardians of IHN-CCO members constituting a majority of the membership. The CAC advises and makes recommendations to IHN-CCO to aid in strategic planning and implementation to improve the health and health care of IHN-CCO members. The relationship between the CAC and the IHN-CCO is inclusive, collaborative, and of mutual support in the furtherance of optimal health care services for IHN-CCO members. The CAC reports directly to the IHN-CCO Board of Directors.
Extensive and accomplished leader with experience in healthcare delivery, reform and transformation. Interested in continuing to drive the transformation of the healthcare delivery system through collaboration, patient centered care and strategic leadership. Proven track record in Healthplan operations with a focus on government, self funded and commercial plans. Well versed at supporting and navigating within an Integrated Delivery Network (IDN) while maintaining a focus on Population Health and meting the Triple Aim, managing cost, quality and access.

PROFESSIONAL EXPERIENCE

Samaritan Health Services  
Corvallis, Oregon  
April 2002 - Present  
VICE-PRESIDENT CORPORATE SERVICES  
RESPONSIBILITIES INCLUDE: RESPONSIBLE FOR VARIOUS OPERATIONAL ASPECTS OF THE INTEGRATED DELIVERY NETWORK, INCLUDING BUT NOT LIMITED TO THE OVERSIGHT OF ENTERPRISE WIDE CREDENTIALING, FACILITIES MANAGEMENT, CORPORATE PLANNING AND INVOLVEMENT WITH DATA GOVERNANCE AND HEALTH REFORM, SERVE AS THE CHIEF EXECUTIVE OFFICER FOR SAMARITAN HEALTH PLANS AND INTERCOMMUNITY HEALTH PLANS AS DESCRIBED BELOW.

Samaritan Health Plans  
Corvallis, Oregon  
January 2005 - Present  
CHIEF EXECUTIVE OFFICER  
RESPONSIBILITIES INCLUDE: STRATEGIC LEADER FOR A HOSPITAL OWNED PHYSICIAN DRIVEN INSURANCE PLAN FOCUSING ON MEDICARE ADVANTAGE AND COMMERCIAL PLANS. RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF THE STRATEGIC PLAN WHICH INCLUDES: THE RESEARCH AND DEVELOPMENT OF NEW GROWTH OPPORTUNITIES, DEVELOPMENT AND MONITORING OF QUALITY MEASURES AS THEY RELATE TO NCQA STANDARDS, AND THE IMPLEMENTATION OF FURTHER EXPANSION TO ALL LINES OF BUSINESS. ADDITIONAL RESPONSIBILITIES INCLUDE COORDINATION WITH THE OWNER INTEGRATED DELIVERY SYSTEM TO INCREASE THE EFFECTIVENESS OF THE SYSTEM OF CARE WITHIN OUR COMMUNITY.

InterCommunity Health Plans  
Corvallis, Oregon  
March 1999 - Present  
CHIEF EXECUTIVE OFFICER  
RESPONSIBILITIES INCLUDE: STRATEGIC LEADER FOR A HOSPITAL OWNED COMMUNITY/PHYSICIAN DRIVEN MANAGED MEDICAID PLAN. RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF THE STRATEGIC PLAN. INTERCOMMUNITY HEALTH PLANS IS COMMITTED TO IMPROVING THE HEALTH OF OUR COMMUNITIES WHILE LOWERING OR CONTAINING THE COST OF CARE. WE ACCOMPLISH THIS BY COORDINATING HEALTH INITIATIVES, SEEKING EFFICIENCIES THROUGH BLENDING OF SERVICES AND INFRASTRUCTURE AND ENGAGING ALL STAKEHOLDERS TO INCREASE QUALITY, RELIABILITY AND
AVAILABILITY OF CARE WITH A STRONG FOCUS ON THE SOCIAL DETERMINANTS OF HEALTH.

InterCommunity Health Plans  
Corvallis, Oregon  
CHIEF OPERATING OFFICER  
May 1998 – March 1999

InterCommunity Health Network  
Corvallis, Oregon  
GOVERNMENT PROGRAMS MANAGER  
September 1995 - May 1998

Women's Care, PC  
Eugene, Oregon  
ASSISTANT ADMINISTRATOR  
June 1990 - September 1995

ASSISTED IN OVERSEEING THE DAILY OPERATIONS OF THIS FOURTEEN-PHYSICIAN THREE COST CENTER PRACTICE.

RESPONSIBILITIES INCLUDE: ANALYSIS OF CPT CODES AND REIMBURSEMENT RATES, MAINTAINING MAL-PRACTICE AND GENERAL INSURANCE COVERAGE, AND SUPERVISION OF INTERNS. ASSISTED IN ALL ADMINISTRATIVE OPERATIONS OF THE CORPORATION INCLUDING, PAYROLL, EMPLOYEE BENEFIT PACKAGES, CORPORATE/PENSION PLAN RECORDS, AND GENERAL ACCOUNTING FUNCTIONS.

EDUCATION

Oregon State University  
Corvallis, Oregon  
BACHELORS OF SCIENCE IN HEALTH CARE ADMINISTRATION  
June 1993

Oregon State University  
Corvallis, Oregon  
MASTERS OF PUBLIC HEALTH IN HEALTH POLICY AND MANAGEMENT  
June 1999

COMMUNITY ACTIVITIES

OREGON STATE CREDIT UNION – BOARD MEMBER SINCE 2009

ROTARY CLUB – MEMBER OF THE CORVALLIS ROTARY CLUB MEMBER SINCE 2005

CORVALLIS CHAMBER OF COMMERCE – PAST BOARD CHAIR, MEMBER SINCE 2002 – MEMBER OF THE GOVERNMENT AFFAIRS COMMITTEE

2008 JUNIOR FIRST CITIZEN – CELEBRATE CORVALLIS

OREGON STATE UNIVERSITY COLLEGE OF PUBLIC HEALTH AND HUMAN SCIENCES – COMMUNITY ADVISORY COMMITTEE MEMBER

PROFESSIONAL ORGANIZATIONS/ASSOCIATIONS

AMERICAN COLLEGE OF HEALTHCARE EXECUTIVES – ACTIVE MEMBER

HEALTH PLAN ALLIANCE – BOARD MEMBER AND INCOMING BOARD CHAIR


CHAIR, OHP CONTRACTORS COMMITTEE (2001 – 2002)

VICE-CHAIR, OHP CONTRACTORS COMMITTEE (2000 – 2001)
KEVIN EWANCHYNA
VP-Chief Medical Officer
Samaritan Health Plans/InterCommunity Health Network - CCO

Profile
Dedicated and hard-working individual with a strong sense of self and ability to work as a member of a cohesive team

Experience

CHIEF MEDICAL OFFICER/VP, SAMARITAN HEALTH PLANS; CORVALLIS, OR – 2012-PRESENT
Quality program implementation, utilization review, Pharmacy and Therapeutics management, team-based philosophy

VICE PRESIDENT MEDICAL AFFAIRS, SAMARITAN HEALTH SERVICES; CORVALLIS, OR - 2006-2012
Operational management of multiple primary care clinics in a three-county service area in the mid-Willamette Valley of Oregon

FAMILY PHYSICIAN, SAMARITAN FAMILY MEDICINE/ SAMARITAN URGENT CARE CENTER; CORVALLIS, OR - 1998 TO PRESENT
Urgent Care clinical physician and Family Physician

TEACHING PHYSICIAN, SAMARITAN FAMILY MEDICINE RESIDENCY; CORVALLIS, OR - 2008-PRESENT
Teaching faculty with oversight of Family Medicine Residents

Clinical Assistant Professor of Family Medicine, Western University of Health Sciences: October 2012 to present

Education
Family Medicine Residency, University of Saskatchewan - completion June 1994

Medical Degree, University of Saskatchewan College of Medicine - completion May 1992

Bachelor of Science in Anatomy, University of Saskatchewan - completion May 1987
Licensing Examinations/Board Certification/Commission

LMCC (Licentiate of the Medical Council of Canada) - Part I 5/91, Part II 10/92
CCFP (Canadian College of Family Physicians) Licensing Exam - 4/94
Diplomate, American Board of Family Medicine - 7/2003, 11/2013
Commission from HRH Queen Elizabeth II - Officer Commission Canadian Armed Forces, 1990

Community Involvement/Volunteer Experiences

Leadership Corvallis Graduate - Class of 2007
Leadership Albany Graduate - Class of 2009
Corvallis Public Schools Foundation Board of Directors - 2008-2011
CASA (Court Appointed Special Advocates) Benton County Board of Directors
Corvallis Sister City Association Board of Directors
Volunteer Medical Support - OSU Student Athletics, Community Outreach, Linn Benton Pop Warner Football
Co-Chair Oregon Health Authority Common Credentialing Advisory Group –present
Board of Trustees, Oregon Medical Association
Annual Ewanchyna Family Bread and Cookie Sale for Charity
City of Corvallis First Citizen nomination 2013

Hospital Affiliations

Good Samaritan Regional Medical Center – 1998-present
Samaritan Albany General Hospital – 2006 -present
Samaritan Lebanon Community Hospital – 2006-present

Professional Memberships

Oregon Medical Board
Oregon Association of Family Physicians
Oregon Medical Association
American Medical Association
American Medical Group Association
College of Family Physicians of Canada
American College of Healthcare Executives
American Association for Physician Leadership (formerly American College of Physician Executives)
Samaritan Health Services Quality Council
Samaritan Health Services Community Benefit Committee
Samaritan Health Plans Quality Management Committee, Credentialing Committee, Compliance Committee and P&T Committee
Oregon Health Leadership Council Evidence Based Best Practices Committee
Oregon Health Authority Common Credentialing Advisory Group
Daniel B. Smith, FHFMA, CPA

Education

George Fox University, Portland, OR

Masters of Science, Business Administration: December 2007
  ▪ Cumulative GPA: 3.9

California State University, Chico

Bachelor of Science, Business Administration: December 1988
  ▪ Accounting Concentration
  ▪ Cumulative GPA: 3.3

Professional experience

6/2003 – Present  Samaritan Health Services    Corvallis, OR

Chief Financial Officer
  ▪ Responsible for all financial operations of a major health system including five hospitals with 360 combined licensed beds, 120 employed physician practice and two senior care facilities. Accountable for implementation of the financial vision of the organization.


Corporate Controller
  ▪ Assumed corporate responsibilities for financial functions across five hospitals and three medical groups. Strategically developed corporate positions to assist with integration and standardization across a growing multi-entity organization.


Chief Financial Officer
  ▪ Responsible for several departments within the hospital including Accounting, Materials Management, Admitting/Registration, Business Office and Medical Records. Presented financial information to the Board of Directors on a monthly basis.


Controller
  ▪ Supervised Accounting Department staff in preparation of financial statements. Ensured timely and accurate payroll for all employees of the 76-bed hospital and 40-physician medical group.

Senior Accountant
- Provided accounting support to the Controller in preparation of the financial statements. Performed detailed analyses as requested. Created accounting system for newly formed medical group.


Senior Tax Consultant
- Prepared and supervised the preparation of individual, corporation and partnership income tax returns as well as information returns for tax-exempt entities. Developed excellent communication skills while working with clients on technical issues.

1/1989 – 3/1990    Ernst & Young    Sacramento, CA

Audit Senior
- Supervised firm personnel and performed audit procedures for clients in various industries including banking, real estate, health care, insurance and public utilities. Gained valuable experience while being exposed to several accounting systems and functions.

Community activities
- HealthCare Financial Management Association, Fellow
- Oregon Society of Healthcare Executives
- Albany Public Schools Foundation, Board of Directors
- Albany Public Schools Site Council, Member
- Albany Area Chamber of Commerce, Board of Directors
- City of Albany Water Task Force, Member
- City of Albany Waste Water Task Force, Member
- St. Mary’s Catholic Church, Member
PART 1 - ORGANIZATIONAL CHART

SHS Solely Owned Legal Entities

Samaritan Health Service, Inc.
93-0951989

- Mid-Valley Healthcare, Inc.
  93-0396847
  - Lebanon Community Hospital Foundation, Inc.
    93-1260080
    - Samaritan SeniorCare, Inc.
      93-1245534
    - Samaritan Resources, LLC
      93-1262271

- Samaritan Albany General Hospital
  93-0110095
  - Albany General Hospital Foundation
    93-0712890
    - FirstCare Health Foundation
      93-0932697
    - FirstCare Medical Foundation
      93-0932697

- Good Samaritan Hospital Corvallis
  93-0391573
  - Good Samaritan Hospital Foundation
    23-7252406
    - Paradigm Indemnity Corporation
      73-1668317
    - InterCommunity Health Plans, Inc.
      93-1124326

- Samaritan North Lincoln Hospital
  93-1305493
  - North Lincoln Hospital Foundation
    93-0867677
    - Samaritan Health Plans, Inc.
      93-0860860
    - Samaritan Dialysis Services, LLC
      93-1246368

- Samaritan Pacific Health Services, Inc.
  93-1329784

SCHEDULE Y - INFORMATION CONCERNING ACTIVITIES OF INSURER
MEMBERS OF A HOLDING COMPANY GROUP

Attachment 6: Schedule Y
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Asterisk: Parent is 501(c)(3) not for profit corporation
### SCHEDULE Y
PART 2 - SUMMARY OF INSURER'S TRANSACTIONS WITH ANY AFFILIATES

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Schedule Y Part 2 Explanation: IHP - OR Medicaid Plan - purchased services and quality bonus for dual eligible members
Attachment 7: Provider Participation and Operations Questionnaire

Governance and Organizational Relationships

1a. InterCommunity Health Plans, Inc. dba InterCommunity Health Network Coordinated Care Organization (IHN-CCO) proposes the current Governance structure and Community Advisory Council in Benton, Lincoln, and Linn counties, consistent with ORS 414.625, as described below.

The sole member of IHN-CCO as a corporation is Samaritan Health Services, Inc. The management of the affairs of IHN-CCO is vested in its Board of Directors. The number of Directors of the Corporation is no less than nine and no more than nineteen. The composition meets the standards set forth under ORS 414.625(1)(0) to constitute a Coordinated Care Organization, the majority of the members of the Board of Directors must share in the financial risk of the Corporation, and the Chief Executive Officer of SHS holds a position on the Board. The officers of the Board are the Chairman of the Board, Vice Chairman of the Board, Secretary Treasurer and such other officers of the Board as the Board of Directors need. Each officer of the Board is a member of the Board at the time of election and during the term of office. SHS, as the sole member, is the decision-maker of nominations for membership on the Board. Other decisions are reviewed and approved by the IHN-CCO Board of Directors. Additionally, the Board of Directors has representatives from the following:

- Dental Care Organizations
- Health care providers in active practice
- Community members
- Members of the Community Advisory Council

The Community Advisory Council (CAC) ensures that the integrated healthcare needs of Benton, Lincoln, and Linn County IHN-CCO members and their communities are effectively and efficiently addressed. The Council advises and makes recommendations to the IHN-CCO to aid in strategic planning and implementation to improve the health and healthcare of those enrolled in the Oregon Health Plan (OHP). The relationship between the CAC and the IHN-CCO is intended to be inclusive, collaborative, and of mutual support in the furtherance of optimal healthcare services for the IHN-CCO membership. IHN-CCO will provide regular data reports, timely feedback to, and active participation in, the CAC.

The CAC reports directly to the IHN-CCO Board of Directors. The IHN-CCO Board of Directors and the CAC also hold joint and public meetings twice a year thus assuring transparency and accountability between the groups. The agenda and information are posted publicly in written, audio, and video mediums.

The IHN-CCO CAC consists of 19 representatives:

1. IHN-CCO members, parents, caregivers, or legal guardians of IHN-CCO members must constitute the majority of the membership.
2. Benton, Lincoln, and Linn counties are each represented by four IHN-CCO members; one community member; one county staff person; and the CAC Chair, once elected, is the 19th Representative.
3. A past chair may serve one term as an ex officio (and therefore a non-voting, non-officer) member of the CAC.

4. Counties will maintain a pool of CAC applicants, so they can recommend additional applicants to the IHN-CCO Board of Directors as needed.

5. Representatives will include a minimum of two members of the community, and each county government served by the IHN-CCO, with an effort to strive for diverse membership with an emphasis on those representing populations who experience health disparities.

6. Representatives include persons with severe and persistent mental illness and Members receiving DHS Medicaid-funded LTC services and supports. The current CAC membership includes over 14% of members with severe and persistent mental illness which is reflective of the general IHN-CCO population (16%).

The responsibilities of the CAC include, but are not limited to:

1. Identifying and advocating for preventive care practices to be utilized by the CCO;

2. Overseeing a Community Health Assessment (CHA) and adopting a Community Health Improvement Plan (CHIP) to serve as a strategic population health and healthcare system service plan for the community served by the IHN-CCO;

3. Annually publishing a report on the progress of the Community Health Improvement Plan;

4. Serving as a culturally competent, health literate link between the community and IHN-CCO; and

5. Proactively engaging the community to be involved in the issues.

Clinical Advisory Panel

Ib(1). If a Clinical Advisory Panel is established, describe the role of the Clinical Advisory Panel and its relationship to the CCO governance and organizational structure.

IHN-CCO does have an established Clinical Advisory Panel; the role and relationship to IHN-CCO’s governance and organizational structure is as follows. The Clinical Advisory Panel called, Quality Management Council (QMC), oversees and monitors quality improvement and performance activities of Samaritan Health Plans (SHP) and Intercommunity Health Network Coordinated Care Organization (IHN-CCO). The QMC is comprised of mental, physical, behavioral, and dental health practicing providers or partners, health plan staff, addictions specialists, community representatives, care management personnel, and ad hoc subject matter experts as needed. The QMC relationship to the CCO governance is that QMC has been granted authority by the two Boards of Directors of SHP and IHN-CCO and reports at least quarterly to said Boards. Subcommittees of the QMC are charged with deliberating and facilitating the implementation of tactics that will lead to improved performance. Metrics Advisory Committee, Quality Improvement Committee, Behavioral Health Quality Committee, Dental Health Advisory Committee and report at least twice a year.

The QMC’s primary responsibilities and deliverables are to guide CCO metric requirements, STARS, HEDIS (Health Effectiveness Data Information Set) and CAHPS (Consumer Assessment Health Providers and Systems), HOS (Health Outcomes Survey) measures; create
strategies to improve health outcomes by evaluating gaps in service delivery, identifying high risk barriers for appropriate access to care, and cross sector collaboration and communication with entities in Benton, Lincoln, and Linn counties.

1b(2). If a Clinical Advisory Panel is not established, IHN-CCO should describe how its governance and organizational structure will achieve best clinical practices consistently adopted across the CCO’s entire network of providers and facilities.

Not applicable.

Agreements with Type B Area Agencies on Aging and DHS local offices for APD

1c(1). Describe IHN-CCO’s current status in obtaining MOU(s) or contracts with Type B AAAs or DHS local APD office.

IHN-CCO is currently in contract with Oregon Cascade West Council of Governments (OWCOG), a Type B AAA, for non-emergent transportation. IHN-CCO and OCWCOG are in a value based payment (VBP) capitated contract that emphasizes access to rides, quality of service, and cost controls. IHN-CCO partners with OCWCOG to develop and fund Social Determinant of Health (SDoH) programs that focus on access and health improvements in our region. Past projects have included supporting dually eligible member needs, HUB educational support, bike programs, and access of Spanish speakers to services. IHN-CCO and OCWCOG remain committed to further programs and VBPs that improve the health of our communities.

1c(2). If MOUs or contracts have not been executed, describe IHN-CCO’s efforts to do so and how IHN-CCO will obtain the MOU or contract.

Not applicable.

Agreements with Community Partners Relating to Behavioral Health Services

1d(1). Describe IHN-CCO’s current status in obtaining MOU(s) or contract(s) with LMHAs and CMHPs throughout its proposed Service Area.

IHN-CCO currently has contracts with Local Mental Health Authorities (LMHAs) and Community Mental Health Programs (CMHPs) in Benton, Lincoln, and Linn counties, the service area for which IHN-CCO serves. The contracts are implemented and ongoing and are re-evaluated annually. IHN-CCO does not anticipate any issues renewing these moving forward.

1d(2). If MOUs or contracts have not been executed, describe IHN-CCO’s efforts to do so and how IHN-CCO will obtain the MOU(s) or contract(s).

IHN-CCO has executed contracts in place and does not anticipate any issues renewing these moving forward.
1d(3). Describe how IHN-CCO has established and will maintain relationships with social and support services in the Service Area.

IHN-CCO has developed multiple avenues for maintaining relationships and coordinating efforts with our community partners.

Linn, Benton, Lincoln (LBL) System of Care Governance

IHN-CCO provides administrative support to and participates in the LBL System of Care Governance creating a communication structure between the community Practice Level Committees, the Advisory Committee and the Executive Council. Each of these Committees and Councils have representatives from child serving agencies (Department of Human Services (DHS), school districts, corrections, developmental disabilities, housing organizations, mental and behavioral health service providers, along with valued family and youth participation. The Executive Council sets policy, supports development of System of Care and Community Resources, sets and evaluates outcomes and performance measures, and ensures family and youth participation at all levels.

Behavioral Health Quality Committee (BHQC)

The Behavioral Health Quality Committee was established by Samaritan Health Plans to advise the Quality Management Council and participating providers on community needs and priorities for services in the areas of addictions, mental health and to assist in planning and evaluating the service delivery system. IHN-CCP further evaluates the care coordination, utilization and quality outcomes of the behavioral health services and its integration within the larger health delivery system.

- BHQC is chaired by the Samaritan Health Plans Chief Medical Officer.
- Membership includes: Samaritan Health Plans staff, Behavioral Health Providers, and Community Partners involved in System of Care.

Close working relationships with the Benton, Lincoln and Linn Community Mental Health Programs (CMHP)

- IHN-CCO facilitation of workgroups specific to issues and needs including access to care. Examples include creation of Hospital Hold Work Instruction; helping to provide needed services to youth placed in substitute care; and development of care coordination practices and involvement in Early Learning Hub.
- IHN-CCO elicitation of input and feedback from our three Community Mental Health Programs (CMHPs) on a consistent basis to identify and address process and access to care issues within our community. An example is the recently facilitated work group to develop and clarify the process for hospital holds;
- IHN-CCO facilitation of work groups to coordinate efforts to meet CCO metrics. As an example, if IHN-CCO is accepted as an “Early adopter for the residential transition”, IHN-CCO would convene a work group to align our referral, review and care coordination process with the CMHPs.
Coordination of care for youth newly placed in foster homes or Behavioral Rehabilitative Services (BRS)

- IHN-CCO developed an information referral process with DHS. IHN-CCO is notified when youth are placed in foster and BRS care. Services are coordinated to ensure that the mental health, medical, and dental needs of members are met.
- IHN-CCO is supporting a pilot on integrating services for foster children including care coordination.

IHN-CCO Health Care Guides and Behavioral Services Team help providers identify available services, such as Behavioral Health Outpatient, Durable Medical Equipment (DME) equipment, medical practitioners, and vision services. Referrals are made through the Care Coordination Hub.

Delivery System Transformation Committee

The committee supports a Universal Care Coordination workgroup made up of members inclusive of medical, behavioral, and oral health providers as well as social service and community partners. The workgroup fosters collaborative relationships to provide seamless coordination of care across multiple disciplines.

**Member Engagement and Activation**

2a. Describe the ways in which Members (and their families and support networks, where appropriate) are meaningfully engaged as partners in the care they receive as well as in organizational Quality Improvement activities.

Members and their families are meaningfully engaged as partners throughout their entire experience with IHN-CCO starting with enrollment and selection of their Primary Care Physician (PCP), Dental Care Organization (DCO), or Patient-Centered Primary Care Home (PCPCH). Engagement of members in the design and implementation of their treatment and care plans occurs in a multi-channel, coordinated process. Follow-up and ongoing contact may be continued by the Peer Support Specialist or Health Care Navigator or may be assigned to an RN Care Coordinator, depending upon the member's needs. This ongoing contact will ensure that members are: aware of the benefits available to them, encouraged to participate in programs that will benefit them, seeking appropriate level of care, and receiving appropriate follow-up to care.

2b. Describe how IHN-CCO will ensure a comprehensive communication program to engage and provide all Members, not just those Members accessing services, with appropriate information related to benefits and accessing physical health, Behavioral Health and oral health services.

Encourage Members to be active partners in their health care, understanding to the greatest extent feasible how the approach to activation accounts for the social determinants of health:

The booklet outlined below along with self-service access to ihntogether.org (outlined below)
provide transparency and communication for Members around benefits, social services, social determinants of health needs, and more to improve the health outcomes. IHN-CCO provides new members with a personalized “Here’s how your new health plan works for you” booklet included with their ID card. It covers the basics in an easy-to-follow, handy-size format: Doctor, Prescription Drugs, Dentist, Help, How to Complain, and Important reminders.

Members can choose to engage in self-service using their mobile device or computer to access ihntogether.org. Self-service options include comprehensive search functions examples include providers, service locations, benefits, Special services – Descriptions and instructions are provided to help members understand and take advantage of the additional services provided by IHN-CCO, which include transportation and interpreters, services that are for special needs such as expectant mothers, foster parents, members with diabetes or exceptional needs, support for quitting tobacco products, drugs and alcohol, and services specific for children (hearing, vision, mental health, dental, well child visits), and Community resources – Sections on the website are dedicated to current community-based events that support the social determinants of health, behavioral health resources, including an extensive resource for Adverse Childhood Experiences (ACEs), and contact information and links to local social service and cultural resources.

A full version of the English website is available at es.ihntogether.org and can also be accessed when selecting “En Español” from ihntogether.org.

Engage Members in culturally and linguistically appropriate ways:

IHN-CCO respects the dignity and the diversity of our members and the communities where they live. We want to serve the needs of people of all cultures, languages, races, ethnic backgrounds, abilities, religions, genders, sexual orientation, gender identification, and other special needs of our members. We want everyone to feel welcome and well-served in our plan. We have several healthy living programs and activities for you to use. Our health education programs include selfcare, prevention, and disease self-management. Health literacy is a challenge that is currently being met by the IHN-CCO and its partners through ongoing training for both providers and communication staffs. Member education materials are provided in both English and Spanish.

Educate Members on how to navigate the coordinated care approach and ensure access to advocates including Peer wellness and other Traditional Health Worker (THW) resources:

In the Member Handbooks we outline the availability of THWs: “There may be times when you need help getting the right care. Your primary care team may have people specially trained to do this. These people are called Care Coordinators, Community Health Workers, Peer Wellness Specialists, and Personal Health Navigators.” IHN-CCO also utilize the website ihntogether.org to share information about benefits including THWs and provide information on the THW Workgroup and the Delivery System Transformation Committee and the work they are doing around THWs. IHN-CCO expansive partners also provide knowledge sharing and message spreading of THW services.

Encourage Members to use effective wellness and prevention resources and to make healthy lifestyle choices in a manner that is culturally and linguistically appropriate:
The Regional Health Education Hub (RHEHub) pilot project is transforming the delivery of health education in the tri-county region through the establishment of a centralized, region-wide health education hub that enables community members, social service agencies and healthcare professionals to easily access a range of health education offerings across our region in a single location. The Regional Health Education Hub’s website has been designed using page description diagrams to identify the needs of each page. Responsive visual designs were completed for all components needed to support the site. The website improves communication and engagement and is considered a valuable tool.

Provide plain language narrative that informs patients about what they should expect from the CCO with regard to their rights and responsibilities:

All documents on ihntogether.org for IHN-CCO members meet the sixth-grade reading level standards. All documents not subject to OHA review for reading level use tools to test that their content meets the sixth-grade reading level. If not, a summary document is created to meet the sixth-grade reading level standards. The rights and responsibilities are in the Member Handbook along with posted on ihntogther.org. Below is a snippet from ihntogether.org showcasing plain language. “Your member rights are certain things you can count on from us. There are also member responsibilities that we need from you.”

“What you can expect from us:
As a member of InterCommunity Health Network CCO (IHN-CCO) and Oregon Health Plan (OHP), you have many rights. These include choosing your own provider and making a complaint to us. Here is a full list of what you can count on from IHN-CCO:

- Be treated with respect and dignity, the same as other patients
- Choose your provider
- Get services and support that fit your culture and language needs”

“What we need from you:
Being an IHN-CCO member also means you have responsibilities to us. To help us serve you best, you agree to the following:

- Find a doctor or other provider you can work with and tell them all about your health
- Treat providers and their staff with the same respect you want
- Call your provider at least one day before if you cannot make it to an appointment”

Meanfully engage the CAC to monitor and measure patient engagement and activation:

Since 2012, the Community Advisory Council (CAC) has worked to ensure that the integrated healthcare needs of InterCommunity Health Network CCO (IHN-CCO) members and their communities in Benton, Lincoln, and Linn counties are effectively and efficiently addressed. The CAC is intended to support significant community and member involvement and provide input into the operations and mission of IHN-CCO. CAC members sit on the committees making decisions; the Regional Planning Council and the Delivery System Transformation Committee. IHN-CCO’s strategic plan for CAC involvement includes regular communication and outreach regarding possible decisions and requests for feedback when decisions on spending is being made.
Transforming Models of Care

Patient-Centered Primary Care Homes (PCPCH)

3a(1). Describe Applicant’s PCPCH delivery system.

IHN-CCO has nearly 95% of its beneficiaries in Linn, Benton, and Lincoln Counties enrolled in Patient-Centered Primary Care Homes. 51 total clinics are involved with 9 clinics being 5 Star clinics; 16 clinics being Tier 4; 24 clinics being Tier 3; and 2 clinics being Tier 2. These clinics are spread throughout the tri-county area served by IHN-CCO. The CCO continues to work to get the remaining PCP clinics in its service area to be PCPCH recognized. At the same time, IHN-CCO works with its recognized PCPCHs to attain higher tier levels including 5 Star recognition.

3a(2). Describe how IHN-CCO’s PCPCH delivery system will coordinate with PCPCH Providers and services with Department of Human Services (DHS) Medicaid-funded LTC Providers and services.

IHN-CCO will evaluate our PCPCH delivery system and DHS services in our network. This work will identify the potential areas of coordination. Through this analysis and coordination IHN-CCO’s goal is to maximize services already offered by DHS to leverage the state’s investment in these services. The information shared between AAA (Area Agency on Aging) and APD (Aging and People with Disabilities) offices and PCPCHs could be very beneficial in giving the full health and SDoH picture of IHN-CCO members. Our Network Strategy team communicates regularly with the PCPCH network. Through this provider outreach IHN-CCO can ensure PCPCH are accessing and outreaching to DHS services where appropriate.

3a(3). Describe how IHN-CCO will encourage the use of Federally Qualified Health Centers (FQHC), Rural health clinics, migrant health clinics, school-based health clinics and other safety net providers that qualify as Patient-Centered Primary Care Homes.

IHN-CCO fully supports FQHCs and other clinics by contracting with them as well as investing in their development into 5 Star level PCPCHs. IHN-CCO recognizes that clinics in any setting are crucial to member engagement and health. In addition, IHN-CCO relies on a variety of clinics to create an adequate PCPCH delivery system, especially in our rural areas. IHN-CCO has also heavily invested in PCPCHs through the Delivery System Transformation Committee (DST). The Alternative Payment Methodology (APM) Pilot and Workgroup funded and supported by IHN-CCO incentivized FQHCs, rural health clinics, migrant health clinics, school-based health clinics and other safety net providers to become a PCPCH leading to the high percentage of primary care providers that are PCPCHs in the IHN-CCO delivery network. As an example, the Communities Health Centers of Benton and Linn Counties is a Federally Qualified Health Center and several of their clinics are recognized as 5 Star PCPCHs. With close collaboration with IHN-CCO, they are working to get the other two clinics to the 5 Star level. They are currently at Tier 3. In addition, IHN-CCO has assisted Coastal Health Practitioners and the Samaritan Waldport Clinic in becoming PCPCHs in their roles as Rural Health Clinics.
Other models of patient-centered primary health care

3b(1). If IHN-CCO proposes to use other models of patient-centered primary health care in addition to the use of PCPCH, describe how IHN-CCO will assure Member access to Coordinated Care Services that provides effective wellness and prevention services, facilitates the coordination of care, involves active management and support of individuals with Special Health Care Needs, is consistent with a patient and Family-centered approach to all aspects of care, and has an emphasis on whole-person care in order to address a patient’s physical, oral and Behavioral Health care needs.

IHN-CCO is not proposing to use other models of patient-centered primary health care in addition to the PCPCH model for medical care.

3b(2). Describe how IHN-CCO’s use of this model will achieve the goals of Health System Transformation.

IHN-CCO is not utilizing other models.

Network Adequacy

4a(1). How does Applicant intend to assess the adequacy of its Provider Network? Please include specific data points used to inform the assessment and the methodology for how adequacy will be evaluated.

IHN-CCO’s provider network are analyzed for the geographic distributions of the number of each type of practitioner and provider by maximum travel time/distance requirements on an annual basis to determine the actions necessary to ensure that all health care services to covered persons will be accessible without unreasonable delay. Availability of certain provider types may be limited may be limited within each of the CCO’s service counties and/or within specific communities. Every consideration, including established community patterns of care and network adequacy of provider to member ratios with travel standards, as measured in time or distance is analyzed as it relates to the maximum travel time or time specifications.

4a(2). How does Applicant intend to establish the capacity of its Provider Network? Please include specific data points used to inform the assessment and the methodology for how capacity will be evaluated.

IHN-CCO utilizes the Centers for Medicare and Medicaid Services (CMS) developed standards for time and distance to providers. This breaks out the network into geographic types and specialty categories. IHN-CCO’s counties fall under the Metro, Micro, and Rural geographic type requirements. Specialty service categories cover the range of services required in a Health Plan. Primary care, Psychiatry, surgery, and oncology are examples of the 37 service categories evaluated. Each specialty is given a maximum travel distance and maximum travel time thresholds determined by geographic type. IHN-CCO uses these CMS standards as minimum thresholds to evaluate the provider network. These standards are updated every year and reviewed by IHN-CCO for compliance.
4a(3). How does Applicant intend to remedy deficiencies in the capacity of its Provider Network?

IHN-CCO identifies its network deficiencies through its Quest Analytics Tool and then reaches out to area providers to pursue contracts to fill the gaps. The Contracting team has a very strong understanding of the providers in the network. IHN-CCO works with these providers to bring them into the Medicaid network while staying within cost and service guidelines.

Leadership in IHN-CCO works with our parent company, Samaritan Health Services (SHS), to address serious gaps in provider services in our region. Our mutual mission is to improve the health of our communities. Through this partnership we are able to add facilities and providers where the need demands it. As an example, SHS and IHN-CCO identified addiction treatment as an opportunity to fill a provider network need. SHS has opened a recovery clinic in Lebanon to address this.

IHN-CCO also works with non SHS providers to bring them into the Medicaid network through pilots and education. Pilots have been a mutually beneficial way to develop payment models that support provider costs while meeting IHN-CCO’s requirements. Reimbursement models often need to be flexible to contract with providers not used to doing business with Medicaid. Education on the benefits of VBPs are a great way to bring in new Providers.

4a(4). How does Applicant intend to monitor Member wait times to appointment? Please include specific data points used to monitor and how that data will be collected.

IHN-CCO will monitor member wait times to appointments through a program called Power BI that is available through its affiliation with Samaritan Health Services. Power BI is a Cloud based EPIC (Electronic Health Record) reporting system for all SHS Hospitals and Outpatient Clinics that compiles and shows trends on data from referral patterns and Patient Experience Surveys to how many days members are scheduled out for a 1st appointment to a specialist through the referral process. There are several ways to drill down into the data once exported to get down to specific facility and provider level detail. With this tool IHN-CCO can see the length of days from appointment made to actual appointment date.

4a(5). How will Applicant ensure sufficient availability of general practice oral health Providers and oral health specialists such as endodontists? Please provide details on how the full-time equivalent availability of Providers to serve Applicant’s prospective Members will be measured and periodically validated.

IHN-CCO will work to adapt a successful dental methodology used by a contracted Dental Care Organization (DCO) to all dental providers. To ensure sufficient availability of general practice providers a standard assignment methodology of 3,500 members per provider (depending on the operating hours of the office, number of dental assistants and hygienists on staff, and their current mix of patients to ensure they have enough room in their schedule to accommodate members being assignment), is adopted. Capacity is determined by the number of full time equivalent (FTE) general practice and pediatric providers at each location. For prospective members, this is measured and periodically validated through a process that includes monthly
provider audits and a policy which requires that providers inform the DCO of FTE changes before they occur. Additionally, sufficient availability of specialists is ensured by contracting with at least one endodontist and oral surgeon in each region. If additional specialists are needed, the DCO will coordinate services with non-contracted providers.

4a(6). Describe how Applicant will plan for fluctuations in provider capacity, such as a provider terminating a contract with IHN-CCO, to ensure that Members will not experience delays or barriers to accessing care

Historically IHN-CCO experiences very low fluctuations in its Provider Capacity. The contractually required 90 day without cause termination notice allows for the CCO to work closely with its Medical Management Department to determine referral patterns and for financial analysis to identify other access point for member care. After exhausting all retention possibilities with the terming provider, IHN-CCO actively seeks out other providers who can fill the service cap that may have been caused by a provider termination. IHN-CCO’s Network Strategy and Contracting Department will also pursue single case agreements for instances when the services impacted by either provider terminations or other causes create barriers to accessing care.

**Grievance & Appeals**

Please describe how Applicant intends to utilize information gathered from its Grievance and Appeal system to identify issues related to each of the following areas:

5a. Access to care (wait times, travel distance, and subcontracted activities such as Non-Emergent Medical Transportation).

IHN-CCO receives quarterly updates on the total number of Access to Care grievances to assess the volume of the concerns. In addition, Provider Engagement staff and the Provider Services Manager work with the provider involved in each identified grievance or access issue that has been identified as impeding access to care for members. In addition, each quarter, IHN-CCO meets with its Non-Emergent Transportation provider, Oregon Cascades West Council of Governments, to review the performance of the NEMT provider whose contract has identified pay for performance measures that include access to care related quality measures.

5b. Network adequacy (including sufficient number of specialists, oral health and Behavioral Health Providers).

IHN-CCO receives quarterly updates on the number of Network Adequacy grievances for evaluation and needed action. In most instances, Network Adequacy gaps are already known and are being addressed by the Director of Network Strategy and Contracting and staff. For Behavioral Health Providers, the Network Adequacy need is with the number of qualified providers who can prescribe medications. IHN-CCO’s Network Strategy and Contracting Department contracts statewide and is regularly reviewing claims reports from non-contracted psychiatrists and psychiatric-mental health nurse practitioners (PMHNPs) to identify possible contracted access points for IHN-CCO members. For oral health, IHN-CCO works with its four...
DCOs to handle grievances that relate to Network Adequacy.

5c. Appropriate review of prior authorized services (consistent and appropriate application of Prior Authorization criteria and notification of Adverse Benefit Determinations down to the Subcontractor level).

IHN-CCO’s Medical Management staff follow the established workflow and adhere to department policy when notifying a member of an adverse decision is made. The Medical Management department ensures accurate and timely processing of prior authorization and retroactive requests related to durable medical equipment (DME), medical procedures and services including mental health and substance use disorder services. Medical Management ensures that appropriate clinical information is obtained, documented, and reviewed for all utilization management decisions. This process may include consulting with the requesting provider when appropriate. Grievances are reviewed regularly for possible Adverse Benefit Determinations to make sure they are being applied fairly.

**Coordination, Transition and Care Management**

**Care Coordination**

6a(1). Describe how IHN-CCO will support the flow of information between providers, including DHS Medicaid-funded LTC care Providers, mental health crisis services, and home and Community-based services, covered under the State’s 1915(i) State Plan Amendment (SPA) for Members with severe and persistent mental illness, as well as Medicare Advantage plans serving Fully Dual Eligible Members, in order to avoid duplication of services, medication errors and missed opportunities to provide effective preventive and primary care.

IHN-CCO will support the flow of information between providers by partnering with our Community Mental Health Providers in determining the needs of our members and ensuring appropriate referral to and utilization of services. Currently, our Community Mental Health Programs are responsible for submitting documentation for approval for 1915(i) services although efforts at monitoring our CMHPs and creation of our Care Coordination Hub provide opportunities for increased involvement.

IHN-CCO care management supports interdisciplinary care teams and regularly convenes care team meetings to allow providers and other members of the care team to coordinate member care.

IHN-CCO’s Dual Special Needs Plan members are supported by the Model of Care which includes creating and sharing individualized care plans with the care team. The care plan aligns member and provider goals and interventions. Care Managers communicate directly with all providers that provide care to the member. IHN-CCO will strengthen the Health Information Exchange and ancillary applications to support two-way information sharing for the care team members.
6a(2). Describe how IHN-CCO will work with its providers to develop the partnerships necessary to allow for access to and coordination with social and support services, including crisis management services, and Community prevention and self-management programs.

- IHN-CCO participates in multiple Workgroups and Committees to support coordination with social service agencies. These include our Regional Planning Committee, Universal Care Coordination Workgroup, Youth System of Care Governance Committees, and Early Learning Hub.
- Ad hoc meetings occur as necessary when barriers are identified and there is a need to support mutual members in accessing appropriate and needed services.
- IHN-CCO is involved with our Child Welfare, Primary Care, Mental Health and Dental Providers to develop a plan ensuring that assessments not only occur in a timely manner but are followed by services that meet the health needs of our Child Welfare youth.
- IHN-CCO Universal Care Coordination workgroup has a strategic plan that includes:
  - Shared expectations among workgroup members: Organizational readiness and commitment; transparency and authenticity; shared definition of success; participation at all levels; act as ambassadors for the work; data sharing between organizations.
  - Assessment and intakes: Implement shared platform and application including intake to meet needs of local community;
  - Referral Mechanism: develop shared platform for agency referrals; define outreach expectations; develop mechanism for multi-directional referrals between (e.g. agencies, clinics and community partners)
  - Resource Directory: start building resource lists, with housing as a primary priority; identify strategy for subsequent priority areas; plan for updating directory information.

6a(3). Describe how IHN-CCO will develop a tool for provider use to assist in the culturally and linguistically appropriate education of Members about Care Coordination, and the responsibilities of both Providers and Members in assuring effective communication.

Members with special and complex health needs often lack ability to self-advocate or navigate the health care system and access necessary services. To address this concern, IHN-CCO provided comprehensive training to ensure care coordinators effectively engage and equip members to access physical, dental, and behavioral health services. While education of care coordinators is essential, we recognize a broader need for enhanced awareness and sensitivity training for community providers and staff who serve our members.

IHN-CCO expanded training to ensure members receive culturally responsive, linguistically appropriate and trauma-informed care. Network providers and staff will receive additional cultural awareness and skills training to include, but not limited to Cultural Diversity and Inclusion, Motivational Interviewing, Trauma Informed Care and Mental Health First Aid. With enhanced training, providers will be equipped to engage members in shared decision-making, empowering members to live, work and thrive in their communities.

- The IHN-CCO Health Equity Workgroup strategic plan champions cultural competence and health equity training for providers and other community stakeholders. A robust training plan has been created and is being provided through our region. Best practices for increasing
and retaining health workforce diversity has been implemented and will continue to be evaluated through demographic data collection on health workforce.

- IHN-CCO partner websites provide information and training resources to providers through the online Learning Module System. IHN-CCO uses evidence-based materials and established training and subject matter experts to create and implement cultural awareness training curricula. IHN-CCO developed training modules for Trauma Informed Care, Motivational Interviewing and Mental Health First Aid. An education and outreach campaign is underway in collaboration with IHN-CCO Provider Services and community clinicians. The learning module system will be used to monitor and track feedback and compare training to national standards for evidence-based curricula.

6a(4). Describe how IHN-CCO will work with Providers to implement uniform methods of identifying Members with multiple diagnoses and who are served with multiple healthcare and service systems.

IHN-CCO has engaged network providers in development of population health management (PHM) reporting for Special Needs Plan (SNP) members who are dually enrolled in IHN-CCO as well as our Medicare Advantage Plan. The PHM data aggregation includes claims data and relevant characteristics such as access to health care, food supply, housing, location of residence, age, race, language, gender, as well as disabilities, chronic conditions and comorbidities.

Through PHM data and reports, we can segment subpopulations and stratify our members into high, medium and low risk categories to address care gaps and barriers to ensure resources and interventions are targeted to individuals who will benefit most. Providers have access to reports and data of assigned members.

IHN-CCO has expanded PHM tools and reports to analyze health status of subpopulations to identify the unique needs of our members and prevent consequences of health inequity.

The PHM workgroup provides quarterly updates and presentations to the Quality Management Committee and Behavioral Health Quality Committee. Reports are updated regularly, and any newly available information added. Newly available information may consist of HRA information from new vendor, new SDOH information, participation in Care Coordination or Case Management related programs available.

IHN-CCO focused on our ED Disparity metric identifying those members with complex medical and behavioral health issues. Chart reviews are done to conduct a chain analysis, better understand utilization patterns, and determine who has been and is a part of the individuals Care Team. Interdisciplinary Team Meetings are held to assess needs, evaluate resources and create a plan of care that will meet the needs of the member.

IHN-CCO uses data to determine diagnostic and utilization patterns of members with co-occurring Mental Health and Substance Use Disorders. This data is reviewed regularly in our Behavioral Health Quality Committee and trending reports are used to develop practice models of service delivery and appropriate care pathways.
6a(5). Describe how Applicant will implement an intensive Care Coordination and planning model in collaboration with Member’s PCPCH and other service providers such as Community Developmental Disability Programs and brokerages for Members with developmental disabilities, that effectively coordinates services and supports for the complex needs of these Members.

IHN-CCO developed a Care Management Hub to effectively screen and identify members for services and programs and to coordinate care and track referrals. The IHN-CCO care management team works with the member’s PCPCH and organizes and facilitates interdisciplinary care team meetings (ICTs) with all providers, programs and agencies involved in the member’s care.

IHN-CCO conducts learning collaboratives with our region’s developmental diversity programs to identify the care coordination planning model that will meet our members’ complex needs. The learning collaboratives will include developmental diversity program staff, PCPCH providers, IHN-CCO’s care management staff and other community stakeholders. Through the collaborative meetings a shared understanding and model will be created and implemented to support these members.

6a(6). Describe how IHN-CCO will meet state goals and expectations for coordination of care for Members with severe and persistent mental illness receiving home and Community-based services covered under the State’s 1915(i) SPA and Members receiving DHS Medicaid-funded LTC services, given the exclusion of DHS Medicaid-funded LTC services from Global Budgets.

IHN-CCO and the local Type B AAA agency (Oregon Cascades West Council of Governments Senior and Disability Services {SDS}) has a Memorandum of Understanding to support and improve person-centered care, align care and service delivery and provide the right amount of care, in the right place at the right time. The collaborative work between IHN-CCO and SDS supports the coordination between our two systems to provide quality of care and produce the best health and functional outcomes for members.

6a(7). Describe the evidence-based or innovative strategies IHN-CCO will use within their delivery system network to ensure coordinated care, including the use of Traditional Health Workers, especially for Members with intensive Care Coordination needs, and those experiencing health disparities.

IHN-CCO’s Delivery System Transformation Committee (DST) has four workgroups made up of multiple disciplines including PCPCH, behavioral health, social service, and oral health providers. The workgroups are: Universal Care Coordination, Traditional Health Workers, Health Equity, and Social Determinants of Health. All workgroups have a strategic plan; creating, aligning and strengthening our communities’ care coordination network.

The Traditional Health Worker (THW) strategic plan supports THW as a critical component of the workforce with a unique ability to address the social determinants of health in our region. Objectives within the strategic plan include:
• Expand the number of certified THWs in the region through the development of the “Tri-County Traditional Health Worker Training Hub.” This Hub will include capacity for fidelity monitoring and reporting accountability.
  o Support OHA certified curriculum for Community Health Workers, Doulas, Peer Specialists, and Peer Wellness (when completed)
    i) Specific curriculum type to be delivered by Agencies specializing in that THW type
  o Offer on-going CEU training to maintain credentialing for THW and activities to foster networking and connections among the THW workforce
  o Establish fidelity standards and a method for monitoring & reporting accountability
• Develop an expansion strategy for all types of THWs to include:
  o Identify community agencies interested in having THWs and what type of THW will best meet their service needs
  o Identify the frequency and type of THW training and mentoring program to be offered each year
    i) Identify how many THWs can be trained in each cohort
• Develop an expansion strategy for Clinical Community Health Workers/Health Navigators to include:
  o Develop an additional curriculum and mentoring program that trains THWs beyond the basic training to enhance their skills to work in a health care setting as a “Clinical Community Health Worker/Health Navigator” (Clinical CHW/HN)
  o Identify clinics interested in having a Clinical CHW/HN on-site
  o Formalize a training approach for Clinic Managers and Clinical Care Teams to assist them in understanding how to successfully use Clinical CHW/HNs
  o Identify the frequency of Clinical CHW/HN training and mentoring program to be offered each year
    i) Identify how many Clinical CHW/HNs can be trained in each cohort
• Continue to partner with IHN-CCO to develop an APM (Alternative Payment Methodology) for certified THWs
  o Ongoing work with IHN-CCO to develop, refine, and standardize “Touch Tracking” and payment systems
  o Monitor, and share with IHN-CCO, developments in THW payment models at the state level by member participation (when possible) in the Oregon Community Health Workers Association (ORCHWA) and the Traditional Health Workers Commission
• Develop a THW support network that will provide mentoring, supervision, and support for THWs in the tri-county region
  o Work with the Oregon Community Health Workers Association (ORCHWA) to assist in developing local support network
  o Ensure networking opportunities in Linn, Benton, and Lincoln Counties
• Work with other IHN-CCO Committees to support opportunities for other types of workers in the community to impact SODH (example Community Paramedics, health educators)
  o Support potential pilots
  o Foster conversations and sharing among others doing similar work
  o Encourage coordination with THWs
  o Assess the feasibility/appropriateness of certification for other types of workers
6a(8). Assignment of responsibility and accountability: IHN-CCO must demonstrate that each Member has a Primary Care Provider or primary care team that is responsible for coordination of care and transitions.

IHN-CCO enrollment coordinators offer members PCP options in their enrollment packet. Enrollment coordinators and customer service representatives work directly with members and network PCPCHs to identify the most appropriate primary care provider. Capacity reports of open and closed practices are monitored daily, and practice and provider characteristics are used to match individual members with providers. PCP assignment reports are maintained in the enrollment department in collaboration with IHN-CCO Provider Network and Strategy department. PCPCHs receive a list of active members monthly and have access to member reports through the IHN-CCO secure provider portal.

An Open/Closed List is a list of Contracted Providers that are open or closed to new member assignments. Each PCP has the right to declare their practice open or closed to new patients. This is beneficial to their workflow and the length of time members must wait for future appointments. Each week the Open/Closed Lists is updated and distributed via email and posted on SharePoint.

6a(8)(a). Describe IHN-CCO’s standards that ensure access to care and systems in place to engage Members with appropriate levels of care and services beginning not later than 30 days after Enrollment with the CCO.

IHN-CCO first offers members a choice in selecting a PCP from among open practices. Members receive a PCP selection postcard with instructions in their enrollment packet. If selection is not made within 21 calendar days, enrollment staff will assign a PCP and notify the member of the assignment and issue an insurance ID card.

6a(8)(b). Describe how IHN-CCO will provide access to primary care to conduct culturally and linguistically appropriate health screenings for Members to assess individual care needs or to determine if a higher level of care is needed.

IHN-CCO endorses National Standards for Culturally and Linguistically Appropriate Services (CLAS) for all health service providers. IHN-CCO uses a standardized health risk assessment that meets NCQA standards and is instrumental in identifying member needs and useful in stratifying members to determine whether higher levels of care are needed.

6a(9)(a). Describe IHN-CCO’s plan to address appropriate Transitional Care for Members facing admission or discharge from Hospital, Hospice or other palliative care, home health care, adult foster care, skilled nursing care, residential or outpatient treatment for mental health or substance use disorder, the Oregon State Hospital or other care settings. This includes transitional services and supports for children, adolescents and adults with serious Behavioral Health conditions facing admissions or discharge from residential treatment settings and the state Hospitals.

The IHN-CCO Care Management team provides concurrent review of all inpatient admissions and ensures effective coordination and continuity of care for members discharging from the
hospital or transitioning among care settings, specialty care and primary care providers. The care management team uses reports and data to monitor members for changes in health status and who may be at risk for hospitalization.

Care managers assess, plan, monitor and coordinate care across the continuum of care providers and services. Care management, case management and complex case management are terms used interchangeably. The care management process is developed using clinical guidelines, algorithms, or other evidence-based materials. Evidence-based clinical guidelines are used to support the management of chronic conditions and coordination with member and providers through transitions of care. Care managers review data from multiple sources and assign risk level when developing the plan of care.

Members with identified special and complex health needs are provided Intensive Care Coordination (ICC). ICC is a care coordination service or process that coordinates multiple services and supports for members who have complex medical, dental and/or behavioral health needs that may include multiple chronic conditions and/or severe and persistent behavioral health challenges. ICC facilitates communication between member, providers and community partners through interdisciplinary care teams to address health disparities; assist in accessing appropriate preventative, remedial and supportive care and services; and manage transitions and gaps in care to improve outcomes.

To address appropriate transitional care for members, IHN-CCO will:
- Continue to grow our IHN-CCO provider panel to ensure people have access to the appropriate community-based care
- Utilize the IHN-CCO Care Hub and BH and RN Care Managers to provide proactive transitional care
  - BH and RN Care Managers will ensure appropriate discharge planning is occurring as part of the utilization review process and will refer complex case to the IHN-CCO Care Hub for more intensive transitional care planning needs, including but not limited to convening ICT meetings and resource referral.
  - IHN-CCO will utilize the Collective Plan System ED alert system to proactively identify individuals that may need care coordination and transition planning.
- Volunteer again to be an Early Adopter shifting adult residential benefits to the CCO’s
  - In 2016, IHN-CCO served as one of the three CCO pilot programs supporting referrals to and discharge from Adult Residential Programs. We developed processes and policies cooperatively with our Community Mental Health Providers and developed a system to monitor access.

Being an Early Adopter enables us to facilitate and ensure that the necessary care coordination and transition planning is occurring between physical health, BH, dental and placement providers for member transitioning in and out of the Oregon State Hospital and residential treatment settings.

One of the TQS projects IHN-CCO has designed is to help address youth who need mental health and other services. These services are directly related to transitions in care for these members.
Children and adolescents who need services from multiple systems and their families often experience a lack of coordination of services and resources, multiple sometimes conflicting expectations, and inefficient use of resources. The establishment of a system of care governance structure from the child and family team level through a regional executive council will increase the efficiency in the system and improved outcomes for children and their families. This strategy from 2018 is being modified. A Regional System of Care Executive Council has been established and is meeting on a regular basis. The Council focuses on all children, youth and their families in the region; not just those involved in IHN-CCO or the Wraparound process. It particularly focuses on system issues and gaps found in at least 2 of the 3 counties and involve multiple systems. The agenda is built through issues identified through the local System of Care structures and recommended by the Regional SOC Advisory Committee. The Regional Executive Council works to resolve system gaps and barriers that require leadership solutions and investments.

A key aspect of system-of-care work is to identify and solve issues and gaps as close as possible to the children, youth and families. The process needs to be fully informed by children, youth and families, then vetted and solved as soon as possible. The Executive Council has developed a communication process so that each county can develop their own barrier submission process and problem solve what they can within their own SOC governance structure. The communication plan includes the submission of a quarterly report that summarizes county level strengths, problems solved, and issues that remain unsolved that need to be escalated to the regional level.

The quarterly reports will go to the Regional Advisory Committee for analysis and prioritization for the Executive Council. The Council will then act and report back to the Advisory Committee and local systems of care. The Executive Council can escalate barriers and gaps to the state level.

Another area IHN-CCO is working on to support transitions in care and care coordination is the PCPCH program. To further support PCPCH infrastructure to be high functioning 5 tier PCPCH’s with integrated whole-person care through a health equity lens, IHN-CCO is launching a project to pursue implementing a robust risk stratification methodology that includes social determinants of health in addition to predictive analytics based on conditions. IHN-CCO will begin researching the best solution in Summer 2019 with the goal to have implemented by end of Winter 2019.

Upon implementation of the product or solution, IHN-CCO will use the risk stratification methodology to determine PMPM CMF (case management fee) payments to be reimbursed to PCPCH’s. Payments will be reimbursed either in a monthly payment specified as PCPCH payments or as a PMPM enhancement to HCP LAN category 4B PMPM payment in place with PCPCH’s where applicable.

For foster children IHN-CCO has developed another project to optimize wellbeing during and after the transition into care. The mission of the Integrated Foster Child Wellbeing Program (IFCW): To optimize the wellbeing of all children and youth involved with child welfare by facilitating and coordinating the care in the areas of medical, mental health, dental, and developmental/education from birth to transition to adulthood.
The goals of the Integrated Foster Child Wellbeing Program are: 1. Develop a steering committee that facilitates and coordinates among the three counties with the Patient-Centered Primary Care Home (PCPCH) as the center of the coordination model; 2. ensure assessments for foster children are not fragmented, redundant, or untimely; and 3. improve the CCO Incentive Metric Assessments for Children in DHS Custody.

6a(9)(b). Describe IHN-CCO’s plan to coordinate and communicate with Type B AAA or APD to promote and monitor improved transitions of care for Members receiving DHS Medicaid-funded LTC services and supports, so that these Members receive comprehensive Transitional Care.

Medical Management staff collaborate with our Long-Term Services and Supports (LTSS) partner through our Memorandum of Understanding (MOU). Our mutual goal is to improve person-centered care, align care and service delivery, and provide the right amount of care in the right place at the right time for members across the LTSS system. Health Care Guides and Behavioral Health Care Managers participate in delivering activities within the MOU which include:

Interdisciplinary care team (ICT) meetings: IHN-CCO and LTSS have established interdisciplinary care teams, consisting of Health Care Guides and Behavioral Health Care Managers, PCP, LTSS representatives, as well as other agencies/services providers working with the members. The interdisciplinary care teams will coordinate care and develop individualized care plans for high-needs members.

Coordination of transitional care practices: Medical management and LTSS staff collaboratively coordinate transitions for members experiencing a transition in their care setting or change in condition. Care coordination practices integrate cross-system education, timely information sharing, and coordination to avoid cross-system duplication of effort and to ensure effective deployment of interdisciplinary nursing and psycho-social resources when a member has a transition of care or change in condition.

Increase member engagement in the care conference process: The LTSS case manager and Health Care Guides collaborate on how best to obtain member input and identify areas of need or services to be included in the member individualized care plan. The interdisciplinary care team promotes self-management of chronic conditions and participation in health promotion and/or prevention activities.

6a(9)(c). Describe IHN-CCO’s plan to develop an effective mechanism to track Member transitions from one care setting to another, including engagement of the Member and Family Members in care management and treatment planning.

Transitions that involved hospital to home, hospital to SNF, and SNF to home, home health or ICF are done through the authorization and concurrent review process. Systems are in place to collect data on those members admitted to the hospital and SNF placement. ICF transitions are tracked using the excel spreadsheet of share by our LTSS partner.
6a(10)(a). Describe IHN-CCO’s standards and procedures that ensure the development of individualized care plans, including any priorities that will be followed in establishing such plans for those with intensive Care Coordination needs, including Members with severe and persistent mental illness receiving home and Community-based services covered under the State’s 1915(i) SPA.

IHN-CCO ensures that members identified with chronic and/or complex medical and or behavioral health conditions have an individualized care plan. Care plans are developed with member input during the health risk assessment and screening process and reflect the unique needs of the member and their goals. The Individualized Care Plan policy is reviewed every two years, or as needed and follows the National Committee for Quality Assurance (NCQA) Population Health Management Standards. Care plans are reviewed by the interdisciplinary care team and updated by the care manager with information gathered through assessment and screening and care team meetings. They include member and caregiver prioritized goals and desired outcomes, preferences, timeframe for reevaluation of goals, resources available to be utilized including appropriate level of care, planning for continuity of care and collaborative approaches to be used to support member. Barriers are also addressed and may include language or literacy level, access to reliable transportation or understanding of a condition. Interdisciplinary care team meetings assist in creating the individualized care plan to support members with intensive care coordination needs.

IHN-CCO and LTSS have established interdisciplinary care teams, consisting of Health Care Guides and Behavioral Health Care Managers, PCPs, LTSS representatives, as well as other agencies/services providers working with the members. The interdisciplinary care teams will coordinate care and develop individualized care plans for high-needs members.

Complex case management services provided through AxisPoint Health are evaluated annually and as necessary through audits of individual records and activity and outcome reports. In addition, quarterly meetings are held with AxisPoint Health to review operations and member activity and to address issues as they arise.

At least annually, IHN-CCO will evaluate the Complex Case Management program. The purpose of the evaluation is to determine the effectiveness of the program, identify areas of improvement, and outline interventions for the following year. The evaluation process includes, but is not limited to the following:

- Number of Initial HRA eligible enrollees with Initial HRA performed. All enrollees must have an Initial HRA within 90 days after the effective date of enrollment.
- Population Stratification. All enrollees must be stratified by risk range (i.e. low, medium, high)
- Individualized Care Plan (ICP) development. Number of ICPs developed for enrollees per risk category. ICP development should start from high risk category members, then medium risk and finally low risk.
- Interdisciplinary Care Team (ICT) Interventions. Portion of enrollees with whom their ICP has been shared as well as the portion of enrollees with their ICP shared with their PCP.
• Number of Reassessment HRA eligible enrollees compliant with Reassessment HRA Performed. All Reassessment eligible enrollees must be assessed within 365 days after the previous HRA was performed. It also includes “first time” assessments occurring within 365 days of initial enrollment on individuals continuously enrolled up to 365 days from enrollment date without having received an initial HRA.

6a(10)(b). Describe IHN-CCO’s universal screening process that assesses individuals for critical risk factors that trigger intensive Care Coordination for high needs Members; including those receiving DHS Medicaid-funded LTC services.

IHN-CCO Medical Management has developed a Care Hub for central intake, screening and triage. The care hub provides culturally responsive care coordination and linkage for members identified through registries, requirements and referrals. The hub is the foundation for our care management program; providing a centralized team to screen, triage and refer members for various internal and external resources and programs.

A standardized screening and assessment tool are used for all members reviewed for care management. Information is gathered on member’s current medical, behavioral and oral health conditions, strengths, barriers, gaps in care and social determinants of health challenges including food security, transportation and housing. Once the screening and assessment are completed a care manager will identify if the member has triggered for intensive care coordination. If yes, they will be assigned to a care manager (RN or LCSW) or health care guide, depending on the acuity and need.

6a(10)(c). Describe how IHN-CCO will factor in relevant Referral, risk assessment and screening information from local Type B AAA and APD offices and DHS Medicaid-funded LTC Providers; and how they will communicate and coordinate with Type B AAA and APD offices.

IHN-CCO care management receive a monthly file from the local Type B AAA (SDS) office that includes functional assessment status, service priority level, risk factors and LTC providers. This information is ingested into the standardized screening and assessment tool and assists in determining care pathway for member. IHN-CCO and SDS convene interdisciplinary care team meetings for high needs members. The meetings include LTC providers, IHN-CCO and SDS care management staff and other provider and community partners supporting the member. Communication may also happen independent of the ICT meetings through various channels.

6a(10)(d). Describe how IHN-CCO will reassess high-needs Members at least semi-annually or when significant changes in status occur to determine whether their care plans are effectively meeting their needs in a person-centered, person-directed manner.

IHN-CCO care management has created a report to identify, monitor, track and assess members with special and complex health needs. Care management staff will use this cohort report to identify members who have experienced a significant change in status to reassess and evaluate new care plan goals and interventions.
6a(10)(e). Describe how individualized care plans will be jointly shared and coordinated with relevant staff from Type B AAA and APD with and DHS Medicaid-funded LTC Providers and Medicare Advantage plans serving Fully Dual Eligible Members.

All Dual Special Needs Plan (D-SNP) members receive an individualized care plan created by a care manager and the member to properly reflect the member’s goals, strengths, preferences and barriers. The care plan is created in party by the interdisciplinary care team which may include care managers from SDS as well as the LTC provider. Through our Memorandum of Understanding interdisciplinary care team meetings are convened regularly to create, review and revise care plans.

6a(11). Describe IHN-CCO’s plan for coordinating care for Member oral health needs, prevention and wellness as well as facilitating appropriate Referrals to oral health services. IHN-CCO believes that the more access points available, the easier it will be for our members to utilize their dental benefits. The CCO offers the first access point with an immediate dental plan assignment at the time of processing the 834 files that are received from the state. This allows instant access to dental benefits and a provider for each of our members.

In addition to expanding access points, the CCO will continue to monitor aspects that define access for our members such as reported capacity, member grievances, DCO changes, travel time to appointment, satisfaction surveys, and many other factors that play into effective and timely access.

IHN-CCO has also integrated two oral health screening questions in our Health Risk Assessment. This assessment is currently rolled out with our SNP population, which encompasses some, but not all, of our IHN-CCO population. We hope to expand this Health Risk Assessment to include all IHN-CCO members and determine their coordination needs and how to best address them in a holistic manner. This will identify oral health needs in a timely manner and initiate the need for care coordination efforts. The current coordination effort will continue with the integrated efforts of the CCO Health Care Guides and the Dental Program Staff communicating, advocating, and referring members to the appropriate dental plan. By working together and communicating with the dental plans we meet the members needs in a timely manner.

IHN-CCO will continue to identify populations that face many barriers to receiving oral health care. Monthly, IHN-CCO identifies special populations within the service region and sends each population list to the appropriate DCO for outreach efforts. The DCOs actively reach out to these populations to assist them in accessing preventive dental care. Such population include: foster children, members with diabetes, pregnant members, members who have not received a dental service in the past 24 months, and members with SPMI.

6a(12). Describe Applicant’s plan for coordinating Referrals from oral health to physical health or Behavioral Health care.

IHN-CCO plans to continue a contractual relationship with Dental Care Organizations (DCO) to administer the Oregon Health Plan dental benefits. Each DCO has a member services/case
management team to target individual member needs. The DCO and CCO discuss member medical or behavioral health needs that present during a dental visit to the CCO dental program staff. The dental program staff refer these needs to the IHN-CCO care management team for the appropriate care coordination efforts. This workflow is made even more effective with the integrated efforts of HIE. By integrating HIE the case management staff can view medical visits, dental claims, behavioral health diagnosis, and current medications being taken. This allows a wraparound view of the members overall physical wellbeing to better understand the most appropriate outreach method and how to address each member based on individual need.

Each DCO is also interested in providing a resource of a closed loop referral for external providers (such as providers from the medical and behavioral health field). Soon, the DCO’s would like to partner with Unite Us and integrate the referral tool into their case managers workflow and allow this access point of provider-to-provider referrals to grow.

**Care Integration**

**Oral Health**

6b(1)(a). Describe IHN-CCO’s plan for ensuring delivery of oral health services is coordinated among systems of physical, oral, and Behavioral Health care.

IHN-CCO plans to continue a contractual relationship with Dental Care Organizations (DCO) to administer the Oregon Health Plan dental benefits. Each DCO has a member services/case management team to target individual member needs. The DCO and CCO discuss member medical or behavioral health needs that present during a dental visit to the CCO dental program staff. The dental program staff route these needs to the internal Medical Management department for the appropriate care coordination efforts. This workflow is made even more effective with the integrated efforts of Health Information Exchange (HIE). By integrating HIE the case management staff are able to view medical visits, dental claims, behavioral health diagnosis, and current medications being taken. This allows a wraparound view of the members overall physical wellbeing to better understand the most appropriate outreach method and how to address each member based on individual need.

IHN-CCO will continue to conduct oral health education to medical and behavioral health providers regarding the importance of oral health and its link to overall wellbeing. The education will also include systemic and operational efforts being conducted to coordinate care for each member. In addition to education materials, some DCOs will continue or expand partnerships with local providers to implement an Expanded Practice Dental Hygienist to conduct dental services within a medical practice setting. Each DCO is also interested in providing a resource of a closed loop referral for external providers. Soon, the DCO’s would like to partner with Unite Us and integrate the referral tool into their case managers workflow and allow this access point of referrals to grow.

IHN-CCO has also integrated two oral health screening questions in the Health Risk Assessment. This assessment is currently rolled out with the special needs population (SNP), which encompasses some, but not all, of the IHN-CCO population. The plan is to expand this Health
Risk Assessment to include all IHN-CCO members and determine their coordination needs and how to best address them in a holistic manner.

6b(1)(b). Describe Applicant’s plan for ensuring that preventive oral health services are easily accessible by Members to reduce the need for urgent or emergency oral health services.

IHN-CCO recognizes that the further upstream the practices are it can greatly affect a member’s future outcome of oral disease. IHN-CCO will continue to target the children population and encourage programs that target school aged population. The local School Based Sealant Programs target local schools with dental screenings, referrals, fluoride varnish, and preventive dental sealants. Through efforts of innovative outreach methods and organizational partnership expansion there has been an increase of the ages served and expanded the amount of schools seen within a school year.

IHN-CCO will also continue to implement and target the pregnant population. IHN-CCO believes that by educating and treating mothers it instills the tools, knowledge, and resources needed to start the baby off with good oral hygiene practices passed on by the mother. IHN-CCO will continue to education medical providers to expand the use of expanded practice dental hygienists as well as training medical staff to conduct an oral health assessment and apply fluoride varnish.

IHN-CCO believes that the more access points available, the easier it will be for IHN-CCO members to utilize their dental benefits. IHN-CCO offers the first access point with an immediate dental plan assignment at the time of processing the 834 files that are received from the state. This allows instant access to dental benefits and a provider for members. In addition to expanding access points, the CCO will continue to monitor aspects that define access for members such as reported capacity, member grievances, DCO changes, travel time to appointment, satisfaction surveys, and many other factors that play into effective and timely access.

**Hospital and Specialty Services**

Describe how IHN-CCO’s agreements with its Hospital and specialty care Providers will address:

6b(2)(a). Coordination with a Member’s Patient-Centered Primary Care Home or Primary Care Provider.

Many Patient-Centered Primary Care Homes (PCPCHs) have agreements with hospitals and specialty providers. Through these agreements, hospitals and specialty care providers are directed to coordinate with the PCPCH for follow up and ongoing care of members. Additionally, IHN-CCO will evaluate our network care delivery system. This work will identify the potential areas in which contracting agreements can align efforts and strengthen care coordination between hospitals, specialists and PCPCHs. This analysis will support IHN’s goal to maximize care coordination services offered through PCPCHs and leverage payment models to improve care coordination for our members.
6b(2)(b). Processes for PCPCH or Primary Care Provider to refer for Hospital admission or specialty services and coordination of care.

IHN-CCO convenes a Universal Care Coordination Committee that is organizing and standardizing care coordination processes across the continuum of care for all services and supports. Through enhanced care pathways and technology solutions, PCPCH or primary care providers can seamlessly refer to hospitals or specialty services and coordinate care through a variety of means such as electronic health records (EHR), Collective Plan and the regional health information exchange.

6b(2)(c). Performance expectations for communication and medical records sharing for Hospital and specialty treatments, at the time of Hospital admission or discharge, for after-hospital follow up appointments.

IHN-CCO’s HIT Strategic Plan includes advancing EHR data collection, and many other data sources, such as Collective Plan and Unite Us, that will allow us to identify patients with medical complexity and communicate and collaborate with clinical, non-clinical and public health partners. Collecting more robust data will allow for aggregation, coordination, communication and engagement with the VBP contracted Hospital and PCPCH by being able to stratify our members across several dimensions.

In year one, 2020 IHN-CCO will begin developing an HCP LAN category 3A VBP model with Samaritan Health Services for inpatient hospital performance. A pay for performance (P4P) agreement will be implemented beginning 1/1/2021 to evaluate the quality outcomes, patient satisfaction and costs across the 5 most utilized hospitals in the IHN-CCO service area. IHN-CCO will reimburse the Samaritan Health Systems an upside quality pool incentive when at least 50% of agreed upon quality metrics are achieved. Samaritan Health Systems can retrieve 100% of the quality pool amount available when 80% of the quality metrics are achieved. Samaritan Health Services can also share in a portion of any savings generated when cost targets for hospital inpatient services are met.

IHN-CCO will monitor selected and agreed upon inpatient hospital metrics with Samaritan Health Services from the following oversight committees/councils:

1. Metrics that are approved by the Oregon Hospital Performance Metrics Advisory Committee as approved by CMS.
2. HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems).
3. Centers for Medicare & Medicaid Services (CMS) Measure List
4. Joint Commission National Hospital Quality Measures List

In year 2022 IHN-CCO will expand the HCP-Lan category 3B VBP model with Samaritan Health Services for inpatient hospital quality and cost performance to include risk on hospital outpatient services and ED services.
6b(2)(d). A plan for achieving successful transitions of care for Members, with the PCPCH or Primary Care Provider and the Member in central treatment planning roles.

IHN-CCO recognizes the important role of engaging members in their care especially during transitions. IHN-CCO care managers work directly with members and their providers to engage in warm handoff activities. Care managers oversee care coordination and transition planning for members undergoing a transition between care settings, services or to home. IHN-CCO care managers coordinate services and supports and hold interdisciplinary care team meetings with the member and their family to ensure continuity of the member’s care. For members who may suffer serious detriment to their mental health, IHN-CCO’s Behavioral Health Care Manager will work with IHN-CCO’s Intensive Care Coordinator (ICC) to ensure a collaborative and holistic approach to coordinating and transitioning all care for the member.

The care coordinator will continue to follow the transition and work closely with the member to support and monitor the transition between care settings, service providers or to home. The IHN-CCO care management team will continue to meet and evaluate progress and address needs until the transition has been complete and the treatment or plan goals are established.

DHS Medicaid-funded Long Term Care Services

6c(1)(a). Effectively provide health services to Members receiving DHS Medicaid-funded LTC services whether served in their own home, Community-based care or Nursing Facility and coordinate with the DHS Medicaid-funded LTC delivery system in IHN-CCOs Service Area, including the role of Type B AAA or the APD office

All members are assigned a PCP at time of enrollment. PCP is the primary provider to our member and provide much of the care coordination and referral for services. PCPCH care coordinators work directly with the plan to assist members with attaining needed services and care. Home health is available for those members that are home bound and assist with coordination needs with the provider, plan and member. Those members residing in a nursing homes have access to providers within the facility as well as their PCP office. PCPCH office provide care coordination services in conjunction with the IHN-CCO. Collaboration between provider offices and the plan is anticipated and expected.

6c(1)(b). Use best practices applicable to individuals in DHS Medicaid-funded LTC settings including best practices related to Care Coordination and transitions of care

Medical management and LTSS staff collaboratively coordinate transitions for members experiencing a transition in their care setting or change in condition. Care coordination practices integrate cross-system education, timely information sharing, and coordination to avoid cross-system duplication of effort and to ensure effective deployment of interdisciplinary nursing and psycho-social resources when a member has a transition of care or change in condition

Case Management Process

The core functions of the case management process are assessment, planning, monitoring and
care coordination. Case management and complex case management are terms used interchangeably. The case management process is developed using clinical guidelines, algorithms, or other evidence-based materials. Evidence-based clinical guidelines are used to support the management of chronic conditions and coordination with member and providers through transitions of care. Case managers review data from multiple sources and assign risk level when developing the plan of care.

Intensive Care Coordination

A process to coordinate multiple services and supports available to members who have complex medical, dental and/or behavioral health needs that may include multiple chronic conditions and/or severe and persistent behavioral health challenges. Intensive care coordination facilitates communication between member, providers and community partners through interdisciplinary care teams to address health disparities, assist in accessing appropriate preventative, remedial and supportive care and services, and manage transitions and gaps in care to improve outcomes.

Interdisciplinary care team (ICT) meetings

IHN-CCO and LTSS have established interdisciplinary care teams, consisting of Health Care Guides and Behavioral Health Care Managers, PCP, LTSS representatives, as well as other agencies/services providers working with the members. The interdisciplinary care teams will coordinate care and develop individualized care plans for high-needs members.

6c(2). Describe how Applicant will use or participate in any of the following models for better coordinating care between the health and DHS Medicaid-funded LTC systems, or describe any alternative models for coordination of care:

6c(2)(a). Co-Location: co-location of staff such as Type B AAA and APD case managers in healthcare settings or co-locating Behavioral Health specialists in health or other care settings where Members live or spend time.

6c(2)(b). Team approaches: Care Coordination positions jointly funded by the DHS Medicaid-funded LTC and health systems, or team approaches such as a multi-disciplinary care team including DHS Medicaid-funded LTC representation.

6c(2)(c). Services in Congregate Settings: DHS Medicaid-funded LTC and health services provided in congregate settings, which can be limited to one type of service, such as “in home” Personal Care Services provided in an apartment complex, or can be a comprehensive model, such as the Program of All-Inclusive Care for the Elderly (PACE).

6c(2)(d). Clinician/Home-Based Programs: increased use of Nurse Practitioners, Physician Assistants, or Registered Nurses who perform Assessments, plan treatments, and provide interventions to the person in their home, Community-based or Nursing Facility setting.

IHN-CCO is responding to 6c(2)(a) and 6c(2)(b). IHN-CCO fosters a team approach to coordinating care between the health and LTC systems. Interdisciplinary care teams are created
for members with complex health needs and those needing coordinated care across multiple systems. ICTs may consist of Health Care Guides and Behavioral Health Care Managers, PCP, LTSS representatives, as well as other agencies/services providers working with the members. The interdisciplinary care teams will coordinate care and develop individualized care plans for high-needs members.

IHN-CCO will also evaluate options to co-house LTC care managers within the hospital setting. LTC care managers can provide expertise on services available when members are discharged to a lower level of care. They can complete the functional assessment required to determine service eligibility as well as support the discharge planners in creating a safe discharge. LTC care managers have an established relationship with IHN-CCO care management staff and can navigate benefit and service needs while member is preparing to discharge.

Utilization Management

6d(1). How will the authorization process differ for Acute and ambulatory levels of care?

Utilization management is integrated within the care management program. The medical director and medical management director oversee the program operations. Utilization review is conducted according to department policies, procedures and clinical criteria. Medical necessity is determined, and the decision time frame and notifications must adhere to policies and plan documents. These policies and plan documents serve as a resource for the decision-making of utilization management staff and clinical reviewers. Utilization policies and plan documents assist the care manager, physicians and other providers in planning and managing care with efficiency and high-quality standards.

Decisions regarding what services should require prior authorization are made to target services that are high risk (of complications or side effects), frequently overused (by providers), and high cost (to members and the health plan). Services that are low risk, low cost, and not overused by providers are generally not targeted to require prior authorization.

The availability of a nationally recognized evidence-based guideline (from organizations like MCG Health or the Center for Medicare and Medicaid Services) that can be used to review a service for medical necessity / medical appropriateness also contributes to decisions about what services may require prior authorization (we need criteria to review against).

For the IHN-CCO line of business, information contained within the Oregon Prioritized list including Guideline Notes published by the Oregon Health Authority (OHA-HERC) also contributes to decisions about what services should require prior authorization.

Prior authorization lists are managed by the Plan Benefits and Contract Administration (PBCA) department. They are updated annually with input from multiple departments in the health plan, including medical management, and require external regulatory review.

The Prior Authorization list includes services and procedures requiring review prior to the member receiving care. The list is plan-specific and published on the Samaritan Health Plans
website and in the member benefit materials. Medical Management policies, procedures and criteria outline utilization requirements for most procedures, diagnostic treatments, provider specialties, and code or item-specific detailed requirements prior to authorizing. Authorization request determinations are made using evidence-based, established local, state or nationally accepted criteria adhering to regulatory and plan-specific requirements.

Prospective, concurrent and retrospective reviews are performed to provide a basis for decision-making. This plan assures that UM decisions are made by qualified, licensed healthcare professionals who have the knowledge and skills to assess clinical information and to evaluate working diagnoses and proposed treatment plans. Medical Management is supported by board certified UM physician reviewers and behavioral health physicians and doctoral-level practitioners who hold a current license to practice without restrictions. These licensed physicians oversee UM decisions to ensure consistent and appropriate medical-necessity determinations. Inter-rater reliability (IRR) reviews are conducted to ensure consistent application of the utilization criteria.

The Medical Management department at Samaritan Health Plans utilizes the Cognizant software program, Facets, in conjunction with the Hyland software program, OnBase. Health plan activities related to members and providers, including authorizations, claims, customer services, appeals, quality and case management, are documented in the Facets system. Clinical and supporting documentation submitted to the Health Plan is electronically stored within the OnBase system for viewing.

Review Types
- Pre-Service Review – Review of services / treatments prior to the service date is considered pre-service or Prior Authorization. Prior Authorization requests account for the highest volume of requests reviewed in the department. These include planned inpatient hospitalizations or procedures, outpatient services, and home health items, services and/or equipment.
- Concurrent Review – A review to determine extending a previously approved, ongoing course of treatment or services. Concurrent reviews are typically associated with inpatient care, skilled nursing facility, residential behavioral healthcare, intensive outpatient behavioral healthcare and ongoing ambulatory care.
- Post-Service Review – The process of reviewing services or treatment after the date of service occurs is considered post-service review. Post-service review of services that require prior authorization is limited by exception reason. If an exception is granted the same criteria and plan benefits and guidelines are applied to the request or case as would be applied for pre-service requests.

6d(2). Describe the methodology and criteria for identifying over- and under-utilization of services

Over- and under-utilization is addressed in many ways by the health plan. The plan has projects designed to address over-utilization, such as decreasing readmission to psychiatric inpatient facilities, and to address under-utilization, such as appropriate services for members with major depressive disorder and substance use disorder, and under-utilization such as our maternity case management program.
Decreasing readmissions:

1. SPMI Registry has been completed and findings were reviewed at Behavioral Health Quality Committee (BHQC). The majority of individuals discharged received follow-up services in a timely manner. There were no specific concerns raised for services provided. Because of this, IHN-CCO Behavioral Health Quality Committee decided to modify the focus of response to individuals who have been readmitted to inpatient psychiatric within a six-month period.

2. The goal is to conduct root cause analysis through interdisciplinary chart review of each individual readmitted to determine factors that influence readmits and identify appropriate pathways to improve care and prevent readmissions. We have expanded our review of members from Good Samaritan Regional Medical Center to include readmits to all psychiatric facilities.

Appropriate Services for Members Diagnosed with Major Depressive Disorder and Substance Use Disorder:

1. The original registry had 8013 members identified with SPMI condition. Upon reviewing the data, Behavioral Health Quality Committee (BHQC) decided to narrow the focus to members with Major Depressive Disorder, which is the most prevalent condition. At the same time, the query was broadened to focus on Mental Health Diagnosis with Co-Occurring Substance Use Disorders (SUD) and other Co-Occurring Mental Health diagnosis.

2. The goal is to identify current utilization patterns, appropriate responses and whether current network is adequate to provide services meeting best practice standards of care for members with Major Depressive Disorder; develop appropriate and standardized care pathways for these members; identify those individuals who have Co-Occurring Substance Use Disorders and implement best practice standard of care for these members.

Maternity Case Management:

1. The purpose of the Maternal Case Management Plus Program is to expand upon the current delivery system to achieve the mutual goal of IHN-CCO, the non-clinical providers, public health providers, and the clinical providers in the community to help IHN-CCO women have healthier pregnancies, healthier outcomes, and to raise healthy children.

2. County public health partners will work collaboratively and connect women and their families to Obstetricians, Behavioral Health providers, Traditional Health Workers, Dental providers, PCPCH’s, and to other health and parenting resources in Public Health and in the community, such as prenatal care and parenting classes. All providers shall visit pregnant women and new mothers where convenient for the member.

3. Nurse Family Partnership (NFP) services will be delivered using evidence-based home-visiting services per the National Service Office of Nurse Family Partnerships. This model includes building community resources and community service partners to support social determinants of health and coordination with clinical providers, traditional health workers and other community-based organizations.
4. Partners included in coordinating Maternal Case Management Plus Program care will use HIT systems supported by IHNCCO to collect data, including at a minimum social determinants of health information, ACE’s scores, Health Risk Assessments to manage appropriate care plans and to ensure communication and information sharing with the appropriate non-clinical, public health and clinical providers included in the care plan.

5. IHN-CCO will monitor the following performance metrics in year 1:
   - Completion of Health Risk Assessments (Family Connects)
   - Patient Satisfaction Survey Results
   - Services and outreach provided to other family members in the home
   - The percentage of pregnant women enrolled in the program
   - The number of case management services provided
   - Referrals for oral health
   - Referrals for behavioral health
   - Referrals to PCPCH
   - Alcohol and Drug Screenings performed
   - Completion of ACE’s questionnaires

6. IHN-CCO will monitor the following performance metrics in PCPCH P4P contracts, dental care organization P4P contracts, and traditional health worker contracts:
   - PCPCH: Timeliness to Prenatal Care and Postpartum Care, Childhood Immunizations, Developmental Screenings in the first 36 months of life.
   - Dental Care Organizations: Increase the percent of members who have a dental visit during pregnancy.
   - Traditional Health Workers: Childhood Immunizations, Developmental Screenings in the first 36 months of life, Referrals to Maternal Case Management Plus Program.

Accountability

7a. Describe any quality measurement and reporting systems that IHN-CCO has in place or will implement in Year 1.

IHN-CCO has pay for performance contract agreements in place that incentivize providers to meet performance on specific quality measures with 94.5% of its PCPCH’s, 100% of its mental health county subcontractors, 100% of its dental care organization partners, with its Non-emergent medical transportation provider, with all contracted Traditional Health Worker Community Based Agencies and one of its primary children’s residential/sub-acute, day treatment and outpatient mental health providers. IHN-CCO is currently measuring quality through its Business Intelligence reporting solution, which includes claims and EHR data. Business Analysts are aggregating metrics by extracting data from the BI solution, through its claims database and from supplemental data reports received from providers on at least a monthly basis to monitor performance.

As part of the HIT Strategic Plan, IHN-CCO has purchased a quality metrics management, close
to real-time, solution to launch 2019. The purchased metrics management solution will be the primary system used to monitor both internal and external quality measurement.

IHN-CCO’s HIT Strategic Plan includes advancing EHR data collection, and many other data sources, such as Collective Plan and Unite Us, that will allow us to collect more robust data will allow for aggregation and quality measurement both internally to manage business operations, network management and population health management as well as quality measurement with our contracted providers.

7b. Will IHN-CCO participate in any external quality measurement and reporting programs (e.g. HEDIS reporting related to NCQA (National Committee for Quality Assurance) accreditation, federal reporting for Medicare Advantage lines of business)?

Yes, IHN-CCO currently does and will continue to participate in the following external quality measurement and reporting programs:

Medicare Advantage
- HEDIS (The Healthcare Effectiveness Data and Information Set)
- CAHPS (Consumer Assessment of Healthcare Providers and Systems)
- HOS (Health Outcomes Survey)
- Data Validation Audit
- Chronic Care Improvement Program
- Monthly report to the Centers for Medicare and Medicaid (CMS) manager (appeals and grievances)
- CMS Audits through Timeliness Monitoring Project (TMP) and Attest (appeals and grievances)

Special Needs Populations (SNP)
- HEDIS
- Chronic Care improvement Program

Oregon Health Authority (OHA)
- DSNP (Dual Eligible Special Needs Plan)
- CAHPS
- 3 - Process Improvement Projects + 1 - Statewide Improvement Project re: Opioids
- 19 - Transformation and Quality Programs
- Exhibit-I (appeals and grievances)

Oregon Department of Consumer & Business Services (DCBS)
- Appeals and grievances data for commercial plans

7c. Explain IHN-CCO’s internal quality standards or performance expectations to which Providers and Subcontractors are held.

IHN-CCO’s quality standards and performance expectations are determined in a variety of ways.
specific to the provider or subcontractor. All contracted providers are held to the standards as set forth in Oregon Administrative Rules and Oregon Statutory Rules, as applicable in providing services to Oregon Health Plan members and treating them equally regardless of insurance.

IHN-CCO providers, including clinical, non-clinical Traditional Health Workers, and public health providers are held accountable for the overall IHN-CCO performance outcomes measured by OHA and are incentivized to meet at least the improvement target or benchmark as determined by OHA. 95% of the contracted PCPCH’s and all Traditional Health Workers contracted agencies are evaluated on the CCO incentive metrics as appropriate for their patient populations. All county mental health partners and oral health partners are also held accountable to the metrics as applicable based on services provided and populations served.

IHN-CCO contracted PCPCH’s, mental health and oral health partners are also held accountable for being at least a Tier 4 State certified PCPCH, and meeting at least CEHRT 2015 standards.

IHN-CCO providers that are contracted in an HCP LAN 4A through category 4C capitation arrangements are held accountable for monitoring the total cost of care of their patient panels, and in some cases sharing the reward and risk if savings are achieved or targets are not met. Providers in a capitation arrangement are also held accountable for over and under-utilization of services.

County mental health partners are held accountable for the many quality metrics in alignment with the Oregon Health Improvement Plan for mental health services. Our partners are accountable for implementing required programs to fidelity that focus on the SMI population health, keeping members with SMI in the community and making sure the most appropriate services are provided at the right time.

IHN-CCO’s primary contracted provider for youth PRTS, Sub-Acute, Day Treatment and outpatient mental health services is held accountable for ensuring members have the appropriate lengths of stays for higher level of care as well as education rates as this provider is also integrated as an outpatient behavioral health provider within the schools. Additional quality measures and standards include coordinating care with other providers in the members care plan such as schools, completing Suicide Risk Assessments (SRA-BHC), satisfaction and access, and providing family therapy.

Non-Emergent Medical Transportation providers are held accountable for cost containment, integrating with clinical, non-clinical and public health providers, completing intake and screenings, auditing member reimbursements, and satisfaction and access.

Dental Care Organization partners are held accountable for cost containment, integrating with clinical, non-clinical and public health providers for providing preventive services and oral health evaluations on members with elevated caries risk, on members with diabetes and pregnant women, following up with members that went to the ED for dental caries, and satisfaction and access.
7d. Describe the mechanisms that IHN-CCO has for sharing performance information with Providers and contractors for Quality Improvement.

IHN-CCO is currently sharing performance information with Providers and subcontractors for quality improvement on a monthly, quarterly, semi-annually and annual basis dependent upon the contractor, the performance being evaluated and the need. Performance reports are generated monthly with demographic information necessary for the provider to achieve the performance metric. Financial reports that are used to evaluate value, over and under-utilization and costs are shared with the provider either quarterly or semi-annual in a collaborative meeting. Annual evaluations are performed and shared with the individual provider to determine value and overall performance. The mechanisms for sharing the information is via a secure file transfer protocol process where the provider is notified that the information is available for him/her to retrieve. The data is currently shared using Microsoft Excel.

As part of the HIT Strategic Plan, IHN-CCO has purchased a quality metrics management, close to real-time, solution to launch 2019. The purchased metrics management solution will be the primary system used to monitor both internal and external quality improvement as well as other data aggregation solutions that can support quality improvement initiatives.

Fraud, Waste and Abuse Compliance

8a. Please describe how Applicant currently engages in activities designed to prevent and detect Fraud, Waste and Abuse.

IHN-CCO staff and Delegated Entities (DE) are responsible for reporting any suspected or known Fraud, Waste, and Abuse (FWA) to the Special Investigations Unit (SIU) or appropriate government organization. Each staff member and DE is made aware of these requirements and standards through our internal policy, published expectations, and annual FWA training.

The SIU is proactive in detecting, correcting, and preventing potential offenses of FWA through its comprehensive FWA program. IHN-CCO thoroughly investigates any suspected cases of FWA and takes steps to report and resolve in a timely matter. When conducting investigations, the SIU has the right to access practitioner, member, and employee records necessary to audit or conduct an investigation into allegations of fraud, waste, or abuse. Additionally, all staff, Provider Network, Subcontractors, and delegated entities are screened against the Office of Inspector General (OIG)/General Services Administration (GSA) exclusion lists to ensure they are eligible to participate in Federal programs. All instances of FWA or potential FWA are reported directly to the Compliance Officer, who then reports any offenses and outcomes to the Compliance Committee, as well as, forwards detailed reports of investigations to law enforcement and/or other Regulatory agencies (OIG, MFCU (Medicaid Fraud Control Units), NBI MEDIC (National Benefit Integrity Medicare Drug Integrity Contractor).

8b. Please describe how Applicant intends to monitor and audit its Provider Network, Subcontractors, and delegated entities for potential Fraud, Waste and Abuse activities.

IHN-CCO intends to continue following the established FWA program which includes, but is not
limited to, monitoring and auditing of compliance with coding, documentation, and billing
requirements to detect errors, discrepancies, and improper payments, as well as, verification of
services letters sent to members on a quarterly basis. IHN-CCO takes appropriate action to
correct billing and claims issues and to adjust, repay, or collect overpayments that have been
identified through the auditing process. In addition, IHN-CCO has procedures in place to
voluntarily self-report fraud or misconduct related to the Medicaid program.

Quality Improvement Program

9a. Please describe policies, processes, practices and procedures you have in place that serve to
improve Member outcomes, including evidence-based best practices, emerging best practices,
and innovative strategies in all areas of Health System Transformation, including patient
engagement and activation.

The IHN-CCO Quality Management Program is designed to monitor the quality of healthcare
provided to all IHN-CCO members to meet the Institute for Healthcare Improvement’s (IHI)
Triple Aim Initiative of improving the patient experience of care, improving the health of
populations and reducing the per capita cost of health care. Our Quality Management Plan and
Utilization Management/Medical Management Plan are reviewed and updated annually and
approved by the internally driven Quality Improvement Committee (QIC) and externally driven
Quality Management Council (QMC).

The goals and objectives of the program include but are not limited to:

1. Maintain an effective Quality Management Program.
   - Meet or exceed the expectations and standards of Federal, State and contractual
     entities regarding maintaining a quality management program including an annual
     evaluation of the program.

2. Ensure continual high-level member satisfaction and access to appropriate healthcare
   services.
   - Monitor member complaints/grievances/appeals internally on an ongoing basis to
     identify areas for improvement.
   - Monitor member satisfaction via external agencies such as through Consumer
     Assessment of Healthcare Providers & Systems Survey (CAHPS), etc. per
     Federal, State and contractual requirements to identify areas for improvement.
   - Implement and monitor appropriate interventions when areas for improvement in
     member satisfaction or access to appropriate healthcare are identified.
   - Report results of monitoring member satisfaction and access to appropriate
     healthcare to the Quality Management Council and to the Board of Directors as
     indicated but at least on a yearly basis.
   - Maintain a collaborative relationship with the provider network and community
     entities.

3. Develop programs and interventions to improve member health outcomes.
   - Promote preventive medical and dental services and early detection of disease
     through the member education and the case management programs.
   - Promote self-management of chronic diseases through the member education and
     the case management programs.
• Monitor health outcomes on an individual basis through the case management program.
• Monitor health outcomes on an overall basis through various methods including HEDIS data, internal data, etc.
• Meet or exceed expectations for all quality projects required by state contractual requirements.
• Report results from programs and intervention monitoring to the Quality Management Council and the Board of Directors on at least a yearly basis or more frequently as indicated.

Our Quality Management Program monitors four key areas: utilization of services, member satisfaction, clinical services (including behavioral health/mental health, dental services, prevention, chronic care improvement, maternal/child services, case management, member health education and quality improvement projects, etc.) and various administrative services. IHN-CCO believes that the integration, monitoring and balance of findings in these areas reflect the achievement of effective and efficient health care that is high quality and cost-effective and meets the IHI’s Triple Aim Initiative.

IHN-CCO employs policies that establish criteria for using practice guidelines that inform the processes of quality management, utilization management, authorization management, appeals and grievances management, and Inter-Rater Reliability Testing (IRR) to monitor and evaluate consistency of decision making according to established standards for IHN-CCO including Criteria for Utilization Management Decision Making, Authorization Requests, Inter-Rater Reliability Testing, and Clinical Practice Guidelines.

All medical Clinical Practice Guidelines are created using evidence-based, valid and reliable clinical evidence from recognized sources, such as professional medical associations (American Medical Association, etc.), voluntary health organizations (American Diabetes Association, etc.), and National Institute of Health Centers and Institutes (National Heart Lung and Blood Institute).

IHN-CCO has adopted/approved the following medical Guidelines for PCPs since Aug 2012:

- Asthma
- Diabetes
- Early Childhood Cavities Prevention
- Obesity
- Osteoporosis
- Prevention - Adult Screenings & Immunizations
- Prevention – Child Screenings & Immunizations
- Tobacco Cessation
- Congestive Heart Failure
- Stable Ischemic Heart Disease
- Oral Health Care in Pregnancy
9b. Please describe your experience and plan to emphasize and implement wellness and health improvement activities and practices within your organization for Members and staff, including partners and contracts in place to strengthen this aspect of health care.

One of the ways IHN-CCO emphasizes and implemented wellness and health improvement activities and classes for both Members, staff, and the community is through the Regional Health Education Hub (RHEHub). The RHEHub pilot is transforming the delivery of health education in the tri-county region through the establishment of a centralized, region-wide health education hub that enables community members, social service agencies and healthcare professionals to easily access a range of health education offerings across our region in a single location. The Regional Health Education Hub’s website has been designed using page description diagrams to identify the needs of each page. Responsive visual designs were completed for all components needed to support the site. The website improves communication and engagement for not only the RHEHub sponsored/offered classes, but information on other wellness activities.

9c. Outline your experience, staffing, policies, procedures, and capacity to collect the necessary electronic and other data that will be required for meeting regular performance benchmarks to evaluate the value of Health Services delivered by your CCO. Describe how CCO accountability metrics serve to ensure quality care is provided and serve as an incentive to improve care and the delivery of services.

IHN-CCO has the experience, staffing, policies, procedures and capacity to collect, transform and use data aggregated from disparate sources in support of performance benchmarks. Currently, we have a data warehouse and a health information exchange that integrates claim and Electronic Health Record (EHR) data.

Performance benchmarking requires a staffing model to support the collection, aggregation, and distribution of the data to enable performance benchmarks. IHN-CCO’s Data Strategy and Operations (DS&O) team is responsible for Technical Consulting, Data Integration, Data Warehousing and Systems Support. This team uses Agile methods and practices implemented by a Scrum framework. Data and information requirements are collected through the various committees and workgroups, as well as direct requests to the IHN-CCO Data Strategy team. A Business Information Analyst (BIA) is responsible for working with the requestor to collect the requirements in order to submit the request to be prioritized in the product backlog. A Product Owner is responsible to prioritize these requests according to the strategic plan and roadmap to ensure the procurement and delivery of the data. The Scrum Master will schedule the request in a development sprint. The DS&O Developer updates the system when the change is available. The DS&O BIA will oversee the integration testing to engage other junior staff to perform systems testing. Once the testing has passed, the changes are promoted up to the test environment for User Acceptance Testing (UAT). IHN-CCO’s Subject Matter Expert (SME), Business Analyst and/or Data Steward will perform UAT and sign off to ensure the change meets requirements. The change is then released and available for consumption, reporting and analytics. IHN-CCO’s Metrics Management solution can subscribe to this data to apply performance benchmarks. The Metrics Management vendor specializes in healthcare informatics, health analytics, advanced clinical data processing, and machine learning.
IHN-CO is currently modernizing its information management practices to update data integration, data aggregation and reporting policies and procedures to enable a more scalable solution that support IHN-CO’s current state, and over the next five years. IHN-CO recognizes the enormity of performance benchmark calculations and has contracted with a Metrics Management vendor for this service. These performance indicators will be distributed to IHN-CO Staff and IHN-CO contracted providers.

The IHN-CO Quality team will use these indicators to monitor measure progress; evaluate outcomes; and to generate/adopt/adapt interventions that significantly improve quality along the six dimensions of equity, safety, effectiveness, patient centeredness, timeliness, and efficiency.

9d. Describe your policies and procedures to ensure a continuity of care system for the coordination of care and the arrangement, tracking and documentation of all Referrals and Prior Authorization.

To ensure a continuity of care system, IHN-CO employs policies that establish criteria for using practice guidelines that inform the processes of quality management, utilization management, authorization management, appeals and grievances management, and Inter-Rater Reliability Testing (IRR) to monitor and evaluate consistency of decision making according to established standards for the CCO. Examples include:

- IHN-CO Criteria for Utilization Management Decision Making
- IHN-CO Authorization Requests
- IHN-CO Inter-Rater Reliability Testing
- Clinical Practice Guidelines
- IHN-CO Member Rights and Responsibilities

The IHN-CO Authorization Requests Policy describes how IHN-CO handles authorizations. Authorizations are accepted, date/time stamped, reviewed for member eligibility, processed according to the contractual, state and/or federal regulations and associated appropriate timeframes. This policy also describes procedures for handling expedited authorization requests and communications, and Invalid requests and communications. Additionally, levels of utilization review (Internal, Clinical, and Medical), outcome determinations, exceptions, and notifications are addressed. In accordance with this policy, PCP submissions are not required for authorizations. Though specialists can also submit authorizations on behalf of the member, any authorization is communicated back to the member’s assigned PCP. Authorizations are required, however, for all out-of-network office visits.

As stated in the IHN-CO Member Rights and Responsibilities Policy, obtaining a referral for care is a right of IHN-CO members. IHN-CO views primary care providers (PCPs) as the authority on directing members to the appropriate care to meet their needs. In order to support PCPs in their critical role as gatekeepers to the care system, IHN-CO empowers PCPs by not placing barriers to the referral process. Due to there being no restrictions for referrals, IHN-CO does not currently track referrals.
Medicare/Medicaid Alignment

10a. Is Applicant under Enrollment and/or Marketing sanction by CMS? If so, please describe?
No.

10b. Is Applicant currently Affiliated with a Medicare Advantage plan? If no, how will Applicant ensure they are contracted or Affiliated with a Medicare Advantage plan prior to the Effective Date of the Contract?
Yes.

Service Area and Capacity

11a. List the Service Area(s) IHN-CCO is applying for and the maximum number of Members IHN-CCO is proposing to accept in each area based upon IHN-CCO’s Community health assessment and plan for delivery of integrated and coordinated health, mental health, and substance use disorder treatment services and supports and oral health services.

See Attachment 7: Service Area Table.

11b. Does Applicant propose a Service Area to cover less than a full County in any County?
No.

Standards Related to Provider Participation

Standard #1 – Provision of Coordinated Care Services

12a. See Attachment 7: DSN Provider Report.

Standard #2 – Providers for Members with Special Health Care Needs

12b. From those Providers and facilities identified in the DSN Provider Report Template (Standard #1 Table), identify those Providers and specialists that have special skills or sub-specialties necessary to provide a comprehensive array of Medical Services to the elderly, disabled populations and children/youths in substitute care or Members who have high health care needs, multiple chronic conditions, mental illness or substance use disorder. In narrative form, describe their qualifications and sub-specialties to provide Coordinated Care Services to these Members.

IHN-CCO contracts with an adequate network of providers with specialized expertise to ensure that members with Special Health Care needs receive appropriate access to the care necessary to manage their needs. IHN-CCO’s Network Strategy and Contracting Department, is responsible for monitoring the specialized network on a continuous basis by geo-coding all providers and using CMS criteria for distance to mileage ratios. Communication is also provided to the
Network Strategy and Contracting Department by Utilization Management and Case Management in special cases where a specialized provider may not be available within the distance/time ratio that is appropriate for network adequacy.

IHN-CCO members with Special Health Care needs are screened through health risk assessments which may include member responses and claims data, and this helps identify providers who can meet specific member needs. Individualized care plans are created to support the member’s goals. Members with special health care needs may also be identified through various reports including daily admissions, discharges, emergency department (ED) utilization, authorization confinements and high utilization/claims paid. Members may be referred for case management/care coordination by various community partners (DHS, SDS), as well as providers, discharge planners and internal utilization management staff. Members are screened through claims data and utilization reports for potential health needs and referral to case management/care coordination services. Case managers communicate with providers, specialists, community partners, family and caregiver as appropriate. PCP documents within member medical record and case managers may have access.

Among the specialists that can meet these needs are Cardiologists, Cardiovascular Disease providers, Cardiovascular Surgery providers, Endocrinologists, Family Practice providers, Gastroenterologists, Hematology/Oncology providers, Internal Medicine providers, Mental Health providers, Nephrologists, Oncologists, Ophthalmologists, Podiatrists, Pulmonary Disease providers, Rheumatologists, and Urologists.

**Standard #3 – Publicly funded public health and community mental health services**

Publicly Funded Health Care and Service Programs Table

<table>
<thead>
<tr>
<th>Name of publicly funded program (i.e. County Mental Health Department)</th>
<th>Type of public program</th>
<th>County in which program provides service</th>
<th>Specialty/Sub-Specialty Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Health Department</td>
<td>Chemical Dependency</td>
<td>Benton</td>
<td>A&amp;D contract</td>
</tr>
<tr>
<td>Public Health Department</td>
<td>Immunization</td>
<td>Benton</td>
<td>Public Health Contract</td>
</tr>
<tr>
<td>Public Health Department</td>
<td>HIV</td>
<td>Benton</td>
<td>Counseling/Testing</td>
</tr>
<tr>
<td>Public Health Department</td>
<td>Sexually Transmitted Diseases</td>
<td>Benton</td>
<td>Public Health Contract</td>
</tr>
<tr>
<td>Public Health Department</td>
<td>Communicable Diseases</td>
<td>Benton</td>
<td>Public Health Contract</td>
</tr>
<tr>
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<td>Benton</td>
<td>Mental Health Contract</td>
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<tr>
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<td>Benton</td>
<td>Cessation Program</td>
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<tr>
<td>Public Health Department</td>
<td>Maternity Care Management</td>
<td>Benton</td>
<td>MCM Contract</td>
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<tr>
<td>Public Health Department</td>
<td>HIV</td>
<td>Lincoln</td>
<td>Counseling/Testing</td>
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<td>Public Health Department</td>
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<td>Maternity Care Management</td>
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<td>Babies First and CaCoon</td>
<td>Lincoln</td>
<td>Targeted Case Management</td>
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<td>Substance Use Disorder and Gambling Addiction</td>
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<td>A&amp;D contract</td>
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<tr>
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<td>Immunization</td>
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<td>MCM Contract</td>
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</tbody>
</table>

12c(1). Describe how Applicant has involved publicly funded providers in the development of its integrated and coordinated Application.

IHN-CCO works with all three of its service area counties (Benton, Lincoln, and Linn) in IHN-CCO’s operations through contracting directly for services as well as having the Counties participate as part of IHN-CCO’s Community Advisory Council; through their involvement in the Regional Planning Council; and other various other committees including its Delivery System Transformation Committee. IHN-CCO also has direct contracts with each of the three Counties for a case rate Maternal Care Management program. Publicly funded partners included
in all committees where feedback was requested for this RFA include:

- Benton County Health Department
- Community Health Centers of Benton and Linn Counties
- Linn County Mental Health
- Linn County Public Health
- Benton County Developmental Diversity
- Lincoln County Health and Human Services (includes public and mental health as well as developmental disabilities)
- Linn Benton Lincoln Early Learning Hub
- Linn County Developmental Disabilities
- Oregon Cascades West Council of Governments
- Linn Benton Lincoln Education School District

12c(2). Describe the agreements with counties in the Service Area that achieve the objectives in ORS 414.153(4). If any of those agreements are under negotiation, IHN-CCO must submit the executed agreement prior to OHA issuing the CCO Contract.

IHN-CCO has agreements in place with Benton, Lincoln, and Linn county mental health departments to provide mental health services to all IHN-CCO member’s in their respective county. All agreements are capitated with incentives tied to quality performance metrics. The contracts specify the services required and in compliance with ORS 414.153(4), including the following services; outpatient, crisis respite, intensive care teams (ICTs), Adult Mental Health Initiative (AMHI), care coordination, quality, reporting, encounter data, peer delivered services, prevention, education, outreach, wrap around services, health related services, supportive employment services, Child and Adolescent Needs and Strengths (CANS) assessments, and Assertive Community Treatment (ACT).

12c(3). If Applicant does not have signed agreements with counties, as providers of services or as required by ORS 414.153(4), describe good faith efforts made to obtain such agreements and why such agreements are not feasible.

IHN-CCO has these agreements in place with its county partners.

Standard #4 – Services for the American Indian/Alaska Native Population (AI/AN)

12d(1). Please describe your experience and ability to provide culturally relevant Coordinated Care Services for the AI/AN population.

IHN-CCO expanded training to ensure members receive culturally responsive, linguistically appropriate and trauma-informed care for all populations, not only American Indian/Alaska Native populations. Network providers and staff will receive additional cultural awareness and skills training to include, but not limited to Cultural Diversity and Inclusion, Motivational Interviewing, Trauma Informed Care and Mental Health First Aid. With enhanced training, providers will be equipped to engage members in shared decision-making, empowering members to live, work and thrive in their communities.
Standard #5 – Indian Health Services (IHS) and Tribal 638 facilities

12e(1)-(2). From among the Providers and facilities listed in the DSN Provider Report Template, please identify any that are Indian Health Service or Tribal 638 facilities. Please describe your experience working with Indian Health Services and Tribal 638 facilities. Include your Referral process when the IHS or Tribal 638 facility is not a participating panel Provider. Include your Prior Authorization process when the Referral originates from an IHS or Tribal 638 facility that is not a Participating Provider.

The DSN Provider Report indicated which are IHS or Tribal 638 facilities. IHN-CCO has one overarching policy for authorizations and the Prior Authorization list includes services and procedures requiring review prior to the member receiving care. The list is plan-specific and published on the IHN-CCO/Samaritan Health Plan website and in the member benefit materials. Authorization request determinations are made using evidence-based, established local, state or nationally accepted criteria adhering to regulatory and plan-specific requirements. IHN-CCO does have experience in coordinating with IHS and other Tribal entities. In regard to coordinating benefits between IHS or Tribal 638 facilities we follow all regulatory requirements.

Standard #6 – Pharmacy Services and Medication Management

12f(1). Describe Applicant’s experience and ability to provide a prescription drug benefit as a Covered Service for funded Condition/Treatment Pairs.

IHN-CCO contracts with a Pharmacy Benefit Manager (PBM) for the purposes of pharmacy benefit administration. This relationship provides access for IHN-CCO members to a pharmacy network, real-time claims processing at contracted pharmacies, encounter data submissions, and electronic utilization management. IHN-CCO ensures coverage exists for medications that treat diseases that fall above the line on the prioritized list. The preferred drug list (PDL) includes medications that are approved to treat above the line diagnosis on the prioritized list. Utilization Management (UM) tools are utilized for drugs that could be used to treat above or below the line treatments.

12f(2). Specifically describe IHN-CCO’s:

Ability to use a restrictive formulary as long as it allows access to other drug products not on the formulary through some process such as Prior Authorization.

- IHN-CCO follows the rules and regulations laid out by the State of Oregon for coverage of medications for IHN-CCO members. IHN-CCO covers all categories of medications except for those that are deemed for the treatment of mental health and on the carve out list from the Oregon Health Authority (OHA). All non-formulary medications are subject to the formulary exception process that allows coverage for medications not on our formulary with an above the line diagnosis.

Formulary development that includes FDA approved drug products for each therapeutic class
and at least one item in each therapeutic class of over-the-counter medications sufficient to ensure the availability of covered drugs with minimal prior approval intervention by the providers of Pharmaceutical Services, e.g. pharmacies.

- IHN-CCO maintains two formularies for CCO members with Medicare Part D coverage and one without Medicare Part D coverage. Our IHN-CCO formulary, our formulary for members without Medicare Part D, will include at minimum Over the Counter (OTC), some Drug Efficacy Study Implementation (DESI) Drugs, and FDA approved drugs to treat approved condition/treatment pairs. Drugs listed on the formulary are approved by SHP Pharmacy and Therapeutics Committee (P&T). Therapeutic classes are reviewed regularly to ensure IHN-CCO is in alignment with state and federal guidance and common first line practices. Utilization management is used when P&T feels members safety is at risk, potential risk of below the line diagnosis on the prioritized list, or as a control to decrease pharmaceutical costs.

Development of clinically appropriate utilization controls.

- IHN-CCO uses drug utilization management as a part of the formulary management program and informs members of the formulary criteria. IHN-CCO utilizes the following methods to prevent the over-utilization and underutilization of prescribed medications for members: step therapy, prior authorizations, and quantity limits. Safety measures are placed at Point of Sale (POS) through drug utilization review (DUR) rejections to help ensure patient safety regarding opioid, biologics, and other high risk/high utilization drugs. All medications and utilization controls are approved by the IHN-CCO P&T committee.

Ability to revise a formulary periodically and a description of the evidence-based review processes utilized (including how information provided by the Oregon Pharmacy & Therapeutics Committee is incorporated) and whether this work will be subcontracted or performed internally.

- IHN-CCO maintains drug formularies for its IHN-CCO members in accordance with state and federal regulations. IHN-CCO may add, delete, or modify drug formularies within the guidelines to meet requirements set by the Oregon Health Authority (OHA). Drug formularies are developed and maintained by SHP Pharmacy Programs with direction from the SHP P&T Committee. IHN-CCO reviews the Oregon Pharmacy & Therapeutic Committee recommendations and approved changes. This information is considered and presented during SHP P&T presentations. Formulary changes are not finalized without approval by the SHP P&T Committee. Each drug on the IHN-CCO formularies has been reviewed and approved by the Food and Drug Administration (FDA).

12f(3). Describe Applicant’s ability to ensure an adequate pharmacy network to provide sufficient access to all enrollees and how Applicant will communicate formulary choices and changes to the network and other medical professionals and how to make non-formulary, i.e. Prior Authorization, requests.

IHN-CCO’s network includes all pharmacies who have an Oregon Medicaid ID. Members can submit for reimbursement for expenses they have paid out of pocket. IHN-CCO provides all utilization management criteria for members and providers online, mail, and in person. If a negative formulary or network change were to occur, IHN-CCO will send out member
notifications 60 days before the changes occur. Instructions for submitting a non-formulary exception request can be found on the IHN-CCO website (www.ihntogether.org).

12f(4). Describe Applicant’s capacity to process pharmacy claims using a real-time Claims Adjudication and Provider reimbursement system and capture all relevant clinical and historical data elements for claims paid in their entirety by the CCO and when the coordination of benefits is needed to bill Third Party Liability (TPL) when the CCO is the secondary coverage.

IHN-CCO’s PBM manages electronic claim transactions between the pharmacies and the PBM. They apply the approved formulary, historical claims data, and the member eligibility information to claims being adjudicated against the system. Pharmacies, members, and providers can see the status of a submitted claim and are able to take additional action if necessary. PBM’s claim processing system has limits set up if IHN-CCO knows that member has a COB or TPL that should be billed first. These indications are sent over via an 834 Eligibility file. If COB or TPL is added later, then a reconciliation process occurs. OptumRx sends a daily claims history file to IHN-CCO. This file is saved within a data warehouse and made accessible for reporting. OptumRx provides encounter data files to IHN-CCO for submission to OHA.

12f(5). Describe Applicant’s capacity to process pharmacy Prior Authorizations (PA) within the required timeframes either with in-house staff or through a Pharmacy Benefits Manager and the hours of operation that prescribers or pharmacies will be able to submit PAs.

IHN-CCO Pharmacy staff process coverage determinations in compliance with member rights, medical criteria, and state and federal regulations. Coverage determinations can be requested by the prescribing physician or other provider on behalf of the member. During normal business hours, Monday- Friday from 8am- 5pm, formulary exceptions are reviewed by the IHN-CCO Clinical Pharmacist or designated Pharmacy Technician staff. During non-IHN-CCO business hours, weekdays 5pm-8am and 24 hours weekend, coverage determinations are reviewed by the PBM. The PBM follows the same standards and timelines as IHN. IHN-CCO makes coverage determinations within 24 hours of the receipt of the request. If additional information is required, IHN-CCO will ask for additional information from the provider and make a decision by 72 hours from the original received date. Additional outreaches are made within the 72 hours by SHP Pharmacy Programs staff. Decision notifications to the providers goes out within 24 hours of receipt or if additional information was requested, within 72 hours of receipt of the original request. A notification to the member follows our PBM’s mailing policy. Within the notice of action letters, all appeal rights are given to members and providers.

12f(6). Describe Applicant’s contractual arrangements with a PBM, including:

The contractual discount percentage(s) from Average Wholesale Price (AWP) or the percentage above Wholesale Acquisition Cost (WAC) the Contractor will receive from the PBM including rebate and incentive agreements or other funds received from the PBM by the CCO or any other type of any pricing arrangements between the CCO and PBM not based on a percentage discount from AWP or the percentage above WAC.

The contractual discount percentage(s) from Average Wholesale Price (AWP) Contractor
received from PBM during the Report Year and/or a summary description of the amount and type of any other pricing arrangements between Contractor and PBM not based on a percentage discount from AWP.
- Brand - AWP -18.0%
- Generic – AWP -18.0%

The dispensing fees associated with each category or type of prescription (for example: generic, brand name, mail order, retail choice 90, specialty).
- $1.00 per paid claim

The administrative fee to be paid to the PBM by CCO on a quarterly basis including a description of the associated administrative fee for each category or type and a description of the amount and type of any other administrative fees paid to PBM by Contractor.
- $1.00 per paid claim

12f(7). Describe Applicant’s ability to engage and utilize 340B enrolled Providers and pharmacies as a part of the CCO including:

Whether Applicant is currently working with FQHCs and Hospitals; and if so,
- Yes, IHN-CCO is currently contracted with FQHCs.

How Applicant ensures the 340B program is delivering effective adjunctive programs that are being funded by the delta between what CCOs pay for their drugs and their acquisition costs; and
- 340B sites in general would not affect the rate and cost that IHN-CCO reimburses contracted pharmacies for, related to member prescriptions. Thus, it is difficult to evaluate if such a delta exists.

How IHN-CCO is evaluating the impact of these adjunctive programs whether they are generating positive outcomes.
- All five of Samaritan Health Service hospitals, the largest health system in the service area, participate in the 340b program and has provided members with medications at significant cost saving to the health system.

12f(8). Describe Applicant’s ability and intent to use Medication Therapy Management (MTM) as part of a Patient-Centered Primary Care Home.

IHN-CCO is in the process of creating a complete and robust Medication Therapy Management Program (MTMP) in collaboration with our Patient-Centered Primary Care Homes (PCPCH) and SHS Pharmacies. IHN-CCO and our PCPCHs are working to create a program with the following goals: improve health outcomes, educate our member on their health conditions, increase medication adherence, and ensure members are managing their medications.
12f(9). Describe Applicant’s ability to utilize E-prescribing and its interface with Electronic Medical Records (EMR).

IHN-CCO contracts with providers and pharmacy who can and actively use e-prescribing.

12f(10). Describe Applicant’s capacity to publish formulary and Prior Authorization criteria on a public website in a format usable by Providers and Members.

IHN-CCO posts all formulary documents, including prior authorization criteria on our member and provider websites. Our formulary and utilization management criteria are available through PDF as well as a searchable document. Member and providers can access these documents on our website, in person or by mail. Formulary documents are available in a machine-readable format as well.

**Standard #7 – Hospital Services**

12g(1). Describe how IHN-CCO will assure access for Members to Inpatient and outpatient Hospital services addressing timeliness, amount, duration and scope equal to other people within the same Service Area.

Indicate what services, if any, cannot be provided locally and what arrangements have been made to accommodate Members who require those services.

- There are certain specialty services that are not available in the immediate three county area served by IHN-CCO. IHN-CCO has addressed this by contracting with seven other hospital systems in Oregon and additional specialty facilities in the State as well as in Washington. Among those services are orthopedic services and neuropsychology. In addition, IHN-CCO enters into single case agreements with both Oregon and other providers nationally if the hospital related services cannot be obtained within the Plan's contracted panel of providers.

Describe any contractual arrangements with out-of-state hospitals.

- IHN-CCO contracts with Seattle Children’s Hospital for specialty services and Stanford Medical Center for transplant related services.

Describe Applicant’s system for monitoring equal access of Members to Referral Inpatient and outpatient Hospital services.

- IHN-CCO requires that its contracted providers (including inpatient and outpatient hospitals), provide the same access for IHN-CCO members as it does for all other lines of business offered by Samaritan Health Plans. This is currently monitored through the grievance process, but IHN-CCO also plans to require that its contracted providers will attest to equal access provisions as well.
12g(2). Describe how the Applicant will educate Members about how to appropriately access care from Ambulance, Emergency Rooms, and urgent care/walk-in clinics, and less intensive interventions other than their Primary Care home.

IHN-CCO provides education to members re: appropriately accessing care from Ambulance, Emergency Rooms, and urgent care/walk-in clinics, and less intensive interventions other than from Primary Care home through communications including:

- IHN Member Handbook
- Your Health Matters newsletter

IHN-CCO provides education materials:

- On the website IHNTogether.org
- Through the IHN-CCO Provider Portal
- In the IHN-CCO Newsletter “Provider News” to increase access to appropriate materials across our network

IHN-CCO ensures correct and consistent use of appropriate criteria when making utilization management decisions. IHN-CCO collects, reviews, analyzes, reports and monitors utilization data for physical health, dental health, behavioral health and mental health services to identify and act on any over or under utilization of health care services by individual members, providers or facilities that may affect the quality of care or well-being of our members.

The Quality Improvement Committee (QIC) consists of representation from the following departments:

- Chief Medical Officer and/or Medical Director
- Claims
- Medical Management
- Account Management
- Quality
- Appeals/Grievances
- Dental
- Customer Care
- Customer Experience
- Health Information
- Network Contracting and Strategy
- Ad hoc as applicable

The QIC collects and analyzes utilization data to assess any potential over or under utilization of physical health and dental services and develops recommendations for the Quality Management Council (QMC).

The Behavioral Health Quality Committee (BHQC) consists of representation from:

- IHN-CCO/Samaritan Health Plans
- County Behavioral Health
- Contracted Behavioral Health Physicians/Providers and Facilities
• Primary Care Medical Homes
• DHS Representatives
• Ad Hoc representation from community organizations

BHQC collects and analyzes utilization data to assess any potential over or under utilization of mental health services. Identified issues are reported to the Quality Management Council (QMC).

The QIC reviews reports at least monthly that include HEDIS (Healthcare Effectiveness Data and Information Set) data, internal reports based on agreed upon criteria, etc. Utilization data is compared to state or national averages when available. Depending on the particular measure, our goal is to either meet or exceed the national average. If neither state nor national averages are available, then IHN-CCO plan data will be trended over time to determine over or underutilization patterns.

After review of the utilization of services, appropriate actions are taken. Actions may include one or more of the following:
• Continue to track and trend the data from quarter to quarter or year to year
• Referral to care management for individual member issues
• Referral to the Chief Medical Officer if a provider or provider group issue is identified
• Reporting to the Quality Management Committee

All discussions and actions related to over or under utilization of data are documented electronically in the QIC meeting minutes, or the Quality Management Committee minutes.

12g(3). Describe how the Applicant will monitor and adjudicate claims for Provider Preventable Conditions based on Medicare guidelines for the following:
• Adverse Events; and
• Hospital Acquired Conditions (HACs).

IHN-CCO utilizes the Optum Claims Editing System (CES) to validate industry standard coding and billing rules, including the National Correct Coding Initiative (CCI) edits, Provider Preventable Conditions based on Medicare Guidelines (Adverse Events; and Hospital Acquired Conditions), etc. CES returns a message to Facets which pends or denies claims that hit these rules. If claims are pended for an invalid modifier (for instance), the IHN-CCO Claims Analyst must review the original claim to determine if there was a keying error or if the claim was submitted incorrectly. If the claim was submitted incorrectly, the claim is denied for incorrect coding. CES edits available to IHN-CCO include those for Commercial, Medicare and Medicaid plans, giving us a robust set of rules with which to edit our incoming claims. In addition, IHN-CCO utilizes the Medicare’s IPPS/OPPS payment rules and edits as published by Optum which also identify billing scenarios that conflict with CMS billing and payment guidelines.
12g(4). Describe the Applicant’s Hospital readmission policy, and how it will enforce and monitor this policy.

IHN-CCO follows OAR 410-125-0410 – Readmission. Readmissions are clinically monitored through our Medical Management department and reviewed with our Medical Director. IHN-CCO will begin contracting with Samaritan Health Services, which is its largest acute inpatient hospital provider, in 2021 with a pay for performance (P4P) agreement that measures hospital readmission rates. The provider must achieve 50% of the metrics in the P4P in order to receive any of its quality incentive money and can obtain 100% of the quality incentives tied to the P4P agreement when 80% of the metrics are achieved.

IHN-CCO contracts with its largest provider of Psychiatric Residential Treatment Services PRTS and Sub-Acute services for children in an episode of care payment where the provider is not reimbursed for readmissions within 7 days of discharge. The Evidence of Coverage EOC payment is inclusive of the readmission and any length of stay.

12g(5). Please describe innovative strategies that could be employed to decrease unnecessary Hospital utilization.

IHN-CCO has employed several strategies for interventions in both the inpatient and home settings, to decrease unnecessary Hospital utilization:

RX-31 Point of Sale Overrides – IHN-CCO performs a minimum 31-day emergency supply electronic claim override on non-formulary Part D medications for members residing in a Long-Term Care (LTC) setting and for members who experience a level of care change. IHN-CCO requires oversight of the PBM for all edits and overrides to verify that the PBM complies with all CMS requirements. The strategy behind this policy is to ensure that members being discharged form an acute setting receive without delay the medications critical to begin the healing process.

IHN-CCO has a program for High-Risk members called Meds to Beds. The program makes sure that medications are filled and delivered to members prior to discharge from an inpatient setting. A pharmacist or RN makes sure that medications are reviewed with the member so that the member understands what medications they have and how to properly use them. This program has been successful, and IHN-CCO aims to expand this program to serve all members.

Through IHN-CCO’s affiliation with Samaritan Health Services, there is a hospital run program that deploys RNs to conduct in-home medication reconciliations post-discharge.

Through IHN-CCO’s Transformation Department, a pilot program providing home palliative care is currently being run in Linn county. This pilot employs the strategy that good outpatient care keeps members from having to use more costly inpatient care services. An alternative payment contract is also in place to ensure that payment is linked to outcomes.

IHN-CCO has enhanced its care coordination and care management services to provide timelier, quality support to members post discharge.
IHN-CCO has a pilot project: Severe and persistent mental illness (SPMI): Decreasing Readmission to Psychiatric Inpatient. The project will complete chart reviews and root cause analyses on each individual readmitted to psychiatric inpatient within a six-month period; determine factors that influence readmits; and recommend appropriate care pathways to resolve identified issues.

12g(6). Please describe how you will coordinate with Medicare Providers and, as applicable, Medicare Advantage plans to reduce unnecessary ED visits or hospitalization for potentially preventable conditions and to reduce readmission rates for Fully Dual Eligible Members. Reports and analytics are developed and reviewed for Fully Dual Eligible Members, in an effort to provide person centered interventions to reduce readmission and unnecessary ED visits.

IHN-CCO care management staff coordinate with providers and other support systems to ensure members receive the right level of care. Care managers are notified of transitions through authorization and admission, discharge, transfer (ADT) daily data files, ICT members, and referral notifications in the form of mail, phone or fax. Members transitioning from an inpatient acute care setting will be provided care management and care coordination. Care management focuses on ensuring members who are transitioning from an acute care setting have their discharge instructions, understand their post-discharge plan, medication is reconciled and any appointments, lab services, DME or ancillary services have been scheduled or delivered. The goals for any member transition of care are:

1. Assessment and evaluation of barriers to care.
2. Creation or update of an Individualized Plan of Care (ICP). to address any new barriers with targeted interventions.
3. Promote education opportunities for self-management activities identified in the ICP.
4. Frequent communication with the member and the member’s care team to ensure follow through on interventions to mitigate barriers to care.
5. Communication with the Interdisciplinary Care Team (ICT). including the Primary Care Provider (PCP), community resources and other care team members.
6. Frequent evaluation of the ICP to timely address member needs.
7. Facilitate a safe transition through the different levels of care through appropriate coordination of care.

For members frequenting the ED unnecessarily they are referred to the care management hub where a clinical care manager or health care guide will work with the hospital discharge planners and member to develop an interdisciplinary care team (ICT). The ICT may convene a meeting to evaluate unmet needs and barriers and collaborate to address. Similar goals are created by the care team and developed into the individualized care plan. The care plan is updated as needed.
Attachment 8: Value Based Payment Questionnaire

Value Based Payment (VBP) Questions

C1. Submit two variations of the information in the supplemental baseline RFA VBP Data Template: a detailed estimate of the percent of VBP spending that uses the Applicant’s self-reported lowest Enrollment viability threshold, and a second set of detailed and historical data-driven estimate of VBP spending that uses the Applicant’s self-reported highest Enrollment threshold that their network can absorb.

See RFA4690-IHNCCO-Att8-RFA VBP Data Template attached as a separate Excel document.

C2. Detailed estimate of the percent of the Applicant’s Per Member Per Month (PMPM) Learning & Action Network (LAN) category 2A investments in Patient-Centered Primary Care Homes (PCPCHs) and the plan to grow those investments. Including payment differential across the PCPCH tier levels and estimated annual increases to the payments and the rationale for approach (including factors used to determine the rate such as Rural, Urban, or social complexity).

IHN-CCO is investing 3% of its annual net premium in PCPCH PMPM Health Care Payment Learning & Action Network (HCP-LAN) category 2A payments. PCPCH PMPM payments are distributed to PCPCH’s as either additional PMPM PCPCH HCP-LAN category 2A payments to a fee-for-service contract or factored into the PCPCH PMPM’s in HCP-LAN category 4 capitation payments where the PCPCH risk stratified capitation PMPM amounts are increased to promote infrastructural advancements and non-clinical services such as home visits and care coordination.

The current PCPCH HCP-LAN category 2A PMPM amounts per member risk category are calculated based on the Centers for Medicare & Medicaid Services (CMS) Hierarchical Condition Categories (HCC) model and associated costs. There are six risk categories that have an associated PMPM that increase as a member’s complexity increases. The current PCPCH PMPM payments factored into the HCP-LAN category 4 capitation amounts are calculated using assigned rate groups and like costs where the maximum PCPCH capitation amount is increased by up to $30.00 PMPM to factor in infrastructural advancements, and non-traditional services such as home visits and care coordination.

In year one, IHN-CCO will implement a new risk stratification model that is more robust and includes more real time and complete information and will include Social Determinants of Health (SDoH) components, which is identified in the Health Information Technology (HIT) strategic plan. IHN-CCO will select the solution for risk stratification by Winter 2019 and will begin developing the new PCPCH PMPM methodology with a go-live date of January 1, 2020.

IHN-CCO’s VBP strategic approach is to shift PCPCH fee-for-service contracts to fully integrated capitation contracts, where it makes sense, based on PCPCH tier level 4 or higher and paneled membership. The capitation payment calculations will include increased payments to
promote PCPCH service delivery concepts. These payments are slightly higher when combined in a capitated arrangement.

IHN-CCO will continue to also reimburse and invest in PCPCH PMPM HCP-LAN category 2A payments to those PCPCH’s that do not have a higher level VBP in place. IHN-CCO’s strategy is to continue providing financial support to lower tier level PCPCH’s through HCP-LAN category 2A payments to push higher tier level PCPCH certifications. These payments are not different payments based on tier level of the PCPCH. They are different based on risk category of the member. IHN-CCO’s strategic plan includes reimbursing all tier levels of PCPCH’s similar risk stratified additional payments to account for the financial costs associated with progressing to higher tier level statuses.

IHN-CCO will continue to evaluate the performance of PCPCH advancements annually, including the overall cost of care as a relation to more advanced PCPCH’s that focus on whole-person and integrated care. Modifications will be made to risk stratified payments based on outcomes of the evaluation and overall net premiums.

C3. Describe in detail the Applicant’s plan for mitigating any adverse effects VBPs may have on health inequities, health disparities, or any adverse health-related outcomes for any specific population (including racial, ethnic and culturally-based communities; lesbian, Gay, Bisexual, transgender and queer (LGBTQ) people; persons with disabilities; people with limited English proficiency; immigrants or refugees and Members with complex health care needs as well as populations at the intersections of these groups. Mitigation plans could include but shall not be limited to measuring contracted provider performance against their own historical performance rather than national benchmarks when patient mix is more complex; use of risk-adjustment models that consider social and medical complexity within the VBP; and monitoring number of patients that are “fired” from providers.

IHN-CCO’s VBPs incorporate monitoring and mitigating adverse health-related outcomes by evaluating financial, utilization and quality metric reports on a quarterly or semi-annual and annual basis across all of its VBP contracted providers. The information reviewed between IHN-CCO and the contracted provider includes historical financial data, historical and current enrollment and demographic data, historical and current claims and encounter data, provider reported health related services data and care coordination data, and Electronic Health Record (EHR) data. The current reports provide information on the value and cost of services, over and under-utilization of services, patient panel increases or decreases, performance metric outcomes, and transformation and HIT advancements. IHN-CCO provider the VBP contracted provider with patient level information necessary to address the specific area of concern.

IHN-CCO’s HIT Strategic Plan includes advancing EHR data collection, and many other data sources, such as Collective Plan and Unite Us, that will allow us to identify patients with medical complexity and health inequities. Collecting more robust data will allow for aggregation and engagement with the VBP contracted provider by being able to stratify our members across several dimensions, including medical complexities, racial, ethnic and culturally-based communities; lesbian, Gay, Bisexual, transgender and queer (LGBTQ) and other health factors that could reveal disparities.
IHN-CCO currently risk stratifies the IHN-CCO population based on assigned rate groups and like costs using a three-year claims history or based on hierarchical condition category (HCC) methodologies. The current member risk category is determined and dependent upon OHA eligibility and claims data. A more robust and global perspective of risk stratification to include SDoH components is underway and identified in the HIT strategic plan. IHN-CCO will select the solution for risk stratification by Winter 2019.

C4. Describe in detail the new or expanded, as previously defined, care delivery area VBPs the Applicant will develop in year one and implement in year two. The two new VBPs must be in two of the following care delivery areas: Hospital care, maternity care, children’s health care, Behavioral Health care, and oral health care; noting which payment arrangement is either with a Hospital or focuses on maternity care, as required in 2021. The description will include the VBP LAN category 2C or higher, with which the arrangement aligns; details about what quality metrics the Applicant will use; and payment information such as the size of the performance incentive, withhold, and/or risk as a share of the total projected payment.

In year one IHN-CCO will begin developing the expansion of the Maternal Case Management Plus Program with a go-live date of January 1, 2021. The purpose of the development of the Maternal Case Management Plus Program is to expand upon the current delivery system to achieve the mutual goal of IHN-CCO, the non-clinical providers, public health providers, and the clinical providers in the community, to help IHN-CCO women have healthier pregnancies, healthier outcomes, and to raise healthy children. County public health partners will work collaboratively and connect women and their families to Obstetricians, Behavioral Health providers, Traditional Health Workers, Dental providers, PCPCH’s, and to other health and parenting resources in Public Health and in the community, such as prenatal care and parenting classes. All providers shall visit pregnant women and new mothers where convenient for the member. Nurse Family Partnership (NFP) services will be delivered using evidence-based home-visiting services per the National Service Office of Nurse Family Partnerships. This model includes building community resources and community service partners to support social determinants of health and coordination with clinical providers, traditional health workers and other community-based organizations.

Partners included in coordinating Maternal Case Management Plus Program care will use HIT systems supported by IHN-CCO to collect data, including at a minimum social determinants of health information, Adverse Childhood Experiences (ACEs) scores, Health Risk Assessments to manage appropriate care plans and to ensure communication and information sharing with the appropriate non-clinical, public health and clinical providers included in the care plan.

IHN-CCO will implement an HCP LAN category 4B VBP with the County Public Health providers where the county Maternity Case Managers receive a PMPM for all pregnant women enrolled in the program based on capacity reports provided by the contracted provider. IHN-CCO will collect data to monitor the performance outcomes of members included in the Maternity Case Management Program to determine quality payments in a pay for performance (P4P) agreement to ensure the service delivery.
The P4P agreement will be a risk-based payment arrangement funded by additional incentives whereby the county public health partner must meet at least 50% of the agreed upon quality metrics to gain any of the incentive pool. IHN-CCO will share risk by reimbursing the county public health partner the total amount available if 80% of the agreed upon quality metrics are achieved.

IHN-CCO will monitor the following performance metrics in year 1:

1. Completion of Health Risk Assessments using a systematic assessment designed by Family Connects, called the Family Support Matrix, of family strengths, risks and needs.
2. Patient Satisfaction Survey Results
3. Services and outreach provided to other family members in the home
4. The percentage of pregnant women enrolled in the program
5. The number of case management services provided
6. Referrals for oral health
7. Referrals for behavioral health
8. Referrals to PCPCH
9. Alcohol and Drug Screenings performed
10. Completion of ACE’s questionnaires

IHN-CCO will monitor the following performance metrics in PCPCH P4P contracts, dental care organization P4P contracts, hospital P4P contracts, and traditional health worker P4P contracts:

PCPCH:
1. Timeliness to Prenatal Care and Postpartum Care
2. Childhood Immunizations
3. Developmental Screenings in the first 36 months of life

Dental Care Organizations:
1. Increase the percent of members who have a dental visit during pregnancy

Traditional Health Workers:
1. Childhood Immunizations
2. Developmental Screenings in the first 36 months of life
3. Referrals to Maternal Case Management Plus Program
4. Home visits provided to pregnant women

Hospitals:
1. Adverse perinatal outcomes of delivery
2. Average length of stay after delivery
3. 3rd or 4th degree lacerations and blood transfusions during delivery

IHN-CCO will continue to expand upon the program and make revisions to the program delivery model and payment model as applicable based on continuous monitoring efforts across all care delivery areas and health care providers both clinical and non-clinical.
In year one IHN-CCO will begin developing an HCP LAN category 3A VBP model with Samaritan Health Services (SHS) for inpatient hospital performance. A P4P agreement will be implemented beginning 1/1/2021 to evaluate the quality outcomes, patient satisfaction and costs across the 5 most utilized hospitals in the IHN-CCO service area. IHN-CCO will reimburse SHS an upside quality pool incentive when at least 50% of agreed upon quality metrics are achieved. SHS can retrieve 100% of the quality pool amount available when 80% of the quality metrics are achieved. Samaritan Health Services can also share in a portion of any savings generated when cost targets for hospital inpatient services are met.

IHN-CCO will monitor selected and agreed upon inpatient hospital metrics with Samaritan Health Services from the following oversight committees/councils:

1. Metrics that are approved by the Oregon Hospital Performance Metrics Advisory Committee as approved by the Centers for Medicare & Medicaid Services (CMS)
2. HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems)
3. CMS Measure List
4. Joint Commission National Hospital Quality Measures List

C5. Provide a detailed plan for how the Applicant will achieve 70% VBP by the end of 2024, taking into consideration the Applicant’s current VBP agreements. The plan must include at a minimum information about the service types where the CCO will focus their VBPs (e.g. primary care, specialty care, Hospital care, etc.) and the LAN categories the CCO will focus on for their payment arrangements (e.g. mostly pay for performance, shared savings and shared risk payments, etc.).

2020: IHN-CCO is reimbursing medical expenses with 27% as part of a 2C or higher VBP. IHN-CCO will reach 30% of IHN-CCO’s medical expenses being reimbursed to providers that are contracted in a 2C or higher VBP agreement in 2020. To achieve the increase, IHN-CCO will expand VBPs in place for maternity case management to at least an HCP-Lan category 3B model.

2021: Design and implement a HCP-Lan category 3B VBP model with Samaritan Health Services for inpatient hospital quality and cost performance to include risk on hospital outpatient services and ED services. This strategy will achieve 56% of medical costs associated with a VBP.

2022: Expand the HCP-Lan category 3B VBP model with Samaritan Health Services for inpatient hospital quality and cost performance to include risk on hospital outpatient services and ED services. This strategy will achieve 56% of medical costs associated with a VBP.
2023: Design VBPs and/or expand on VBPs in place to focus on care area(s) most significant to whole person change and population health concepts, and that are integrated across the community. IHN-CCO will implement at least HCP-LAN category 3B models focusing on substance abuse disorders, children’s behavioral health and those with severe mental illness (SMI) mental health conditions, oral health, and maternity care. IHN-CCO will begin developing VBPs that focus on prescription drug costs and outcomes, including VBP arrangements with its Pharmacy Benefit Manager (PBM). By focusing on VBPs in these areas, IHN-CCO will achieve 69% of medical costs associated with a VBP of which 96% of the VBPs will be in at least an HCP-LAN category 3B VBP or higher model.

2024: IHN-CCO will work collaboratively with the entire CCO community, including the Community Advisory Council to conduct an evaluation of VBPs in place and key focus care areas for 2024 to ensure alignment in developing and expanding on VBPs. IHN-CCO will take all considerations into account and will ensure that VBPs match IHN-CCO’s community strategy and will achieve 70% of medical costs associated with a VBP of which over 95% of the VBPs will be in at least an HCP-LAN category 3B VBP or higher model.
**Attachment 9: Health Information Technology (HIT) Questionnaire**

**HIT Partnerships**

A1a. What challenges or obstacles does Applicant expect to encounter in signing the 2020 HIT Commons MOU and fulfilling its terms?

IHN-CCO believes local, state, and federal alignment is essential to “maintain sustainable cost growth, increase value-based payments and pay for performance, focus on social determinants of health and equity, and increase the behavioral health system.” IHN-CCO does not foresee any challenges or obstacles in signing the 2020 HIT Commons MOU and fulfilling its terms.

**Support for EHR Adoption**

B1a. How will Applicant support increased rates of EHR adoption among contracted physical health Providers?

IHN-CCO will support increased rates of EHR adoption among the contracted physical health providers. The first step in enabling care coordination, population health and value-based payments is to capture the data through EHR and other HIT workflow processes. IHN-CCO’s overall EHR adoption was over 80% in 2015.

IHN-CCO’s Provider Engagement department is responsible for maintaining the physical and behavioral health provider relationships and understanding challenges to EHR adoption. The primary goal of the Provider Engagement department is to “foster a successful and engaged relationship with physical and behavioral health providers that will assist and enhance their day to day efforts to engage with and positively impact members.” IHN-CCO’s Provider Engagement department takes the lead in providing support and resources to help physical health providers plan and implement EHRs within their practices. IHN-CCO can augment the physical health provider’s staff to provide technical expertise on the use of EHRs and HIT. IHN-CCO uses VBP agreements to help mitigate the financial burden placed on the smaller provider practices. The VBP can be constructed to allow for one year of monitoring and then subsequent years with incentives.

IHN-CCO will also continue to encourage the use of Oregon’s Medicaid Meaningful Use Technical Assistance Program (OMMUTAP) to support their contracted providers in their efforts to implement, upgrade and effectively use EHRs.

B1b. How will Applicant support increased rates of EHR adoption among contracted Behavioral Health Providers?

IHN-CCO will support increased rates of EHR adoption among the contracted behavioral health providers. The first step in enabling care coordination, population health and value-based payments is to capture the data through EHR and other HIT workflow processes of which behavioral health providers have faced barriers to adopt. IHN-CCO’s behavioral health providers
account for approximately 16% of the IHN-CCO provider contracts. IHN-CCO has established a Behavioral Health Quality Committee (BHQC) comprised of IHN-CCO, behavioral health provider representatives, and community partners. The purpose of the committee is to “partner with behavioral health providers on community needs and priorities for services in the areas of addiction and mental health, and to assist in planning and evaluating the service delivery system.” Each behavioral health provider representative discusses their EHR strategy including their adoption rates, barriers and implementation status. IHN-CCO operates in a supporting role to provide education and assistance based on the needs of the committee. IHN-CCO offers tools and resources to help minimize the barriers being experienced.

IHN-CCO will also leverage the work of the HITOC Behavioral HIT workgroup to identify strategies in increasing EHR adoption amongst behavioral health providers. IHN-CCO will continue to encourage the use of Oregon’s Medicaid Meaningful Use Technical Assistance Program (OMMUTAP) to support their contracted providers in their efforts to implement, upgrade and effectively use EHRs.

B1c. How will Applicant support increased rates of EHR adoption among contracted oral health Providers?

IHN-CCO supports its dental care organizations in increasing their EHR adoption rates amongst the oral health provider community. IHN-CCO contracts with Capitol Dental Care, Advantage Dental, ODS and Willamette Dental to provide oral health services to members in Linn, Benton and Lincoln counties. IHN-CCO has established a Dental Health Advisory Committee (DHAC) comprised of representatives from IHN-CCO and the dental care organizations. The purpose of the committee is to meet on a quarterly basis to “evaluate IHN-CCO member’s dental health service within Linn, Benton, and Lincoln counties through the spirit of integration and qualitative action of operational policy.” Each dental care organization discusses their EHR strategy including their adoption rates, barriers and implementation status. IHN-CCO operates in a supporting role to provide education and assistance based on the needs of the committee. IHN-CCO offers tools and resources to help minimize the barriers being experienced.

IHN-CCO includes contracting language to set EHR adoption expectations for the adjudication of dental benefits provided by Medicaid dollars. IHN-CCO is in the process of developing a Monitoring an Oversight policy to audit contractual obligations on an annual basis.

In addition, IHN-CCO has pay for performance contracts that incentivize the dental care organizations to help their oral health provider panel to adopt a certified EHR. This program was implemented in 2015 and is still used to help the oral health providers make the shift to an EHR.

IHN-CCO will also continue to encourage the use of Oregon’s Medicaid Meaningful Use Technical Assistance Program (OMMUTAP) to support their contracted providers in their efforts to implement, upgrade and effectively use EHRs.

B1d. What barriers does Applicant expect that physical health Providers will have to overcome to adopt EHRs? How do you plan to help address these barriers?

IHN-CCO’s physical health providers have identified EHR adoption barriers as follows:

1. Lack of funding
2. Lack of resources to implement the EHR and ongoing support
3. Workflow and process changes

IHN-CCO will partner with local, state and national efforts to help reduce barriers for physical health providers by using proven strategies to remediate barriers. IHN-CCO will educate providers on ways to minimize the upfront costs of implementing an EHR. IHN-CCO will provide guidance on grants, financial incentive such as VBP and education on software as a service (SaaS) models to help offset the implementation costs. IHN-CCO can augment the physical health provider’s technical staff to help with implementation and process reengineering.

B1e. What barriers does Applicant expect that Behavioral Health Providers will have to overcome to adopt EHRs? How do you plan to help address these barriers?

IHN-CCO’s behavioral health and public health providers have the same EHR adoption barriers as physical health providers. IHN-CCO will employ the same strategies as those used with physical health providers. In addition, the behavioral health providers also share a concern around privacy and security of the information. Each organization interprets 42 CFR Part 2 in a way that creates an uneasiness in sharing this data. Therefore, no data is being shared until such time clarity or revisions come from this ruling. In addition, there are restrictions for Family Planning data and without understanding the controls in place, Public Health agencies are unsure of engaging in data exchange.

IHN-CCO will align with state initiatives to provide clarity in sharing this sensitive information. In addition, IHN-CCO had employed a Privacy and Security workgroup responsible for creating policy, procedures and auditing oversight. Currently, this is an internal group with an opportunity to expand to include the behavioral health providers.

B1f. What barriers does Applicant expect that oral health Providers will have to overcome to adopt EHRs? How do you plan to help address these barriers?

IHN-CCO’s oral health providers have the same EHR adoption barriers as the physical health providers. Dental organizations are smaller in workforce size and lack the human and financial capital in making this shift. IHN-CCO will use the same strategies as physical health providers to help mitigate barriers in support of oral health providers making the shift to EHRs.

B2a. What assistance you would like from OHA in collecting and reporting EHR use and setting targets for increased use?

IHN-CCO is interested in partnering with OHA in collecting and reporting EHR use and setting targets for increased use based on the IHN-CCO contracted provider network. Providers are having to supply this information to their various payers and having this information supplied once and dispersed to many, will reduce the reporting burden for providers.

B2b. Please describe your initial plans for collecting data on EHR use, and setting targets for increased use by contracted physical health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on the contracted physical health provider’s EHR use is through the various committees/workgroups, provider contracting and VPB contracting process.
IHN-CCO assesses each provider to determine their EHR readiness and leverage the provider contracting process and VBP agreements to set targets. IHN-CCO monitors the contracts for compliance and allow providers to self-report their EHR adoption rates upon request.

B2c. Please describe your initial plans for collecting data on EHR use and setting targets for increased use by contracted Behavioral Health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on the contracted behavioral health provider’s EHR use is through the various committees/workgroups, provider contracting and VBP contracting process. IHN-CCO assesses each provider to determine their EHR readiness and leverage the provider contracting process and VBP contracts to set targets. IHN-CCO monitors the contracts for compliance and allow providers to self-report their EHR adoption rates upon request.

B2d. Please describe your initial plans for collecting data on EHR use and setting targets for increased use by contracted oral health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on the contracted oral health provider’s EHR use is through the various committees/workgroups, provider contracting and VBP contracting process. IHN-CCO assesses each provider to determine their EHR readiness and leverage the provider contracting process and VBP agreements to set targets. IHN-CCO monitors the contracts for compliance and allow providers to self-report their EHR adoption rates upon request.

**Support for Health Information Exchange (HIE)**

C1. IHN-CCO supports health information exchange between its contracted providers. IHN-CCO provides care coordination services that involve deliberately organizing member care activities and sharing information among all participants concerned with a member’s care to achieve safer and more effective care. This means that the member’s needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the member. IHN-CCO’s care coordination efforts coordinate care across the care spectrum, identify and facilitate the closure of gaps, provide support for referral management, and leverage common tools to provide timely notifications. IHN-CCO believes care coordination comes from a partnership amongst providers working towards a shared goal for the patient. This requires not only a willingness to engage, but technical and operational resources that allow those parties to interface in a timely and meaningful way. EHR and other HIT usage is imperative in capturing the data necessary to engage in health information exchange.

IHN-CCO recognizes information must be available to support care coordination amongst care providers. The contracted providers have varying levels of health information exchange capabilities as this directly ties to their EHR strategy and overall technology maturity. Due to these varying levels, IHN-CCO offers HIT services as part of its Regional Health Information Collaborative (RHIC). The formation of the RHIC has resulted in a more robust, more collaborative, and less redundant approach to solving critical community health needs such as care coordination.
RHIC is a community-based HIE governed by representatives involved in delivering patient care as part of the IHN-CCO provider network. The RHIC supports care coordination by offering a community health record, CareTeam Link, for the IHN-CCO provider network. RHIC’s technology aggregates information from disparate EHRs, claims, administrative systems and other sources to create a longitudinal view of a patient. RHIC users can access this longitudinal patient view using a web application, CareTeam Link.

For IHN-CCO network providers that have a preferred use through CollectivePlan (formerly PreManage), the RHIC offers program management services to assist providers in adopting this technology to view their patient’s emergency department (ED) and inpatient utilization.

IHN-CCO’s internal staff use the CollectivePlan to monitor IHN-CCO members utilization, coordinate care and for alerting and notifications. The RHIC has implemented bidirectional data integration to send CollectivePlan the CCO Enrollment File and they in turn send us back a curated admit, discharge, transfer (ADT) record that is ingested into the RHIC. This increases the depth of the patient record data and allows alerting and notification to users that do not have CollectivePlan.

C1a. How will Applicant support increased access to HIE for Care Coordination among contracted physical health Providers? Please describe your strategy, including any focus on use cases or types of Providers, any HIE tool(s) or HIE methods included, and the actions you plan to take.

IHN-CCO supports increased access to HIE for care coordination among the contracted physical health providers. IHN-CCO recognizes the needs of each physical health provider to conduct health information exchange in a way that is aligned with their technology and organizational maturity. IHN-CCO recognizes there is not a “one size fits all” for care coordination and IHN-CCO must offer services to support the physical health provider community and bridge the gap between those that have adopted HIT and those that have not.

IHN-CCO’s RHIC’s CareTeam Link serves as the longitudinal patient view to deliver a common and seamless experience for users. Care summaries are exchanged with those providers participating in the IHN-CCO HIE network. In addition, by centralizing the patient information, IHN-CCO can streamline the logon experience and create administrative efficiencies within the IHN-CCO provider network. IHN-CCO’s future plans include the development of a “one-stop shop” for users to access the different RHIC services which compiles disparate EHR systems health information.

IHN-CCO has implemented CollectivePlan as a solution for emergency department and inpatient utilization, as well as leveraging this system for alerts and notifications. Care management plans are coordinated between the patient’s care providers and uploaded into CollectivePlan. IHN-CCO receives the emergency department, inpatient and care management information back to merge into the longitudinal patient view.
IHN-CCO also supports individual provider efforts to support the care coordination of their patients. The majority of physical health providers use Epic and are able to conduct HIE through CareEverywhere, CareEquality and secure messaging.

IHN-CCO’s Universal Care Committee (UCC) is responsible “to convene and align the community around a common referral process that can be electronically captured and made available to the Primary Care Physicians at the time of service.” Information obtained in a standard format for assessment will be shared across care coordination teams throughout the tri-county region which will allow for reduction in duplication of services and minimize trauma to patient/client. This work crosses the care spectrum from physical, behavioral and oral health. IHN-CCO’s UCC is overseeing the implementation of the e-referral solution, Unite Us. The initial focus is devoted to the housing services of social agencies with plans to rollout across the remaining providers within the IHN-CCO network.

IHN-CCO’s internal Medical Management department has implemented a centralized referral system. There are multiple sources of referrals, which include direct referrals and system-generated referrals. Direct referral sources may include the following: provider, member or caregiver direct referrals, community practitioners and partners, and agencies or vendors, such as home health and customer service. System-generated referrals are based on data and reporting of established triggers and conditions. Triggers may include health risk assessments, pharmacy and medical utilization, stop loss, hospital admission, lab and other data sources and reporting (i.e., hospital ED use, discharges and claims data reporting).

IHN-CCO has a dedicated product development and technology team that is constantly enhancing the services offered through the RHIC. This team is involved in various statewide committees, councils, and is active in many OHA conversations. This involvement allows us to understand the future needs and innovate solutions to ensure those future needs are met.

C1b. How will Applicant support increased access to HIE for Care Coordination among contracted Behavioral Health Providers? Please describe your strategy, including any focus on use cases or types of Providers, any HIE tool(s) or HIE methods included, and the actions you plan to take.

IHN-CCO supports increased access to HIE for care coordination among the contracted behavioral health providers. IHN-CCO recognizes the “digital divide” in the behavioral health provider community. As with the physical health provider HIE services, IHN-CCO also has numerous programs designed to support increased care coordination and referral abilities.

IHN-CCO is collaborating with Linn, Benton and Lincoln county behavioral health providers to establish care plans for SMI, special needs and other high-risk members using Collective Plan.

IHN-CCO’s has behavioral health providers within the Patient Centered Primary Care Homes (PCPCHs) Level 5 and Federally Qualified Health Centers (FQHCs).

To focus on IHN-CCO’s community behavioral health needs a Behavioral Health Director is being recruited to support the distinct needs of behavioral health providers and members needing behavioral services.
IHN-CCO supports its network providers in reengineering workflows that cross organizational boundaries. IHN-CCO network providers, Benton County, and Samaritan Health Services partnered to use the Epic platform to pilot sending referrals across Epic instances. Due to the way workflows are built in each Epic instance, more work must be done in order to facilitate the referral across Epic instances. Through this collaborative process IHN-CCO will understand the barriers and challenges, and plan for future remediation to support this method of referral and other forms of health information exchange.

C1c. How will Applicant support increased access to HIE for Care Coordination among contracted oral health Providers? Please describe your strategy, including any focus on use cases or types of Providers, any HIE tool(s) or HIE methods included, and the actions you plan to take.

IHN-CCO supports increased access to HIE for care coordination among the contracted oral health providers. As with the physical health provider HIE services, IHN-CCO leverages its committees and workgroups to bridge the gap between physical and oral health care coordination.

Our IHN-CCO Dental Clinical Program staff work closely with oral health providers to be a liaison and manage referrals, specifically for members that could benefit from case management. IHN-CCO tracks these members in the system to ensure there is follow-up. In addition, IHN-CCO has extended CareTeam Link to its oral health providers to provide insight into their patient’s history. Currently, Capitol Dental and Advantage Dental have active connections to view IHN-CCO’s longitudinal patient record. IHN-CCO is currently working with Advantage Dental to integrate their dental EHR into the longitudinal patient view to build on the existing patient record depth.

C1d. How will Applicant ensure access to timely Hospital event notifications for contracted physical health Providers? Please describe your strategy, including any focus on use cases or types of Providers, which HIE tool(s), and the actions you plan to take.

IHN-CCO works with the physical health providers to ensure there is access to timely hospital event notifications. IHN-CCO’s members receive the majority of their ED and inpatient care at SHS hospitals. SHS uses a combination of CareEverywhere and DIRECT messaging to provide timely hospital event notifications to the member’s care team including those providers not affiliated with SHS.

For providers using CollectivePlan and have affiliated the member with their practice, alerts and notifications can be triggered once the ED and IP information is input into the CollectivePlan system for hospitals in Oregon, Washington and other surrounding areas.

C1e. How will Applicant ensure access to timely Hospital event notifications for contracted Behavioral Health Providers? Please describe your strategy, including any focus on use cases or types of Providers, which HIE tool(s), and the actions you plan to take.
IHN-CCO works with the behavioral health providers to ensure there is access to timely hospital event notifications. IHN-CCO has implemented CollectivePlan and is currently working with the behavioral health providers to create implementation strategies for timely hospital event notifications based on the member’s assigned county behavioral health organization.

C1f. How will Applicant ensure access to timely Hospital event notifications for contracted oral health Providers? Please describe your strategy, including any focus on use cases or types of Providers, which HIE tool(s), and the actions you plan to take.

IHN-CCO works with the oral health providers to ensure there is access to timely hospital event notifications. IHN-CCO has implemented CollectivePlan and is currently working with the dental care organizations to create implementation strategies for timely hospital event notifications based on the member’s primary dental care assignment.

C1g. How will Applicant access and use timely Hospital event notifications within your organization? Please describe your strategy, including any focus areas and methods for use, which HIE tool(s), and any actions you plan.

IHN-CCO works with internal departments to ensure there is access to timely hospital event notifications. IHN-CCO has implemented CollectivePlan and is currently receiving real-time hospital event notifications based on defined cohorts. IHN-CCO’s Care Management department are the primary users of the notifications and continually define and refine cohort creation to ensure the member’s Care Team is immediately notified of ED or inpatient encounters.

C2a. What assistance you would like from OHA in collecting and reporting on HIE use and setting targets for increased use?

IHN-CCO is interested in partnering with OHA in collecting and reporting on HIE use and setting targets for increased use based on the IHN-CCO contracted provider network.

C2b. Please describe your initial plans for collecting data on HIE use and setting targets for increased use by contracted physical health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on contracted physical health provider’s HIE use is through the various committees/workgroups, provider contracting, and VPB contracting process. IHN-CCO assesses each provider to determine their HIE readiness and leverage the provider contracting process and VBP contracts to set targets. IHN-CCO monitors the contracts for compliance and allow providers to self-report their HIE adoption rates upon request. Some tools offer utilization reports that will also be used to understand HIE use.

C2c. Please describe your initial plans for collecting data on HIE use and setting targets for increased use by contracted Behavioral Health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on contracted behavioral health provider’s HIE use is through the various committees/workgroups, provider contracting and VPB contracting process. IHN-CCO assesses each provider to determine their HIE readiness and leverage the provider contracting process and VBP contracts to set targets. IHN-CCO monitors the contracts for
compliance and allow providers to self-report their HIE adoption rates upon request. Some tools offer utilization reports that will also be used to understand HIE use.

C2d. Please describe your initial plans for collecting data on HIE use, and setting targets for increased use by contracted oral health Providers. Include data sources or data collection methods.

IHN-CCO’s initial plan to collect data on the contracted oral health provider’s HIE use is through the various committees/workgroups, provider contracting and VPB contracting process. IHN-CCO assesses each provider to determine their HIE readiness and leverage the provider contracting process and VBP contracts to set targets. IHN-CCO monitors the contracts for compliance and allow providers to self-report HIE adoption rates upon request. Some tools offer utilization reports that will also be used to understand HIE use.

Health IT For VBP and Population Health Management

D1a. If Applicant will need technical assistance or guidance from OHA on HIT for VBP, please describe what is needed and when.

IHN-CCO is interested in partnering with OHA on HIT for VBP. IHN-CCO plans to leverage the various programs and services such as the Clinical Quality Metrics Registry (CQMR) to understand strategies being used to ease the reporting burden on providers.

D1b. What plans do you have for collecting and aggregate data on SDOH&HE, that may be self-reported or come from providers rather than be found in claims? Can you match demographic and SDOH&HE-related data with claims data?

IHN-CCO is in the process of collecting and aggregating data on SDoH and HE. IHN-CCO is implementing Unite Us for physical, behavioral, oral and social service providers. IHN-CCO is able to use a common data set to match the member demographics to include the social data in the aggregate health record of the patient. The future includes data integration to seed the Unite Us platform to provide operational efficiencies to the social agencies in the reduction of data entry and data duplication. Additionally, this will allow us to propagate the Patient Identifier across systems to increase the success of patient matching.

D1c. What are some key insights for population management that you can currently produce from your data and analysis?

The PHM data aggregation includes claims data and relevant characteristics such as access to health care, food supply, housing, location of residence, age, race, language, gender, as well as disabilities, chronic conditions and comorbidities. Through PHM data and reports, IHN-CCO can segment subpopulations and stratify members into high, medium and low risk categories to address care gaps and barriers to ensure resources and interventions are targeted to individuals who will benefit most. Providers have access to reports and data of assigned members.

IHN-CCO focused on ED Disparity metric identifying those members with complex medical and behavioral health issues.
IHN-CCO uses data to determine diagnostic and utilization patterns of members with co-occurring Mental Health and Substance Use Disorders.

D2a. Describe how Applicant will use HIT to administer VBP arrangements (for example, to calculate metrics and make payments consistent with its VBP models). Include in your description how Applicant will implement HIT to administer its initial VBP arrangements and how Applicant will ensure that it has the necessary HIT as it scales its VBP arrangements rapidly over the course of 5 years and spreads VBP arrangements to different care settings. Include in your description, plans for enhancing or changing HIT if enhancements or changes are needed to administer VBP arrangements over the 5-year contract, including activities, milestones, and timelines.

The RHIC has enabled the data sharing infrastructure to support VBP and population health. The nature of VBP agreements requires the view of data across disparate care settings and care providers to identify care and cost patterns. IHN-CCO’s VBP agreements require both claims and clinical data to be aggregated at the patient level to provide the entities responsible for the care and health of the defined population, a full history of patient care, and costs across providers. The RHIC’s information technology architecture provides the necessary cross-provider infrastructure to support care coordination, VBP, and population health.

IHN-CCO’s HIT Strategic Roadmap reflects the activities, milestones and timelines to ensure IHN-CCO has HIT to support care coordination and VBP. See Attachment 9: Strategic Roadmap.

D2b. Describe how Applicant will support contracted Providers with VBP arrangements with actionable data, attribution, and information on performance. Include in your description, plans for start of Year 1 as well as plans over the 5 year contract, including activities, milestones, and timelines. Include an explanation of how, by the start of Year 1, the Applicant will provide contracted Providers with VBP arrangements with each of the following:
D2b(1). Timely (e.g., at least quarterly) information on measures used in the VBP arrangement(s) applicable to the Providers;

Currently IHN-CCO is providing metric information monthly and ad-hoc upon request. With the implementation of the metrics solution, users can log onto a web interface and view their performance in real time.

D2b(2). Accurate and consistent information on patient attribution; and

Patient attribution is a critical piece in ensuring all the pieces align in changing to an outcomes-based approach. Depending on the technological capabilities of the contracted provider, IHN-CCO offers a few different methods to manage their IHN-CCO member attribution. This is in addition to various workgroups IHN-CCO participates in to refine the patient attribution process.

IHN-CCO offers providers a text file to ingest into their technology system to manage their member/patient attribution. This is done monthly with the option to have more regular files.

IHN-CCO offers a provider portal, ProviderConnect for contracted providers. Within the Primary Care Provider (PCP) Assignment option in ProviderConnect, you can manage providers’ patient attribution, notify SHP of a change to a member’s PCP, and track outreach to and engagement with patients on a provider’s roster.

IHN-CCO institutes workgroups in the event the patient attribution is not aligned with that of the provider. IHN-CCO partners with the provider to educate and ensure complete reconciliation and processes established to ensure the provider’s success.

D2b(3). Identification of specific patients who need intervention through the year, so the Providers can take action before the year end.

IHN-CCO can identify and bring attention to specific patients who need intervention through the year. IHN-CCO distributes monthly gap reports to all providers in a VBP arrangement. IHN-CCO has regular contact to ensure providers can close the gap to meet the VPB agreement terms. With the new Metrics Management implementation, a web portal will be provided to VBP contracted providers to provide real-time data on patients that require intervention at that point in time.

In addition, the Medical Management department works with providers on high-needs members.
D2c. Describe other ways the Applicant plans to provide actionable data to your Provider Network. Include information on what you currently do, what you plan to do by the start of the Contract (Jan. 1, 2020), and what you intend to do in the future. Please include a narrative as well as a roadmap that includes activities, milestones and timelines.

IHN-CCO understands the importance of providing timely, actionable data to the provider network. IHN-CCO works closely with its provider network to monitor the trends over time and proactively identify when performance is not meeting targets. IHN-CCO has standing workgroups to monitor progress and address deficiencies through enhanced billing practices, workflow changes and education.

D2d. Describe how you will help educate and train Providers on how to use the HIT tools and data that they will receive from the CCOs.

There are several methods IHN-CCO uses to educate providers on the use of HIT and how this influences their data.

- IHN-CCO’s Provider Engagement Coordinator is responsible for partnering with the providers and educating them on HIT tools, process changes and other areas that influence how they interact with IHN-CCO.
- IHN-CCO’s Metrics Business Systems Analyst is responsible for working with partners in the data integration and exchange process. Through this process, IHN-CCO educates the providers on the technical specifications for the metrics and provide assistance in analyzing their EHR workflows for changes in order to capture the data to meet the metric requirements.
- IHN-CCO’s Provider Reimbursement Coordinator is responsible for educating the providers on their metric results. This includes answering any questions on how the results were calculated.

In addition to personal interaction with providers, IHN-CCO also provides education through the Provider Newsletter. IHN-CCO provides education on EHR adoption, EHR resources, and other HIT tools implemented to help the provider’s operations to achieve better health outcomes.

D2e. Describe the Applicant’s plans for use of HIT for population health management, including supporting Providers with VBP arrangements. Include in the response any plans for start of Year 1 as well as plans over the 5-year contract, including activities, milestones, and timelines.

Describe how Applicant will do the following:

D2e(1). Use HIT to risk stratify and identify and report upon Member characteristics, including but not limited to past diagnoses and services, that can inform the targeting of interventions to improve outcomes? Please include the tools and data sources that will be used (e.g., claims), and how often Applicant will re-stratify the population.
D2f. What are your plans to provide risk stratification and Member characteristics to your contracted Providers with VBP arrangements for the population(s) included in those arrangement(s)?

IHN-CCO does provide limited risk stratification and member characteristics to the VBP provider’s population. IHN-CCO’s future include partnering with the Health Equity & SDoH workgroup to identify a common demographic data set to use as an additional dimension in the risk stratification process. The initial phase will be to identify the data source, procure the data and then propagate it down to the systems used in the risk stratification process.

IHN-CCO will incorporate Health Equity into its Health IT Strategic Plan to ensure the ability to stratify members across several dimensions, including gender, race, ethnicity and other health factors that could reveal disparities.

D2g. Please describe any other ways that the Applicant will gather information on, and measure population health status and outcomes (e.g., claims, clinical metrics, etc.). Describe Applicant’s HIT capabilities for the purposes of supporting VBP and population management. Again, please provide plans for start of Year 1 as well as plans over the 5-year contract, including activities, milestones, and timelines. Include information about the following items:

D2g(1). Data sources: What data sources do you draw on – for example, if you incorporate clinical quality metrics, what data do you collect and how? How often do you update the data? How are new data sources added? How do you address data quality?
D2g (2). Data storage: Where do you store data (e.g., enterprise data warehouse)?

IHN-CCO strives to get the data points submitted through the normal claims or EHR process. In the event this is not possible, the data is ingested and combined with other data sources. IHN-CCO is in the process of ingesting and storing this data in the HIE and will then draw on this data for care coordination, population health, and VBP.

D2g(3)(a). What HIT tool(s) do you use to manage the data and assess performance?

IHN-CCO uses SQL Server Management Studio, Cognos BI, and Crystal Reports to manage the data and assess performance. The results are extracted to Excel to provide scorecards to VBP providers. IHN-CCO will be using its Metrics Management solution in the future.

D2g(3)(b). What analytics tool(s) do you use? What types of reports do you generate routinely (e.g., daily, weekly, monthly, quarterly)?

IHN-CCO uses Cognos BI, Crystal Reports and Microsoft SQL Server for analysis. Scorecard and unit-record reports are generated monthly and quarterly to evaluate and communicate performance with VBP contracted providers.
D2g(4). Workforce: Do you have staff (in-house, contractors or a combination) who can write and run reports and who can help other staff understand the data? What is your staffing model, including contracted staffing?

IHN-CCO has full-time employees that write and run reports and help other staff understand the data. Business Systems Analysts and Business Analysts work with the Reimbursement department to manage the VBP contracts and associated data.

IHN-CCO will use its Metrics Management vendor in the future to provide this service.

D2g(5). Dissemination: After reports are run, how do you disseminate analysis to Providers or Care Coordinators in your network? How do you disseminate analysis within your organization?

IHN-CCO disseminates analysis outcomes to Providers and Care Coordinators via a secure file transfer protocol. Analysis is disseminated within the organization via secure network access or email, and/or through a presentation to specific committees.

D2g(6). Effectiveness: How will you monitor progress on your roadmap and the effectiveness of the HIT supports implemented or to be implemented?

IHN-CCO’s RHIC Program Manager will be responsible for managing the HIT roadmap based on the business strategy of VBP. This management includes cross-functional stakeholder meetings to ensure projects are on target.

D2g(7). Addressing challenges: What challenges do you anticipate related to HIT to support VBP arrangements with contracted Providers, including provider-side challenges? How do you plan to mitigate these challenges? Do you have any planned projects or IT upgrades or transitions that would affect your ability to have the appropriate HIT for VBP?

IHN-CCO anticipates having some challenges related to HIT to support VBP arrangements with contracted providers namely around ease of adoption and correct usage. As IHN-CCO continues to implement its Metric Management solution with contracted providers, concerns will arise. Provider workflows may be challenged insofar as where data is stored within EHR’s.

IHN-CCO will work closely with its contracted providers to understand their environment and how that aligns with the VBP roadmap. In the event there is conflict, IHN-CCO will work with its contracted providers to mitigate barriers and identify a path forward.
Community Health Improvement Plan
2014

Stronger, healthier, together.
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2014

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Chapter 1
Introduction and Overview

Section 1: Intercommunity Health Network CCO

InterCommunity Health Network Coordinated Care Organization (IHN-CCO) is working with community partners to plan and transform the future of healthcare in Benton, Lincoln, and Linn counties. Oregon’s Health Transformation Bill, passed in June 2011, created the opportunity for local entities to integrate care for Oregon Health Plan (OHP) members under one regional Coordinated Care Organization.

IHN-CCO Mission

IHN-CCO was formed in 2012 by local public, private, and non-profit partners to unify health services and systems for Oregon Health Plan (Medicaid) members in Benton, Lincoln, and Linn Counties. As IHN-CCO, we are committed to improving the health of our communities while lowering or containing the cost of care. We will accomplish this by coordinating health initiatives, seeking efficiencies through blending of services and infrastructure, and engaging all stakeholders to increase the quality, reliability, and availability of care. IHN-CCO takes the “whole person” approach for the health of its members and supports a continuum of care that integrates mental health, addictions, oral health, and physical health.

IHN-CCO Values

- Stakeholder participation in design and delivery of healthcare
- Prevention, early intervention, and self-care
- Promotion of family health as a means of improving readiness to learn and adoption of lifelong, healthy lifestyles
- Maximizing the appropriate utilization of existing health resources within established protocols
- Achieving positive health outcomes through evidence-based health programs
- Delivering service that is culturally sensitive
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- Coordinating care using the patient-centered, primary care, medical-home model, supported by information for medical need and overall health improvement
- Maintaining continuity of care for IHN-CCO members through integration of services within and across providers and patient-support organizations
- Utilizing performance and outcome data to guide design and development of our healthcare delivery systems
- Strengthening community infrastructure to promote healthy neighborhoods

The IHN-CCO Partnership

As of May 2014, the IHN-CCO partnership serves more than 53,000 Oregon Health Plan members and consists of:

- Advantage Dental, Capitol Dental Care, ODS, and Willamette Dental
- Benton, Lincoln, and Linn County governments
- Local healthcare providers
- Federally Qualified Health Centers
- InterCommunity Health Network CCO
- The Corvallis Clinic
- Mid-Valley Behavioral Care Network
- Oregon Cascades West Council of Governments
- Quality Care Associates
- Samaritan Health Plans
- Samaritan Health Services
- Samaritan Mental Health

IHN-CCO Service Area

- IHN-CCO spans the area of Benton, Lincoln, and Linn counties.
- Our membership includes all Oregon Health Plan (OHP) members in the coverage area.
- Our provider partnership consists of large multi-region health systems to a number of independent providers, clinics, and non-traditional providers.
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Section 2: The CHIP, the Community Advisory Council, and the Local Advisory Committees

Community Health Improvement Plan

Oregon Senate Bill 1580 requires that all CCOs “must have a community advisory council” (CAC). The primary tasks of the CAC are “overseeing a community health assessment and adopting a community health improvement plan to serve as a strategic population health and healthcare system service plan for the community served by the coordinated care organization; and annually publishing a report on the progress of the community health improvement plan.”

The first report must be published by July 1, 2014 with annual reports due each July 1 afterwards. The IHN-CCO CAC held its first meeting in November 2012. It consists of one regional council and three local (county) advisory committees.

Community Advisory Council Structure

The regional CAC consists of nineteen representatives (six per county, plus the Chair) and includes twelve IHN-CCO consumer members, three county staff, and three community members. In partnership with the CAC, each county has a Local Advisory Committee to the CAC. Regional CAC representatives are required to participate as members of the local meetings; however, final recommendations are made at the regional Council level. By having one regional council and three local committees to the council, the IHN-CCO increased its:

- **Breadth Community of Input:** The CAC and IHN-CCO have a strong commitment to ensuring that each county community has a distinct voice and ability to influence the process and the strategic planning of the CCO’s healthcare system.
- **Depth of Community Input:** Consisting of nineteen member representatives, the CAC is relatively large. Nineteen is the maximum number to realistically include on a council and remain productive. Yet, more input from a greater number of community members is desirable and beneficial to the process. By participating in local advisory committee meetings, the regional CAC representatives and a variety of community partners work together in the process and create recommendations which are sent up to the IHN-CCO via the CAC.

Guiding Principles of the CHIP

The CAC recognizes the following values as guiding principles of this CHIP

1. **Pursuing optimal health for IHN-CCO members of all ages by:**
   - Meeting people where they are
   - Developing trust by transparency of purpose
   - Ensuring ease of access to healthcare for all
Chapter 1: Introduction and Overview

2. **Sharing ownership of individual, familial, and population health through a:**
   - Holistic collaboration between our healthcare providers
   - Active individual participation
   - Accountability for our own health and that of our families

3. **Creating healthier communities through effective stewardship of resources by ensuring active community engagement in all aspects of our healthcare delivery system.**

4. **These values are guided by the principles of:**
   - Effective communication
   - Health literacy
   - Health equity
   - Cultural and linguistic competence
     - Ready access to highest quality of care
     - Cost efficiency

**CHIP Purpose and Objectives**

**The CHIP:**
- Is based on the foundational work of the three County Community Health Assessments of Benton\(^1\), Lincoln\(^2\), and Linn\(^3\) counties. This CHIP, with their generous permission, borrows from, and builds upon, those documents.

- Determines a beginning place for planning for the improvement of IHN-CCO members’ health and quality of care while effectively managing costs.

- Sets initial areas of focus for health improvement, while building upon ongoing community knowledge and efforts.

- Begins to identify organizational and community assets that can be mobilized to improve services, care, and health.

- Is a collaborative process that incorporates a broad range of community voices.

**The CHIP informs:**
- IHN-CCO and County decision-making and strategic planning

- Prioritization of health issues and solutions

**Major Steps in the CHIP Process**

The Community Advisory Council and its Local Advisory Committees:
1. Identified and recommended Health Impact Areas and associated improvement goals
2. Prioritized a narrowed list of goals for the first round of the CHIP
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3. Provided feedback to IHN-CCO and its county partners on the strategies identified to achieve the recommended goals
4. Provided feedback on the writing of the CHIP
5. Adopted the CHIP

Identifying Health Impact Areas

Local committees and their process
Between the months of May and August 2013, each of the CAC’s local committees independently met two to three times per month to work on the task of identifying Health Impact Areas to recommend to the CAC. Through this process, the committees:

- Familiarized themselves with their county’s Community Health Assessment (CHA) and CHIP
- Learned about the work of IHN-CCO
- Identified prioritization criteria, which were:
  - Prevalence
  - Population
  - Ability to impact,
  - Levels of focus already occurring
  - Cost
- Brainstormed and discussed
- Prioritized Health Impact Area recommendations using a nominal voting process
- Sought input on defining Health Impact Areas (HIAs)
- Sought data specific to IHN-CCO members
- Identified goal recommendations for each HIA
- Workgroups wrote HIA recommendations reports using the criteria as a template, and referred to this in their final selection to submit to the CAC CHIP workgroup.

It is important to note that, while the local committees worked independently, they all recommended the same three or four HIAs.

CAC Health Impact Area Workgroup

The Health Impact Area (HIA) Workgroup consisted of two CAC Representatives from each county and was staffed by the CAC Coordinator. After each local committee independently selected three to four HIAs to recommend to the HIA Workgroup, the workgroup studied them and decided to:

- Recommend all four HIAs to the regional CAC
- Organize all 45 goal recommendations into a cohesive list that honored each county’s specific areas of focus
Chapter 1: Introduction and Overview

- Append each of the original nine local recommendations to the final document so that anyone who wants to dig deeper into understanding how the recommendations were made will have the ability to do so.

Health Impact Areas
For its first CHIP, the IHN-CCO CAC recommended, and the CCO accepted, the following Health Impact Areas (HIAs) as priority areas for an improvement plan.

- Access to Healthcare
- Behavioral Health
- Chronic Disease
- Maternal & Child Health

NOTE: See Appendix A for the original 2013 HIA Recommendation Document

Goal Prioritization Process

After identifying the four major Health Impact Areas and 45 goal recommendations, the next step was to narrow to a smaller set of goals to include in the first CHIP.

To prioritize 4-16 goals for IHN-CCO’s 2014 CHIP, a CHIP Workgroup was appointed by the CAC Chair. The workgroup was composed of members from each of the three counties; it included IHN-CCO member, local government, and community representation. In the months of January and February 2014, the workgroup met seven times and was staffed by the CAC Coordinator, the IHN-CCO CEO, and an Oregon Health Authority Innovator Agent.

To facilitate discussion, the 45 goal recommendations were grouped by common theme to form 25 focus areas. These were then narrowed to 13 focus areas through a combined numerical ranking system. In preparation for identifying strategies to meet the goals of the CHIP, IHN-CCO created a grid of current and proposed programs corresponding to the selected focus areas.

The remaining goals were prioritized via a nominal voting process. Each member voted for their choice of two goal priorities in each of the four HIAs. This narrowed the recommendations to 13 goals (some of these would later become “strategies” or “activities” within the CHIP, as appropriate). The workgroup then returned to the HIA Recommendation document and combed through the original 45 goals to make certain that no high priority goals had been missed for inclusion in the first CHIP. Through this process, the group made a few minor changes to the original goals to clarify them and bring them into alignment with some of the goals that were not prioritized for this first CHIP. Also, one additional goal was picked up, bringing the total to 14.

In anticipation of including youth related improvement plans in future CHIPS, the group changed the name of the Maternal and Perinatal Health HIA to Maternal and Child Health.

NOTE: See Appendix B for the original 2014 CAC Goal Recommendation Document
Chapter 1: Introduction and Overview

**Next Steps**

The IHN-CCO CHIP is intended as a “living document” that will help sustain, enhance, and expand regional partnerships; provide the foundation for ongoing health system planning, evaluation, and transformation; help monitor progress toward identified objectives; and establish new goals and priorities as needs and resources change.

The CAC and its local committees will provide ongoing input and monitoring of progress toward addressing identified CHIP goals. The CAC Coordinator, IHN-CCO, and the County Health Departments will serve a facilitative role to inform this process by providing data and regular updates.

As part of IHN-CCO’s vision of working with community partners to have a collective impact on IHN-CCO member health, the CHIP will undergo annual review with data being updated as available and progress toward goals documented. IHN-CCO will note progress toward improvement goals, changes in priorities, opportunities, and barriers in updates to the CHIP.

These processes will remain open and transparent, and the CAC will reach out to new partners, such as the Early Learning Hub and stakeholders, and incorporate them into ongoing planning efforts.

IHN-CCO anticipates that, over time, our CHIP will intentionally align with local public health assessments and planning of health improvement efforts occurring throughout the region, thus improving coordination and leveraging of resources and increasing health equity.

**Note:** See Appendix C for Benton, Lincoln, Linn, and IHN-CCO CHIP Alignment document

**Future Needs**

Due to legislatively set deadlines, the CAC and Local Committees worked quickly and persistently for many months, in partnership with IHN-CCO and the Counties, to form their council and committees, identify Health Impact Areas, and prioritize goals, strategies, and activities. Availability of county specific, IHN-CCO member data was very limited. This first CHIP is the beginning of a strategic plan that will be enriched over time.

For future IHN-CCO Community Health Assessments, and to further develop the CHIP, the CAC and Local Advisory Committees need increased:

- County specific, IHN-CCO member data
- Community engagement
- Continuing education and networking opportunities
- Funding for new projects and planning, as opportunities arise
- Alignment of regional CHA and CHIP processes (e.g. CHAs and CHPs for the CCO, the three counties, and the future Early Learning Hub).
Framework for Assessing Health - Health Impact Pyramid

Many factors and conditions affect health and wellbeing. Nationally and internationally, a growing body of research reveals how conditions and social economic opportunity determine health outcomes.5

The Health Impact Pyramid6 serves as a framework for the InterCommunity Health Network Coordinated Care Organization’s Community Health Improvement Plan. This model guides a comprehensive public health approach to community assessment and program development across many areas influenced by behavior.

The Five Tiers of the Health Impact Pyramid

In this pyramid, there are five tiers, beginning at the base level where interventions have the greatest population impact and moving toward the top where interventions involve increasing individual effort:

**Base tier:** Socioeconomic determinants of health

**Second tier:** Public health interventions that change the context for health (e.g., smoke-free laws, safe parks, bike lanes)

**Third tier:** Protective interventions with long-term benefits (e.g., smoking cessation)

**Fourth tier:** Direct clinical care (e.g. doctor visit, dental hygiene visit, etc.)

**Fifth/top tier:** Counseling and education

In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact overall, particularly for populations prone to increased health disparities.7 A similar model, called the Ecological or Social Ecology Model, is used in a variety of disciplines in order to better understand the larger forces that impact individuals.8
Chapter 1: Introduction and Overview

The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of *Healthy People,* the national 10-year agenda for improving health of all Americans developed by the U.S. Department of Health and Human Services.

The Health Impact Pyramid aligns with the factors that the U.S. Department of Health and Human Services cite as influencing the development of healthy communities:

“A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, and play within their borders—where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.”

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**Healthy People 2020 Overarching Goals**

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all
- Promote quality of life, healthy development, and healthy behaviors across all life stages

*Source: U.S. Department of Health and Human Services, Healthy People 2020 Framework*

The factors described above informed the selection of strategies and activities to achieve the goals of this CHIP (see CHAPTER 3).
Chapter 2
IHN-CCO: People and Place

Section 1: Population Overview:

IHN-CCO serves Oregon Health Plan (OHP) members in the Oregon counties of Benton, Lincoln, and Linn. This three county region is approximately 4,183 square miles of land stretching from the Pacific Coast through the Willamette Valley and Cascade Mountain Range. It is home to more than 249,804 individuals.\(^1\)

**Age**

Overall, the region's age distribution is weighted toward the young adult age groups from 15 to 24 years old. These groups made up 16.6 percent of the 2012 population in Benton, Lincoln, and Linn counties, compared with 13.1 percent statewide. The influence of Oregon State University plays a role in explaining this distribution.

The region has a slightly larger fraction of its population in all age groups over 60 compared with the state. It also has a smaller fraction in age groups 25 to 44, which are generally considered part of the prime working years and include childbearing years. This may help explain the region's lower-than-average percentage of children less than 15 years of age (16.9% in region versus 18.5% statewide).

The regional totals mask considerable differences between the counties within the region:

- In **Benton County**, a large percentage of residents are in the young adult age classes from ages 15-to-24 (26.4%).
- However, **Lincoln County** has a relatively large percentage of older residents, since many retirees spend their post-work years on the Oregon coast. More than 22 percent of Lincoln County's population is over 65, compared with about 14 percent statewide. Within the region, Linn County's population most closely reflects the statewide age distribution.
- **Linn County's** largest age classes, the 45-to-54 age group and the 25-to-34 age group, are the same as the largest statewide groups. The county does have a higher percentage of children under age 15 (20%) than the State as a whole.
Chapter 2: People and Place

Race and Ethnicity

The most recent U.S. Census data show that Benton, Lincoln, and Linn Counties have a smaller percentage of minority residents compared with the State. Although the racial mix varies within the region, most residents in each county are white and are not of Latino ethnicity. In Oregon, about 85 percent of the population is white versus about 90 percent for the Benton, Lincoln, and Linn region as a whole. Statewide about 12 percent of the population is Latino versus about 8 percent for the IHN-CCO region as a whole.

Asians are the largest non-Latino minority population in Benton County, accounting for about five percent of the population. Native Americans are the largest non-Latino minority population in Lincoln County, accounting for about 3 percent of its population. In Linn County, Native Americans also account for 2 percent of the population.

Graph 2.1. Percent of non-White population by County compared to the State

Source: U.S. Census, 2012, 2010-2012 three-year estimate
Section 2: Oregon Health Plan Members

As of May 2013, over 34,000 Oregon Health Plan eligible individuals were served by the IHN-CCO. With federal changes in eligibility requirements and a state- and nation-wide push for all Americans to sign up for health insurance, there has been a tremendous increase in IHN-CCO membership. That is, during January through mid-April 2014, the IHN-CCO received over 17,000 new members. These numbers continue to increase daily.

Age of OHP members

In 2011 and 2012, over 53,000 residents of Benton, Linn, and Lincoln Counties were enrolled and/or eligible for health insurance coverage, at various times, by the IHN-CCO. Approximately 41.3 percent of IHN-CCO members were age 18 years and younger, 37.8 percent were age 19-50, and 15.1 percent were 51 years old or older.

Graph 2.2 Unduplicated count of OHP eligible/enrolled, by age group, 2011-2012

![Bar chart showing age distribution]

Source: Oregon Health Authority, Office of Health Analytics, DSSURS, 5/10/2013

Race & Ethnicity of OHP members

The largest racial minority group served by the IHN-CCO is Asian/Pacific Islander (1.3 percent), while the largest ethnic population served by the IHN-CCO is Latino (13.4 percent) with Whites making up nearly two thirds of the population (64.7 percent).
Chapter 2: People and Place

Graph 2.3 Unduplicated count of OHP eligible/enrolled, by race/ethnicity, 2011-2012

Source: Oregon Health Authority, Office of Health Analytics, DSSURS, 5/10/2013

Graph 2.4: IHN-CCO members by Ethnicity and Age Group for March 2014

Source: Oregon Health Authority, Office of Health Analytics, DSSURS, 2014
The population forecast for Oregon by the Oregon Department of Human Services and Oregon Health Authority shows significant increase in Medicaid eligibility due to the expansion of coverage through the Affordable Care Act (ACA) of 2010. As a result of this expansion, it is estimated that 241,000 new Oregon residents will be eligible for Medicaid by 2016.

**Chronic Disease Diagnosis Rate Among IHN-CCO Members**

The rate of chronic disease diagnosis among IHN-CCO members is 309.94 per 1,000 members (nearly 1 in 3). Among IHN-CCO members, mental, behavioral, and neurodevelopmental disorders is the most frequent chronic disease diagnosis among IHN-CCO members at a rate of 203 per 1,000 members (1 in 5). Furthermore, Diseases of the Respiratory System (106.94 per 1,000) and Endocrine, Nutritional, & Metabolic Disease (98.36 per 1,000) are also among the most frequent chronic disease diagnoses.

**Graph 2.5 Chronic Disease Rates of IHN-CCO Members per 1,000 by Diagnostic Category**

Source: OHP Claims Data, Summer 2013
Chapter 2: People and Place

**Rural Populations**

People living in rural areas often have added challenges in terms of access to healthcare. Compared to those living in cities and suburbs, rural residents experience higher rates of chronic diseases and disability and death from injuries. ¹³

Lincoln and Linn County residents live in rural areas at a higher rate than residents of Oregon as a whole. That is, while 20.7 percent of Oregonians live in a rural setting, 36.2% of Lincoln residents and 31.4% of Linn County residents (18.7 percent of Benton residents live in a rural setting). That’s a 15.5 and 10.7 percent difference, respectively, from the state percentage. ¹⁴
Section 3: Health Disparities versus Health Inequities

Health Disparities

Health disparities can be described as “differences in the burden of disease, injury, violence, or opportunities to achieve optimal health” that exist among different populations. These populations can be defined by factors such as education, ethnicity, gender, geographic location, income, or sexual orientation.\textsuperscript{15}

Health Inequities

Health inequities, on the other hand, not only emphasize that differences exist between populations, but also consider the relationship of these disparities to patterns of social inequities. Health inequities take into account the strong connection between a health disparity and the “unequal distribution of social, political, economic, and environmental resources.”\textsuperscript{16}

Understanding the social, economic, and educational background of IHN-CCO members is an essential first step in addressing health disparities. It is important that services and outreach to IHN-CCO members be provided in culturally and linguistically appropriate ways so that all members have access to prevention services and high quality care.
Chapter 3
The Plan: Goals, Strategies, and Activities

Section 1: Introduction – Planning for Systemic Change

Health System Transformation

Through the coordinated care model, IHN-CCO is developing and testing health system changes to deliver improved, more integrated care to our members. With a focus on primary care and prevention, and using the coordinated care model, IHN-CCO providers of health services are better able to manage chronic conditions and keep people healthy.

Key elements of the coordinated care model include:
- Utilizing best practices to manage and coordinate care
- Sharing responsibility for health
- Measuring and evaluating performance
- Paying for outcomes and health
- Transparency and clear information

Coordinated Care Organizations

A coordinated care organization, or CCO, is a network of all types of healthcare providers (physical, behavioral health, and dental) who have agreed to work together in their local communities to serve people who receive healthcare coverage through the Oregon Health Plan (Medicaid). CCOs are focused on prevention and helping people manage chronic conditions such as diabetes. This helps reduce unnecessary treatments and services and gives people support to be healthy.

Under CCOs, the Oregon Health Plan’s medical benefits have not changed. Before CCOs, there were separate administrative structures for physical, behavioral, and dental health. That made things more complicated for OHP members and providers and more expensive for everyone.

CCOs have the flexibility to support new models of care that are person-centered and team-focused and which will reduce health disparities. CCOs are able to better coordinate services and also focus on prevention, early identification, chronic illness management, and person-centered care. They have flexibility within their budgets to provide services alongside today’s OHP healthcare benefits with the goal of meeting the Triple Aim of better health, better care and lower costs for those we serve. Additionally, the CCOs have an opportunity to coordinate and integrate services and supports throughout their coverage areas. Through a partnership with other key partners and stakeholders, communities are able to focus on social determinants of health and maximize available resources and supports.
Chapter 3, Section 1: Introduction – Planning for Systemic Change

Transformation Plan

The IHN-CCO Transformation Plan establishes the foundation for our partnership with OHA to achieve Oregon’s health system goals. The Plan encourages continuous quality improvement while recognizing that transformation is a continuous process that will and should evolve over time. The IHN-CCO Transformation Plan is geared specifically to the needs of the community we serve. The Plan demonstrates how IHN-CCO is working to improve health outcomes, increase member satisfaction, and reduce overall costs.

Elements of the Transformation Plan

1. **Healthcare Integration**: IHN-CCO is developing and implementing a healthcare delivery model that integrates physical, behavioral, and dental healthcare. This area of transformation must specifically address the needs of individuals with severe and persistent mental illness.

2. **Patient-Centered Primary Care Home (PCPCH)**: IHN-CCO continues to develop and implement PCPCHs.

3. **Alternative Payment Methodology**: IHN-CCO is developing and implementing consistent alternative payment methodologies that align payment with health outcomes.

4. **Community Health Improvement Plan**: This CHIP will serve as a strategic plan for IHN-CCO and its partners.

5. **Health Information Technologies**: IHN-CCO is developing a plan for encouraging adoption of Electronic Health Records, health information exchange, and meaningful use.

6. **Communication, Outreach, & Engagement**: IHN-CCO is working to assure that communications, outreach, member engagement, and services are tailored to fulfill cultural, health literacy, and linguistic needs.

7. **Traditional Health Worker (THW)**: IHN-CCO is working to assess, develop, grow, and implement THW services.

8. **Race and Ethnicity**: IHN-CCO is developing a quality improvement plan focused on eliminating racial, ethnic, and linguistic disparities in access to care.

Pilot Projects as Proofs-of-Concept

While continuing to provide services to its members, IHN-CCO is working diligently to test innovative methods of transforming the healthcare system through a variety of pilot projects. These pilot projects allow service providers to try out, evaluate, and refine cutting-edge processes for improving healthcare, member satisfaction, and cost efficiency. If a pilot project can be successfully refined and proves to be a viable concept, these new processes and programs will be replicated and customized throughout the IHN-CCO region.

**Funding for the pilots** came about because IHN-CCO service providers collaborated and agreed to take a small reimbursement decrease to create a funding pool for pilot project grants.
Pilot requirements:

1. Ability to replicate with a defined population of IHN-CCO members, a defined demographic, and location.
2. Demonstrates and defines coordination among team members, providers, and multiple organizations.
3. Potential for cost savings, defined by timeframe and duration.
4. Ability to measure and report outcomes using S.M.A.R.T. goals (specific, measurable, achievable, relevant, and time-bound) with pre-established criteria.
5. Clearly identify resources necessary to move the project forward including budget.
6. Models and strives to achieve transformation as described in IHN-CCO contract.

Pilot Project Descriptions:

- **Hospital to Home, Linn County** – This pilot began at Albany General Hospital and expanded to Good Samaritan Regional Medical Center. Its focus is on contacting patients at the Albany and Corvallis hospitals before discharge and setting up a home visit as well as follow-up phone calls. Linn County Mental Health and Addictions staff provides assessments of patient needs for this project. The primary goal of this pilot is to ensure that IHN-CCO members get the care they need so they are less likely to require hospital readmission within 30 days of discharge.

- **Mental Health Wellness Literacy Campaign Pilot, Linn County** – This Pilot is focused on developing an effective communications campaign to increase awareness among primary care providers, community- and faith-based organizations, and local schools— in Linn County and within IHN-CCO—of the ways they can take action to improve their wellness along the Eight Dimensions of Wellness. These eight dimensions are emotional, environmental, financial, intellectual, occupational, physical, social, and spiritual. Through this information, the campaign also seeks to reduce stigma around mental health issues, as mental health is important to each of us.

- **Patient-Centered Primary Care Home (PCPCH), Lincoln County** – This pilot is focused on coordinating IHN-CCO members’ physical and behavioral healthcare and on engaging them in their own wellbeing.

- **Patient Assignment and Engagement, Benton County** – This pilot is looking at which members IHN-CCO shows as assigned to a Primary Care Provider (PCP) at Benton County Health Services, Samaritan Family Medicine, and The Corvallis Clinic-Philomath to see whether the clinic shows the same information—that the member is assigned to them for care.

It is important that the information matches so that when an IHN-CCO member has not been seen in a long time, or after the member receives care at an Emergency Department, that the correct PCP is notified and can check in with the member on their health. Phase two of the pilot involves Registered Nurses contacting newly assigned members and encouraging
them to make an RN appointment for an assessment and to inform them of when to contact their PCP, when to go to urgent care, and when to go to an Emergency Department.

**Measures of Success**

By their very nature, pilot projects are meant to test ideas and allow healthcare providers to attempt to transform and improve the system of care. Some aspects of a pilot may not provide the predicted outcomes and may need to be refined, or it may be that the outcome of a pilot project is that a particular process does not work as well as hoped. For the healthcare system to be transformed, it is important that, with careful planning, providers be able to innovate by trying new ideas.
Section 2: Access to Healthcare

Access to Healthcare includes the percentage of individuals who thought they received appointments and healthcare when needed. In addition to being able to make appointments on a timely basis, access involves overcoming barriers to care such as having transportation to appointments and receiving information in a manner that the member can understand.

Goal 1 – Access to Healthcare:
Ensure adequate provider capacity for primary care, dental health, mental health, and substance use for IHN-CCO members

Strategy 1: Ensure that IHN-CCO members are seen by their healthcare provider in a timely manner

   Activity A: Plan and implement the Benton County Assignment and Engagement Pilot

   Activity B: Collect baseline data on average length of time from assignment to IHN-CCO to the first visit, type of first visit (e.g. urgent care, ED, PCP), diagnosis, and health risks. Potential data may also include: cost savings (e.g. via reduced Emergency Department visits); reduction in hospitalizations, urgent care visits, etc.; and administrative duplication reduction.

Strategy 2: Support, implement, and evaluate new IHN-CCO enrollee engagement strategies

   Activity A: Develop and implement an Operations Group consisting of Medical Directors and Samaritan Health Service Provider representatives

   Activity B: Determine a research strategy for assessing fair and equitable (a balanced distribution of members based on member need and provider expertise) Primary Care Provider assignment of current and new IHN-CCO members

   Activity C: Create a process to track time of enrollment to time of PCP assignment

   Activity D: Determine a measurement of PCP’s ability to see members in a timely manner

Goal 2 – Access to Healthcare:
Promote the availability of culturally sensitive care, particularly in the areas of language and health literacy

Strategy 1: Promote educational opportunities for all IHN-CCO providers and staff on trainings that focus on, but are not limited to, health equity, health literacy, cultural competence, cross-cultural communication, and working with non-traditional healthcare

   Activity A: Develop a training process by July 1, 2015
Chapter 3, Section 2: Access to Healthcare

**Activity B:** Ensure that all new employees receive trainings within six months of hire

**Activity C:** Offer annual trainings for all employees

**Activity D:** The IHN-CCO Chief Medical Officer will conduct a Health Literacy Continuing Medical Education course to be attended by a variety of local physicians.

**Activity E:** The IHN-CCO Ethnicity and Race Subcommittee will create an inventory of bilingual providers as a baseline.

**Activity F:** The Linn County Mental Health Awareness Pilot will promote public understanding of the relationship between physical and behavioral health and the eight dimensions of wellness, which are emotional, environmental, financial, intellectual, occupational, physical, social, and spiritual. The primary goal of this pilot is to increase community awareness of ways they can engage and improve their individual wellness.

**Strategy 2:** Utilize and expand programs for all types of Traditional Health Workers (THW), including Health Navigators

**Activity A:** Produce a comprehensive inventory of current THW services available in the region

**Activity B:** Develop a THW Payment Methodologies Learning Collaborative

**Activity C:** Solicit feedback from counties and community partners on how to best utilize and train current THWs, and implement a THW training support system

**Activity D:** Improve the THW delivery system, allowing THWs to better support and educate members in navigating the healthcare system and ensure appropriate, timely care

**Activity E:** Develop and implement a THW pilot project by July 1, 2015

**Activity F:** Deliver a Hub versus Non-Hub Delivery Infrastructure Model presentation to the IHN-CCO Delivery System Transformation Steering Committee provider leadership

**Goal 3 – Access to Healthcare:**
Expand after-hours service availability including normal clinic hours and days for primary and behavioral healthcare.

**Strategy 1:** All Patient Centered Primary Care Homes (PCPCH) will be open at least four non-traditional business hours.
Section 3: Behavioral Health

Behavioral Health spans a continuum of behavioral disorders including, but not limited to, prevention, diagnosis and treatment of mental health disorders, mental illness and addictive disorders. It includes wellness and provides differentiation between lesser behavioral health issues attributed to “mental health” and more intrusive disorders described as severe and persistent mental illness. 22

This definition is also intended to inform resource allocation decisions that range from prevention and early intervention to more intensive supports at the mid- and high-range of intervention up to and including residential resources, acute care resources and under-resourced services such as social and medical detoxification.

Goal 1 – Behavioral Health:
Increase child and youth mental health and wellbeing.

Strategy 1: Build capacity of IHN-CCO to engage youth in substance use and mental health issues affecting our community.

Activity A: Focus on adolescent suicide prevention using programs such as Mental Health First Aid23 and Applied Suicide Intervention Skills Training (ASIST). 24

Mental Health First Aid – “teaches the public how to recognize signs and symptoms of mental health problems, how to offer and provide initial help, and how to guide a person toward appropriate treatments and other supportive help. Mental Health First Aid does not teach people to be therapists.” 25

ASIST – is a training “for caregivers who want to feel more comfortable, confident and competent in helping to prevent the immediate risk of suicide. Over one million caregivers have participated in this two-day, highly interactive, practical, practice-oriented workshop.” 26

Activity B: Provide leadership and education opportunities for youth that focus on prevention

Activity C: Collaborate with the counties to identify and share youth engagement and leadership best practices

Activity D: The Wraparound Planning Grant will focus on bringing Wraparound to fidelity to coordinate services and supports for children, youths, and families in all three counties and will identify ways to improve and strengthen youth engagement and leadership.

Wraparound is a planning process that follows a series of steps to help children and youth, particularly those with mental health issues, and their families with their complex needs. Wraparound does this step by step by bringing people together from different parts of the whole family’s life. With help from one or more facilitators, people from
Chapter 3, Section 3: Behavioral Health

the family’s life work together, coordinate their activities, and blend their perspectives of the family’s situation. The Wraparound process also helps make sure children and youth grow up in their homes and communities.  

**Goal 2 – Behavioral Health:**
Reduce stigma associated with diagnosis and treatment of behavioral health issues in order to improve access and appropriate utilization of services.

**Strategy 1:** Increase community awareness of the importance of behavioral health issues in our community in order to reduce stigma associated with treatment.

*Activity A:* The Linn County Mental Health Awareness Pilot will promote public understanding of the relationship between physical and mental health and the eight dimensions of wellness. Part of this campaign is to educate people that mental health is an issue for everyone and that there is no health without good mental health.

*Activity B:* Provide youth and adult Mental Health First Aid trainings to enhance community awareness, decrease stigma, and increase preventative efforts.

*Activity C:* Screening, Brief Intervention, and Referral to Treatment (SBIRT) will be developed as a standard screening practice at all primary care sites. SBIRT is “an approach to screening and early intervention for substance use disorders and people at risk for developing substance use disorders. SBIRT emphasizes combined effort of screening and treatment services as part of a cooperative system of early intervention.”

**Goal 3 – Behavioral Health:**
Expand service options for behavioral health treatment for children, adults, and families

**Strategy 1:** Collaborate with community partners to build upon current resources in our region.

*Activity A:* The IHN-CCO Mental Health Advisory Committee, which includes many partners and stakeholders, will work together to share and build upon mental health resources, including identification and standardization of best practices and standard treatment across the region (e.g. respite/step-down facilities, Peer Support Specialists, co-occurring disorders, etc.)

*Activity B:* The Wraparound Planning Grant will focus on bringing Wraparound to fidelity services for children, youths, and families in all three counties.

*Activity C:* The Wraparound Planning Grant recipients will collaborate to improve and strengthen youth engagement and leadership.

*Activity D:* Support the further development of Assertive Community Treatment (ACT) teams in all three counties.
Chapter 3, Section 3: Behavioral Health

ACT is an evidence-based model of providing treatment and community support to individuals with serious mental illness, which assists in maintaining them within the community. It is a multidisciplinary team approach.  

**Strategy 2:** Assure adequate and easily accessible community based residential resources with active treatment service supports, particularly with regard to detox and crisis respite care.

**Activity A:** The IHN-CCO Mental Health Advisory Committee, including law enforcement representation, will focus on a regional solution to assess detox and crisis respite care service gaps as the Oregon Health Authority transfers adult mental health residential treatment to IHN-CCO.

**Activity B:** Benton, Lincoln, and Linn County mental health programs will collaboratively assemble a database of residential resources for the region that will include the type of facility; level of care, including specialty services; location; rate; and capability to manage identifiable protected health information.

**Strategy 3:** Achieve functional integration with primary care through a “health home” model or as fits the needs of specific populations of a “behavioral health home.”

**Activity A:** IHN-CCO will create a process for evaluating and auditing PCPCH Customer service and member experience through a Consumer Assessment of Healthcare Providers and Systems (CAHPS).

**Activity B:** IHN-CCO will create an inventory of PCPCH provider trainings.

**Activity C:** IHN-CCO will provide a summary of the Alternative Payment Methodologies implemented since the inception of the CCO.

**Activity D:** The IHN-CCO MHAC will assess the need and feasibility of a Behavioral Health Home. A behavioral health home involves integrating primary care into a behavioral health setting (reverse integration).
Section 4: Chronic Disease

Chronic Diseases are human health conditions of long duration and generally slow progression. Chronic diseases, such as heart disease, stroke, cancer, diabetes, depression, certain mental health and addictions conditions are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles (avoiding tobacco, being physically active, and eating well) greatly reduce a person’s risk for developing chronic illnesses. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention measures (including screening and appropriate follow-up) saves lives, reduces disability and lowers medical costs.

Goal 1 – Chronic Disease:
Implement primary prevention strategies to promote health and reduce prevalence of chronic disease, particularly in areas such as obesity, tobacco use, asthma, and environmental toxins.

Strategy 1: Strengthen partnership with Public Health and create a consistent language.

Activity A: Collaborate on a three county Healthy Food Policy for all hospitals and clinics. This policy will outline recommended healthy foods and beverages.

Activity B: Implement a three county Tobacco Prevention and Education Program.

Activity C: Implement and evaluate the process of information sharing to align with the IHN-CCO region Coast to the Cascades Community Wellness Network (CCWN).

The mission of the CCCWN is to provide leadership to enhance the health of communities through development and support for collaborative regional partnerships in Benton, Lincoln, and Linn Counties. The CCCWN includes the following partnerships: Access to Care, Childhood Obesity, Chronic Care, Mental Health, Oral Health, Pregnancy/Prenatal Care, and Tobacco Prevention.

Activity D: IHN-CCO will create a Public Health workgroup whose purpose is to align the three county’s services.

Strategy 2: Increase access to screening for chronic diseases, including causative factors, and make follow-up services for treatment available.

Activity A: IHN-CCO will categorize members by their chronic disease state, pharmacy utilization, and location of Medical Home. This will enable IHN-CCO to look at clusters of members who have chronic diseases, and grouping of multiple chronic diseases, medication management, and develop a Risk Index.

Activity B: IHN-CCO will determine how to best provide, manage, and coordinate high-risk care and will track costs, disease state, case management, hospitalizations, primary care visits, and prescription adherence. The IHN-CCO Quality Management Committee will assess if there are other appropriate measures available.
Section 5: Maternal and Child Health

Maternal Health begins preconception and continues through postpartum. This is the time before, during, and after pregnancy when supportive services enhance a woman’s physical and mental health and wellbeing.

Child Health includes health and wellbeing from birth through 17 years of age.

Goal 1 - Maternal and Child Health:
Improve overall Maternal and Child Health and wellbeing, including a focus on preconception needs.

Strategy 1: Encourage the adoption of the One Key Question Initiative (Healthcare providers asking women of childbearing age if they intend to become pregnant in the next year and then following a protocol depending on the answer).

Activity A: The IHN-CCO Quality Management Committee will evaluate this option and provide a report to the Regional Planning Council to determine next steps.

Strategy 2: Provide and increase access to Maternal Health Navigators and Traditional Health Workers, including doulas.

Activity A: The IHN-CCO Traditional Health Worker Subcommittee will evaluate the need for Maternal Health Navigators. Doulas are covered in the CHIP under Goal 2, Access to Healthcare.

Strategy 3: Focus on early tobacco use, prevention, and tobacco cessation during pregnancy.

Activity A: The Tobacco Master Settlement grant awarded to Benton, Lincoln, and Linn Counties will address tobacco use, prevention, and cessation strategies for pregnant women. The regional team will develop a plan to address smoking rates among pregnant women through a best-practice system, policy, and environmental change in the clinical and community settings. The ultimate goal is to develop and implement a regional tobacco cessation campaign for pregnant women and ensure integration with county Tobacco Prevention and Education Program and Community Prevention Program’s (TPEP & CPP) systematic screening and referral strategies.

NOTE: See Goal 1 in the Behavioral Health Section of this Chapter for a Children’s Health goal. Also, at the time of writing the CHIP, the Benton, Lincoln, Linn Early Learning Hub is forming. IHN-CCO anticipates collaboration between the CAC, IHN-CCO, and the Early Learning Hub to identify more goals related to children and families.
Affiliations and Acknowledgments

The 2014 IHN-CCO Community Health Improvement Plan is a collaborative effort of the many community members, organizations, and providers with a commitment to improving the health of IHN-CCO members. Listed below are the organizations represented by individuals who worked on the Improvement Plan, either as a Community Advisory Council Representative, or as a member of a Local Community Advisory Committee to the CAC, or within a professional role within the system of healthcare.

Addiction, Prevention, & Recovery Committee - Lincoln County
Addictions & Mental Health Planning Advisory Council, Oregon Health Authority
Albany InReach Services
Albany Oral Health Council
Benton County Health Services
Benton County Public Health Planning Advisory Council
Childhood Obesity Coalition, Lincoln County
Childhood Obesity Coalition, Lincoln County
Children & Families Rural Community Registered Nurse
Chronic Care Committee, Lincoln County
Coast to Cascade Wellness Coalition
COMP NW - Center for Lifestyle Medicine
COMP NW Medical Education
Corvallis Community Services Consortium
Disability Services Advisory Council, Oregon Cascades West Council of Governments
Emergency Food & Shelter Program
Faith Community Nursing Coordinator, Lincoln County
Federally Qualified Health Center Council, Lincoln County
Foster Parents
Health & Human Services Directors of Benton, Lincoln, and Linn Counties
Health Care for all Oregon
Helping Homeless or near Homeless Veterans & Families
Homeless Enrichment and Rehabilitation Team board member
InterCommunity Health Network CCO
Lincoln County Health & Human Services
Lincoln County Public Health Advisory Committee
Linn County Department of Health Services & Public Health
Linn County Public Safety Coordinating Council
Linn Housing Authority
Linn-Benton Health Equity Alliance
Mental Health Advisory Board, Linn County
Mental Health Advisory Committee, Lincoln County
Affiliations and Acknowledgments

Mental Health, Addictions, & Developmental Disabilities Advisory Committee, Benton Co.
Mid-Valley Health Care Advocates
Mid-Valley National Alliance on Mental Illness
North Lincoln Hospital Foundation Board
North Senior Connections, Lincoln City
Northwest Parish Nurse Ministries
Obesity Prevention Coalition, Linn County
Oral Health Coalition, Linn County
Oregon Department of Human Services, Lincoln County
Oregon Family Support Network
Oregon Health Authority Innovator Agent
Oregon Hospice & Palliative Care Association
Parish Nursing Advisory Board, Lincoln County
Physicians for National Health Care Plan
Progressive Options Independent Living Center
Regional Oral Health Coalition
Samaritan Health Services
Samaritan Pacific Foundation Board
Senior Services Advisory Committee, Oregon Cascade West Council of Governments
United Way Emergency food and Shelter Program, Linn County
Glossary

Assertive Community Treatment (ACT) – is a team treatment approach designed to provide comprehensive, community-based psychiatric treatment, rehabilitation, and support to persons with serious and persistent mental illness such as schizophrenia.  

Applied Suicide Intervention Skills Training (ASIST) – is a training “for caregivers who want to feel more comfortable, confident and competent in helping to prevent the immediate risk of suicide. Over one million caregivers have participated in this two-day, highly interactive, practical, practice-oriented workshop.”

Cultural and linguistic competence – is a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations.

- 'Culture' refers to language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups.
- 'Competence' is being able to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities.

Eight Dimensions of Wellness

- Emotional—Coping effectively with life and creating satisfying relationships
- Environmental—Good health by occupying pleasant, stimulating environments that support well-being
- Financial—Satisfaction with current and future financial situations
- Intellectual—Recognizing creative abilities and finding ways to expand knowledge and skills
- Occupational—Personal satisfaction and enrichment from one’s work
- Physical—Recognizing the need for physical activity, healthy foods and sleep
- Social—Developing a sense of connection, belonging, and a well-developed support systems
- Spiritual—Expanding our sense of purpose and meaning in life

Health equity – a recognition that people’s race and ethnicity, sex, gender identity, age, disability, socioeconomic status, and geographic location all contribute to an individual’s ability to achieve good health. It is important to recognize the impact that social determinants have on health outcomes of specific populations.

Health literacy – the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions. Aside from the addition of “communicate,” this definition is almost identical to Healthy People 2020.

Mental Health First Aid – is a training that teaches lay-people help persons who are developing a mental illness or are in crisis.
Glossary (continued)

**Patient Centered Primary Care Home (PCPCH)** — is a healthcare clinic recognized for its commitment to patient-centered care. In a Patient-Centered Primary Care Home, patients are the most important part of their care. In this team approach, a variety of care providers collaborate and communicate so that patients’ care and services are integrated.41

**Screening, Brief Intervention, Referral to Treatment (SBIRT)** — “is an approach to screening and early intervention for substance use disorders and people at risk for developing substance use disorders. SBIRT emphasizes combined effort of screening and treatment services as part of a cooperative system of early intervention.”

**S.M.A.R.T. goals** — Goals which are specific, measurable, achievable, relevant, and time-bound.

**Socioeconomic status** — the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation. Examinations of socioeconomic status often reveal inequities in access to resources, plus issues related to privilege, power, and control.42

**Traditional Health Workers (THW)** — includes Community Health Workers, Peer Support and Peer Wellness Specialists, Personal Health Navigators, and Doulas. Midwives are Alternative Care Providers, not THWs.43

**Genitourinary system** — the organs concerned with reproduction and urinary excretion.44

**Wraparound** — a planning process that follows a series of steps to help children, particularly those with mental health issues, and their families with their complex needs. Wraparound does this step by step by bringing people together from different parts of the whole family’s life. With help from one or more facilitators, people from the family’s life work together, coordinate their activities, and blend their perspectives of the family’s situation. The wraparound process also helps make sure children and youth grow up in their homes and communities.45
Acronyms

**ACT** – Assertive Community Treatment

**ASIST** – Applied Suicide Intervention Skills Training

**CAC** – Community Advisory Council

**CAHPS** – Consumer Assessment of Healthcare Providers and Systems

**CCCWN** – Coast to the Cascades Wellness Network

**CHA** – Community Health Assessment

**CHIP** – Community Health Improvement Plan

**CPP** – Community Prevention Program

**HIA** – Health Impact Area

**IHN-CGO** – InterCommunity Health Network Coordinated Care Organization

**OHA** – Oregon Health Authority

**OHP** – Oregon Health Plan

**PCP** – Primary Care Provider

**PCPCH** – Patient Centered Primary Care Home

**RN** – Registered Nurse

**TPEP** – Tobacco Prevention, Education, and Planning

**SBIRT** – Screening, Brief Intervention, and Referral to Treatment

**S.M.A.R.T.** – Goals which are specific, measurable, achievable, relevant, and time-bound

**WHO** – World Health Organization
Appendix A – Health Impact Area Recommendation Document
Poor access to healthcare can result in higher economic costs. These may be a result of increased ER visits and higher medical costs due to treating complicated problems rather than catching them early. The overall health of the population not receiving adequate healthcare declines over time and is one of the cost drivers of high cost to IHN.

IHN-CCO is in a position to have an influence on many of these areas. By improving patient’s access to healthcare; patient knowledge of resources will increase, use of preventative services will increase and lifetime medical expenses will decrease.

**LEVELS of FOCUS ALREADY OCCURRING**

1) Cover Oregon: to help people become enrolled in OHP
2) Traditional Health Workers (formally known as Non-traditional healthcare workers): community health workers, peer wellness specialists and patient navigators
3) Willamette Valley Community Health CCO: Emergency Dept. Intervention Team.

**RECOMMENDATIONS**

1) **Increase access to primary care**: this is the gateway to all forms of medical care.
   A. Offer incentives for physicians who accept new Medicaid patients
2) **Increase access to dental care**
   A. Monitor and decrease wait time between first call to first appointment (identification of patient issues)
   B. Survey IHN-CCO client experiences with dental care, forming a baseline to identify other access and quality issues to be addressed
   C. Add capacity to system, if identified as the best solution to improve access, timeliness and quality of dental care.
3) **Decrease Emergency Room (ER) use by non-emergent patients**:
   A. Assign healthcare worker to frequent ER users to help identify other forms of care that may be utilized in non-emergent cases.
   B. Co-locate ER and Urgent care so patients seeking medical attention have more options
4) **Decrease barriers caused by transportation issues or limited access to internet**
5) **Increase utilization of resources by improving awareness of resources available**
6) **Increase cultural awareness**

**SOURCES**
Appendix A: HIA Recommendation Document

IHNC CO CAC

Health Impact Area Recommendations


Prepared by: Tara Gaitaud, Hilary Harrison, Karen Stephenson, Michael Volpe

Benton local recommendation Appendix

Barriers to Access to Healthcare

1) Geographic barriers
   - Travel distance
   - Rural health professional shortage

2) Cultural barriers
   - Language
   - Health beliefs and behaviors
   - Stigma

3) Socioeconomic barriers
   - Literacy
   - Lack of childcare
   - Full time employment
   - Lack of transportation
   - Financial barriers
   - Social isolation
   - Lack of internet access
   - Numeracy

4) Organizational barriers
   - Long appointments and wait times
   - Accessibility ADA
   - Benchmark-Centered Care rather than Patient-Centered Care
   - Limited appointment availability: quantity and times
   - High Physician/Dentist to Patient Ratio
   - Reimbursement issues
   - New patient accessibility
   - Practitioner beliefs and behaviors
   - ER Use
   - Inadequate advertisement of services
Appendix A: HIA Recommendation Document

IHN-CCO CAC
Health Impact Area Recommendations

APPENDIX A2
Access to Care and Care Coordination - Local HIA Recommendation
Linn County 2013

HEALTH IMPACT AREA: Access to Care and Care Coordination

Access to Care is defined by the OHA as the percentage of individuals (adults and children) who thought they received appointments and care when needed

Care Coordination is facilitating the appropriate delivery of healthcare and related services that address overall wellness by reaching out to connect members with the right services at the right time with the right provider. This includes medical, mental health, dental and preventative wellness services.

PREVALENCE and POPULATION AFFECTED

Access to Care and Care Coordination have a direct impact on all other Health Impact Areas. Measuring access to care is also an important part of identifying disparities in healthcare and barriers to quality healthcare, including a shortage of providers, lack of transportation or long waits to get an appointment.

Linn County’s Quality of Life Survey (QLS) shows that 25% of respondents needed healthcare in the past year and 21% did not have a primary care physician. Only 55% of Hispanic/Latino respondents reported having health insurance and, among those Hispanic/Latino’s who do have insurance, 23% are insured through Medicaid or Medicare, 26% through work plans and the remaining are self-insured or insured through a family member while 45% of non-Hispanic/Latino have insurance coverage provided by work, nearly twice the rate as Hispanics/Latinos. Also, 77% of the residents responding had a regular physician (with a rate as high as 82% in higher income areas). Over 25% of the residents have been unable to get needed healthcare at least once; again, some areas being as high as 44.4% up to 100%, depending on income and education level. They also perceived mental health needs as being higher if a resident knows of a place to go for professional help during times of sadness or depression. Unfortunately, the majority of residents (85.8%) do not know where to go to get help with sadness or depression.

Transportation and childcare are also barriers to access to care. Individuals may actually live closer to population centers (in other communities/counts) than the “required” local healthcare provider yet cannot access those providers. Knowing what healthcare services area are available (e.g., using 2-1-1) does not provide that access; transportation is still a barrier.
COST

The cost of the HIA is unclear at this time. The other HIA’s that inter-connect with Access to Care or Care Coordination have differing financial impacts. Better Access to Care and Care Coordination results in decreased, inappropriate use of Emergency Departments and, hence, a cost savings to IHN-CCO. A decrease in no-show rates is anticipated among IHN-CCO members when care is being coordinated according to clients’ needs.

ABILITY to IMPACT

Access to comprehensive, quality healthcare services is important for the achievement of health equity and for increasing quality of a healthy life for everyone. Furthermore, Care Coordination empowers all parties involved and reduces unnecessary delay and redundancy that results in inefficiency and frustration. A better understanding of available transit needs, services and gaps in Linn Co. is required and contractual agreements with transportation programs can be installed and/or expanded.

Strong partnerships need to be continued with COMP-Northwest and the various “needs” of the community can be included in the curricula of COMP-Northwest. The development and distribution of reference guides related to Access to Care can be very influential in addressing the need for information regarding available services. Increased use of the community’s media outlets to advertise available programs can be helpful.

LEVELS of FOCUS ALREADY OCCURRING

Media outlets are being used for information sharing regarding available programs and individual successes and the current 2-1-1 telephone service has been helpful with behavioral issues. Community Engagement and Service Learning Education at Western University of Health Sciences in Lebanon is striving to service the community through medical student leadership and professionalism. Care coordinators are being implemented at Samaritan Health Services. A Mental Health literacy campaign is being launched in Linn County. The Linn County Public Health and Linn County Mental Health Department are strengthening partnerships throughout the community.

ADDITIONAL INFORMATION NEEDED

More useful and well organized data is needed. There doesn’t seem to be data available to show that there is a significant (if any) difference in usage of healthcare services between IHN members and Samaritan Health insured members, particularly regarding their use of the Emergency Departments. The number of Emergency Department
utilizations for non-urgent concerns is lacking as is the number of “no-shows” in the health system, in general. Access to care is a particular problem for the elderly and more information is needed about their needs—especially those not currently receiving Medicare (hoping to eventually include Medicare covered individuals). This data would be helpful if it were separated aged (50-64), elderly (65-85) and aged elderly (86+), since their needs requirements differ.

RECOMMENDATIONS

1) **Measurable deliverables:** A clear model is needed with measurable deliverables addressing barriers to receiving quality healthcare (e.g., health literacy and language, service availability, after-hour care, non-emergency transportation, childcare).

2) **An updated database of community providers** and services with consistent language and format that is user-friendly (to both members and professional staff) allowing for a clear and open pathway for information sharing and referrals is needed.

3) **Provider information sharing:** A clearer pathway for information sharing between professionals is also needed.

4) **Provider capacity:** We also need to be able to actually provide the services that we are requiring/asking for; there will be limits to the abilities of the various current providers of healthcare services.

5) **Incentives for Primary Care providers** (including Nurse Practitioners and Physician Assistants) based on patients health outcome and not fee-for-services.

6) Encourage all providers (including Traditional Health Workers) to **practice at the top of their license**.

7) **Traditional Health Workers:** Utilization and support of health navigators and case managers.

SOURCES

1) Oregon Health Authority; Oregon’s Health System Transformation Quarterly Progress Report by Oregon Health Authority (10/2012 - 12/31/2012 & 1/2013 - 3/31/2013).

2) Community Health Assessment 2012 by Linn County Health Services, Linn County, Oregon.

3) Linn County Community Health Improvement Plan 2012

4) Linn County (Oregon) Mobilization Action through Planning and Partnerships Committee; the Centers for Disease Control and Prevention.

**Prepared by:** The Care Coordination/Access to Care workgroup: Miao Zhao, Jessica Hiddleson, Denise Diller, Frank Moore, Dick Knowles
APPENDIX B1

Behavioral Health – Local HIA Recommendation
Benton County 2013

HEALTH IMPACT AREA

Behavioral Health – Mental Health & Definition: Substance abuse and mental health/wellness for children and adults.

PREVALENCE and POPULATION AFFECTED

Behavioral health disorders are common in the United States.
1) Approximately 20% of adults and 13% of adolescents suffer from mental disorders each year.¹ ²
2) Approximately 8.7% of Americans aged 12 and older experience substance dependence or abuse each year.¹ ²
3) Mental health and substance abuse issues co-occur in 40-60% of cases
4) Rates of mental health problems are significantly higher for patients with chronic conditions such as: diabetes, asthma, and heart conditions and failure to treat both physical and mental health conditions results in poorer health outcomes and higher health care costs³.

Yet despite the high personal and societal burden of these disorders, fewer than half of adults and only one-third of children with mental disorders and only 11% of individuals with substance use disorders receive treatment.¹ ²

COST

Mental health comprised 12% of IHN-CCO’s current expenditure of OHP funds from the state.⁴ The real cost of mental and behavioral illness is far higher, since many other costly conditions such as obesity, tobacco related disease, heart conditions and others are directly linked to poor mental wellness.

ABILITY to IMPACT

Community interest and mobilization is happening. There are best practices available, including health promotion and prevention strategies.

LEVELS of FOCUS ALREADY OCCURRING

1) IHN-CCO transformation plan projects:
Appendix A: HIA Recommendation Document

IHNC CAC

Health Impact Area Recommendations

- Screening, Brief Intervention, and Referral to Treatment (SBIRT) and
- Mental health peer program for Samaritan Wellness Center for “warm handoffs” to all counties

2) Benton County Health Department:
   - Mental/ Behavioral health is a priority health issue identified in Benton County’s Community Health Improvement Plan 2013-2018.

3) Benton County: Youth Mental Health Coalition

4) Benton County Health Promotion: drug free community grant – Strategic Prevention Framework grant – Tobacco cessation grant.

5) ASIST Suicide Prevention – grant now ended

6) EASA program operational in Linn County

RECOMMENDATIONS

Mental health is a small proportion of the IHNC CAC budget but actions have a large impact on the total wellness of the OHP population. The focus of effort on children, early intervention and prevention gives the most immediate and future benefit. Children’s mental health funding should be protected by including a protective percentage within the CCO budget process.

Priorities:

1) Children’s mental health- Prevention and early intervention
2) Mental health and wellness promotion and stigma reduction for all ages
3) Ensuring early access to care and navigation services that promote a variety of supports
4) Substance abuse – Prevention and Emergency Department diversion/ detox beds and follow up
5) Use of lowest cost options for treatment, such as groups (CBT, psychiatry and others), peers and community workers

SOURCES

1) 2010-2011 National Survey on Drug Use and Health:  
http://www.samhsa.gov/data/nsduh/2k10nsduh/2k10results.htm

2) Results from the 2010 NSDUH: Mental Health Findings:  
http://www.samhsa.gov/data/nsduh/2k10MH_Findings/2k10MHResults.htm

3) http://www.cdc.gov/Features/MentalHealthSurveillance/

4) InterCommunity Health Network CCO Regional Community Advisory Council (CAC) Minutes. 10 June 2013. Western Title Building, Newport, OR.
**Appendix A: HIA Recommendation Document**

**IHNC CAC**

**Health Impact Area Recommendations**

**Prepared by:** Hilary Harrison, Michael Volpe, Tara Gaitaud, Amy Roy, Karen Stephenson

**APPENDIX B2**

**Behavioral Health – Local HIA recommendation**

**Lincoln County 2013**

**HEALTH IMPACT AREA**

**Behavioral Health:** Prevention, diagnosis, and treatment of mental health and substance use.

**PREVALENCE and POPULATION AFFECTED**

A 2005-2007 American Community Survey (ACS) estimated there were approximately 1,907 adults in Lincoln Co. with mental disabilities. This was about 6.5% of the county population. During the same period (2007), nearly 4,000 Lincoln County residents, including more than 400 teenagers, were in need of treatment for substance use disorders. (3) During 2011, nearly 22 million Americans (8.4 percent of the population age 12 or over) were classified as needing treatment for substance use disorders; only 10.8 percent had received treatment during the past year; 89 percent (more than 19 million) of those identified as needing treatment had not received it. Of persons needing treatment for mental health disorders, 14 million did not receive treatment.(1)

Children and youth under 19 make up nearly half the OHP population. The child victim rate in this county is 19.9 per 1,000 children vs. a state wide rate of 12.7 / 1,000. Child abuse/neglect include mental injury, physical and mental neglect, physical abuse, sexual abuse, sexual exploitation or threat of harm. Family stress is a major underlying factor; major sources of stress include untreated mental health and substance use (as well as physical health) disorders. The Statewide Children’s Wraparound Initiative can be included in CCO activities where children and families are concerned.

**COST**

More people have substance disorders than have cancer and heart disease combined. (1) Nearly 70% of Lincoln County residents are affected, directly or indirectly, by substance abuse. (3) The Governor’s Council on Alcohol & Drug Abuse Programs reported in 2007 that untreated substance use disorder costs Oregon $5.93 billion each year: $813 million for healthcare, $4.15 billion in lost earnings, and $967 million for costs such as law enforcement, criminal justice, and social welfare.” (6) According to DHS, “every dollar spent on drug treatment in the community returns about $18.50 in benefits” in reduced costs to taxpayers. (7) Data from the Oregon Health Authority (2012) for Linn, Benton, Lincoln counties show the highest expenditure by diagnosis
category was $43,176,356 for Mental Health Disorders (21% of OHP billing in the top ten categories).

ABILITY to IMPACT

“Up to 81 percent of patients in treatment for alcohol dependence are successful, cocaine treatment is successful for 61 percent, and opiate treatment is successful for up to 92 percent of those in treatment.” (10) “Between 70% and 90% of individuals with mental illness will experience significant reduction in symptoms and improved quality of life with treatments and supports.” (10)

LEVELS of FOCUS ALREADY OCCURRING

See IHN-CCO Transformation Deliverables and Benchmarks. Multidisciplinary approaches are necessary when addressing behavioral health needs. Examples of local non- COO / Health Department agencies include My Sisters Place, Children’s Advocacy Center, Olalla Center, and Seashore Family Literacy Center. Benchmarks at these agencies should be closely monitored.

ADDITIONAL INFORMATION NEEDED

Lincoln County billed $5,242,776 for OHP Mental Health Disorders in 2012. This amount represents approximately 10.5% of the dollars spent on the top ten diagnostic categories in Lincoln County. Past year billings for substance use disorders do not reflect changes in coverage and covered population that will occur as more OHP consumers become eligible for addiction treatment. Careful future tracking of new treatment admissions and separation of mental health and addiction data from physical health data will be necessary to provide measures of the success of efforts to identify and refer more individuals into appropriate treatment and remove barriers posed by stigma and public misinformation.

RECOMMENDATIONS

Specific areas of focus are:
1) Child and youth wellbeing regarding substance use and mental health.
2) Mental Health and Addiction diagnosis, treatment and recovery
3) Specific identified areas of primary need in Lincoln County are:
   • Mental health and addiction screening and early referral to treatment.
   • Prevention education and public outreach to combat stigma and increase awareness and understanding.
Appendix A: HIA Recommendation Document

IHN-CCO CAC

Health Impact Area Recommendations

- Maintenance of locally based outpatient mental health and addiction treatment resources and urgent care for children and adults, accessible residential treatment.

Specific recommendations in areas of primary concern in Lincoln County are:

1) **Increased mental health and addiction screening and early evaluation** of both children and adults to identify both mental health and substance use disorders and make appropriate treatment referrals. (e.g. evidence based screening in doctors’ offices, hospital emergency rooms, and school health clinics.) (8, 9, 11, 12)

2) **Increased prevention education and public outreach** to combat stigma and increase awareness and understanding of mental health and substance use not just in classrooms, but among parents and the general community. (Example: The Olalla Center’s workshops to teach parents and others how to identify and deal with signs or symptoms.) (8, 9, 11, 12)

3) **Support and development of locally based outpatient mental health and addiction treatment resources and urgent care facilities for children and adults.** (Specifically: Community based detoxification and mental health respite in each county and regional treatment that is accessible to residents in any part of the coverage area.) (8, 9, 11)
   - Since more than half of OHP recipients are under the age of 19, this is a group of particular area of concern.

**SOURCES**

1) Lincoln Co. CHA – pg. 94 Mental Health Conditions
2) Lincoln Co. CHA – pg. 60 Child Abuse / Neglect
3) Lincoln Co. CHA – pg. 64 Students /w Symptoms of Depression / Suicide Thoughts
4) Lincoln Co. CHA – Slide Presentation #17
5) American Community Survey (ACS) 2005-7
6) Oregon Health Authority, Billing Data 2012
7) IHN-CCO, Transformation Deliverables and Benchmarks, July 1, 2013
8) National Survey on Drug Use and Health, Substance Abuse and Mental Health Services Administration, U. S. Department of Health and Human Services, 2006 -- 2011. (NSDUH)
10) Alcohol, Illicit Drug & Tobacco Consumption and Consequences in Lincoln County, Oregon 2000-2007 (Updated May 2008)
**Appendix A: HIA Recommendation Document**

**IHN-CO CAC**

**Health Impact Area Recommendations**

11) Domino Effect II 2009-2011, report to the Governor from The Governor's Council on Alcohol & Drug Abuse Programs


13) Formal recommendations of the Lincoln County Mental Health Advisory Committee. August 2013


16) Recommendations on child/youth behavioral health from Olalla Center Director Ray Burleigh, Sept. 2013

17) Proclamation of the Board of Commissioners of Lincoln County, September 11, 2013: The proclamation – prepared and presented by the Lincoln County District Attorney – declared September to be National Recovery and Wellbriety Month in Lincoln County and affirmed that “substance abuse prevention works, treatment is effective, and people can and do recover from substance abuse and mental disorders…it is critical to continue to educate our community that substance abuse and mental disorders are treatable, and people should seek assistance for these conditions with the same urgency as they would any other health problems.”

**Prepared by:** Chandler Davis & Gary Lahman, September 6, 2013
Behavioral Health – Local HIA recommendation
Linn County 2013

HEALTH IMPACT AREA
Behavioral Health includes mental health, mental illness, and addictive behaviors.

PREVALENCE and POPULATION AFFECTED

The IHN-CCO Benchmark 1 is aimed at developing and implementing a healthcare delivery model that integrates mental health and physical healthcare and addictions and dental health. This area of transformation must specifically address the needs of individuals with severe and persistent mental illness. On a national level, access to mental healthcare is significantly less than other types of medical services. 89.3% million Americans live in a federally-designated Mental Health Professional Shortage Area (MHPSA), compared to 55.3% million Americans living in similarly designated primary-care shortage areas and 44.6 % million in dental health shortage areas. The 2011 baseline data prior to CCO formations determined that after hospitalization for mental health was 69.3% for IHN-CCO using billing claims numbers; the state baseline was 57.6%.

Per the Linn County Community Health Assessment 2012 (CHA), the “one or two top health problems in your community” were Obesity, Mental Health, Access to Care and then Drug Abuse. Mental health problems were listed as access to treatment, affordability of prescriptions or housing of individuals with mental health issues. Drug Abuse was listed as number 4 but was translated into “Substance Abuse” which was any response, not including tobacco, involving abuse of illegal drugs or abuse of prescriptions. Residents who had someone to talk to during times of sadness or depression were reportedly less likely to report low levels of mental health. Seniors were also noted to have behavioral health issues and untreated mental health issues that compound chronic disease problems they may have. It is common to mistake behavior issues with normal and common aging ; forgetfulness and irritability are frequent indicators of larger mental health issues.

Respondents to the Quality of Life Survey (QLS) listed substance abuse as a top health concern 70 % of the time; noting drug abuse, alcohol abuse and related behaviors as issues in their community. Of note, Linn County has the most supportive housing in the State although no differentiation was made between mental health and substance abuse. Information from the Student Wellness Survey continually shows that teens access alcohol through parents, with or without parental knowledge, as well as through older siblings and friends of legal age. Also of note, Oregon’s Health System Transformation (2013 first quarter) Quarterly Progress Report lists NO appropriate
screening and intervention for alcohol or other substance abuse. This same document also lists the IHN-CO at 69.7% in follow-up after hospitalization for mental illness (the State Benchmark is 68%; baseline is 65.2%. Abuse of prescription narcotics is a major problem in the U.S., responsible for 1.2 million emergency room (ER) visits in 2009 alone. An estimated 9,000 Americans begin abusing prescription narcotics each day and as of 2007, 35 million people – 14% of the population – reported having abused these medications at some point in their lives. Narcotics have a potential for dependency through what are called reinforcing effects: reduced anxiety, boredom and aggression, and increased feeling of pleasure. According to the Centers for Disease Control, narcotic prescription overdoses accounted for nearly 15,000 deaths in 2008, a four-fold increase since 1999.

COST

Current costs are unclear at this time making potential cost savings of the Health Impact Area impossible to predict. According to national data, The US spends $113 billion on mental health treatment (approximately 5.6% of the national health-care spending) with most of that money going towards prescription drugs and outpatient treatment. 45% of the untreated mentally ill cite cost as a barrier yet Americans paid 13% of the costs for health-care services (2005 data) compared to 11% of behavioral health spending, which includes both mental health and substance abuse treatment.

The various areas that impact Behavioral Health (including Developmental Disabilities) will have different financial impacts; a clearer identification of those areas (or, at least, those areas that we will focus on) is needed. Obviously, increasing the use of the more appropriate, outpatient services available in the community for treatment of mental illnesses rather than depending on the much more expensive inpatient services will save money; how much will be more accurately determined with increased (expected) data.

Substance abuse also has a high financial cost. Those who abuse narcotics are 2.3 times more likely to visit an ER than non-abusers. Pharmacy costs for abusers are 5 to 7 times greater than those for non-abusers.

ABILITY to IMPACT

Education campaigns should begin to increase the knowledge base of residents. Appropriate referrals can be made through personal physicians or individual contacts but the availability of these services needs to be made known to both. Partnership with COMP-Northwest with an eye to workforce development needs to be broadened to include education about available resources and need for increased professional services.
Levels of Focus Already Occurring

The Linn County Alcohol and Drug Abuse Prevention Program is active in prevention and treatment efforts. They provide education to teens through the Life Skills curriculum, an evidence based prevention/education program that serves approximately 1500 students each year. The A and D Program also supports the Linn County Youth Council Students Taking Action Not Drinking (STANDS)—a peer-led group active in developing teen-oriented marketing messages to the community to prevent or reduce teen substance abuse. Early use of alcohol is strongly correlated to future drug use. A focus in Linn Co social media messaging is prevention of early alcohol access and involving parents in having a stronger role in monitoring teenage activities. Linn Together is an area partnership of local schools, law enforcement, parents, faith leaders, youth services, local government, students, healthcare professionals, and business owners. The purpose of the group is to launch evidence-based substance abuse prevention strategies. The Linn County Mental Health Advisory Board has also utilized the media to promote mental health education and awareness activities as attitudes and misconceptions of mental illness are significant impediments to access of individuals seeking care.

Additional Information Needed

The data for drug and alcohol use/abuse and mental health concerns in the senior population is noticeably missing from the CHIP/CHA data (how many Medicaid/OHP folks are in the “senior” population?) Some of the age limits are inconsistent in data sources for this population. Abuse of prescription medications appears to be a significant healthcare risk in the senior population—though data seems inadequate. Gathering more data for this population is recommended; perhaps separate into aged (50-64), elderly (65-85) and aged elderly (86+). ***There is also a noticeable lack of information for children of all age groups with emotional disorders and/or Serious and Persistent Mental Illnesses; perhaps emphasizing healthcare needs of autistic, Asperger’s and developmental issues would be useful. Clearer definitions of “abuse” are needed (tobacco, alcohol, illegal drugs, prescription drugs, etc.) along with clarification of their differing impacts on health in the community.

Recommendations

1) Federal legislation requires more expansive insurance coverage for mental health services; the IHN-CCO structure should reflect a more aggressive pursuit of coverage for these services. Expansion of current programming by Linn County Mental Health and Addiction Services and an expanded panel of Behavioral Health should be focused on increasing assessment, intervention and treatment of behavioral health
disorders, prevention and integration of Behavioral Health services with primary care.

2) Prioritize Behavioral Health services to seniors.

3) Enhance mental health services to children and families; integrate planning and service delivery system design/development with the Early Learning Council Hub and Youth Development Council.

4) Continue to enhance the integration of services to consumers with co-occurring disorders.

5) Specifically address the needs of individuals with severe and persistent mental illness.

SOURCES

1) Coordinated Care Organization-Transformation Amendment-July 1, 2013; WA Post, 12/17/12
2) Seven facts about America’s mental health system: S. Kliff.
4) CHA 2012 by Linn Co. Health Services, Linn Co., Oregon.
5) Linn County Community Health Improvement Plan 2012.
6) Linn County (Oregon) Mobilization Action through Planning and Partnerships Committee; Express-Scripts website: Healthcare Insights (2013)

Prepared by: Linn Behavioral Health workgroup: Anthony Amaral, Frank Moore, & Dick Knowles
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APPENDIX C1

Chronic Diseases: Asthma & Cardiovascular Disease
Local HIA recommendation
Lincoln County 2013

HEALTH IMPACT AREA

Chronic Disease: **Chronic:** persisting over a long period of time; **Disease:** any deviation from or interruption of the normal structure or function of any part, organ, or system (or combination thereof) of the body that is manifested by a characteristic set of symptoms and signs... (Dorland’s Medical Dictionary)

Specific Priority Areas:
1) **Asthma:** A condition marked by periodic attacks of wheezing and difficulty breathing (The American Medical Association Family Medical Guide).
2) **Cardiovascular Disease** (heart disease and stroke)

- **Components of both specific priority areas:**
  - Tobacco Cessation
  - Obesity
  - Physical Fitness
  - Nutrition
  - Diabetes
  - Early diagnosis
  - Environmental toxins

PREVALENCE and POPULATION AFFECTED (Lincoln County Health Assessment)

Oregon ranked among the top 10 states with the highest percentage of adults with asthma in the nation. Chronic lower respiratory disease is the third highest cause of death in Lincoln County. Heart Disease is the #2 leading cause of death in Lincoln County. The rate is higher than in Oregon overall.

COST

“The most recent data on the cost of emergency room visits for asthma is estimated to be more than $546 million annually” (nationwide), American College of Allergy, Asthma, and Immunology (ACAAI)

A 2003 study published in the Journal of Allergy & Clinical Immunology estimated the annual costs for asthma treatment at over $4900 per person. These include both direct costs—such as medicine and visits to the doctor or hospital—and indirect costs, such as
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time off from work (WebMD). Asthma also results in significant time loss from school.
(Lincoln County CHA)

In Lincoln County for 2012 Cardiovascular Disorders was the #2 leading diagnostic code
billed for adults: $5,951,264.20; 15% of billings among the top ten diagnostic code
billings by Intercommunity Health Network (as per OHA data). In Lincoln County
tobacco smoking leads to $32.1 million being spent on medical care for tobacco-related
illnesses.

ABILITY to IMPACT

Increased access to asthma treatment, medication, and monitoring could significantly
increase control of asthma conditions, resulting in less loss of time at work and school,
increased energy and improved overall health and quality of life.

Policy, education, screening, early diagnosis and prompt treatment including through
smoking cessation, dietary changes and increased physical activity and medication, as
necessary, can lower the rates of cardiovascular disease. For example, policy (e.g., cost
of a pack of cigarettes; indoor clean air laws), reduces smoking rates and thereby rates
of cardiovascular disease.

LEVELS of FOCUS ALREADY OCCURRING

The Lincoln County CHIP offers a series of Living Well with Chronic Diseases workshops
to help people manage their chronic condition (including control of risk factors
impacting the chronic disease: e.g., asthma, tobacco exposure, obesity) (Oregon Smoke-
free Workplace Law & Oregon Tobacco Quit Line 1-800-QUIT-NOW).

ADDITIONAL INFORMATION NEEDED

1) Accessibility to medical treatment for, and monitoring of, asthma
2) Availability of treatment education and self-management strategies for teens in
   schools
3) Percent of adults and teens with asthma currently being treated and routinely
   monitored, and rate of improvement seen by physicians among those treated and
   monitored
4) Lincoln County data is needed for rates of heart disease, stroke, asthma and risk
   factors by age, gender, income, and ethnicity and by city/rural residence.

RECOMMENDATIONS

Facilitate reduction in the incidence and prevalence of Chronic Disease by:
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1) Removing barriers to asthma medication access
2) Facilitating physician monitoring of patients’ medication intake schedule to assure consistent asthma treatment and control
3) Increasing physician referral to community support services and programs for managing chronic diseases and related risk factors
4) Increasing early screening for obesity and overweight, blood pressure and cholesterol, diabetes, respiratory diseases
5) Encouraging public schools to include in their health education curriculum the short and long-term risks of tobacco smoking, physical inactivity, obesity/overweight, diabetes, poor control of lower respiratory diseases
6) Increasing adult access to screening for chronic diseases and making follow-up resources for treatment available
7) Encouraging physicians to include identification of toxic household products used in the home as part of the initial exam

8) Chronic Lower Respiratory Disease can cause Asthma, COPD, Lung Cancer and is exacerbated by smoking, obesity, and decreased physical condition due to exercise. The prevalence of certain risk factors (e.g., obesity, tobacco smoking) in Lincoln County is higher than in Oregon overall and there are effective, evidence-based methods to lower the risk factors. Focus on this Impact Area could reduce associated conditions.

9) Cardiovascular disease should be a top priority because: a. of the high mortality rate (158.5/100k), prevalence (3.9/100k and 3.3/100k, heart disease and stroke respectively) in Lincoln County; b. 91% of adults in Lincoln County have at least one risk factor for cardiovascular disease; the prevalence of certain risk factors (e.g., tobacco smoking) in Lincoln County is higher than in Oregon overall; and c. because there are effective, evidence-based methods to lower the risk factors: tobacco smoking; obesity and overweight; physical inactivity; high blood pressure and cholesterol; and diabetes.

SUPPORTING DATA

1) OHP PATIENTS:

   A. Congestive Heart Failure admission rate for adults >18 yrs. with hospital stay =336.9/100k member years
   B. Adult tobacco users whose doctor discussed or recommended strategies to quit smoking = 22%
   C. Adult patients (>=18 yrs.) with diabetes who had a hospital stay because of a short-term problem from their disease = 192.0/100k member years
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D. Adult patients (>=18 yrs.) with diabetes who got an LDL-C (cholesterol) test = 67.2%
E. Adult patients (18-75 yrs.) with diabetes who got at least one Alcohol blood sugar test = 78.5%
F. Among adults, Lincoln County OHP residents had poor asthma medication ratios compared to the statewide medication ratio
G. The rate of Asthma per 1000 OHP members is 62.3 and 70.8 per 1000 intercommunity health network clients

LINCOLN COUNTY and STATE
1) Mortality

A. Heart Disease is #2 leading cause of death = 158.5/100,000 (higher than OR; lower than U.S.)
B. Stroke 47.7/100k (2020 goal = 33.8)
C. Lung Cancer is the deadliest cancer in Oregon
D. Chronic Lower Respiratory Disease (Asthma, bronchial disease, etc.) is the 3rd highest cause of death in Lincoln County
E. Poorly controlled asthma leads to approximately 50-80 deaths in Oregon each year
F. Asthma costs Oregonians approximately $125 million a year in direct and indirect costs and significantly affects quality of life
G. Asthma affects 11.2% of Lincoln County adults and 25.1% of 11th graders, both of which are higher than in Oregon overall
   Oregon has one of the highest asthma rates in the nation

2) Risk Factors

Ninety-one percent of adults in Lincoln County have at least one of the following risk factors: currently smoke, overweight or obese, physical inactivity, low fruit and vegetable consumption:

3) Tobacco

A. The #1 cause of death in OR; 3,320 people suffer from a serious illness caused by tobacco use
B. 25% of Lincoln County adults smoke cigarettes (OR = 17%; 2020 goal=12.0%)
   8,700 regularly
C. 21.6% of 11th graders smoked in past 30 days
D. 170 people die from tobacco use
E. $32.1 million is spent on medical care for tobacco-related illnesses
F. $28.1 million in productivity is lost due to tobacco-related deaths

4) Weight
A. 37.2% overweight
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B. 26.2 obese
C. Since 1990, Oregon’s adult obesity rate has increased 121%
D. 12.7% 8th graders overweight; 15.2% obese
E. 17.1/11th graders overweight; 11.8% obese

5) **Blood Pressure & Cholesterol**
   A. Overall, 56% of adults in Lincoln County meet the CDC guidelines for physical fitness
   B. Adults with less than a high school education, those earning less than $24,999, and Latinos are less likely to meet CDC physical activity recommendations than their peers.

6) **Diet**
   A. 25.6% of adults consumed 5 servings of fruits and vegetable per day
   B. 22.4% of 8th grade; 19.2% of 11th grade consume at least 5 servings of fruits and vegetables per day

7) **Diabetes**
   A. Prevalence among adults Lincoln County = 8.9%
   B. 9.7% in household with incomes at or below the federal poverty level
   C. 13% for African Americans; 12% for Native Americans; 10% for Latinos

**SOURCES**

1) Lincoln County Health and Human Services. August 2013. Community Health Assessment 2013
2) Oregon Health Authority. May 2013. Quarterly Report: Oregon Health System Transformation
3) Lincoln County, Oregon Asthma Information
4) Oregon Asthma Leadership Plan
5) “Estimated Prevalence and Incidence of Lung Disease,” (American Lung Association)
6) Asthma Management and the Allergist (ACAAI)
   o --Asthma Health Center (WebMD)
   o --“Insurance Coverage for Allergy and Asthma Care” (Allergy & Asthma Center, P.C. Physicians)

**Prepared by:** Linda Fitz-Armstrong, Linda Mollino, Jackie Stankey, Bill Wiist, Karen Wright, Mike Powell, Susan Sturm
HEALTH IMPACT AREA: Chronic Disease

PREVALENCE and POPULATION AFFECTED (See Linn County CHIP pgs. 11-15.)
Almost half of Oregon adults (45%) have at least one chronic disease, and in 2007, chronic diseases caused more than 60 percent of the deaths in Oregon. Heart disease and stroke remain the first and third leading causes of death, accounting for more than 30% of all U.S. deaths. One million Americans are disabled from strokes, and many can no longer perform daily tasks such as walking or bathing without help.

Nearly 26 million Americans have diabetes. An estimated 79 million U.S. adults have prediabetes, which places them at increased risk of developing Type 2 diabetes. Diabetes is the leading cause of kidney failure, nontraumatic lower-extremity amputations, and blindness among adults aged 20–74 years.

Cancer claims more than half a million lives each year and remains the nation’s second leading cause of death. The total number of Americans living with a previous diagnosis of cancer is currently estimated at 11 million.

One of every 3 U.S. adults and nearly 1 of 5 children aged 6–19 years are obese. Obesity has been linked to increased risk for heart disease, high blood pressure, type 2 diabetes, arthritis-related disability, and some cancers.

- An estimated 50 million U.S. adults reported being told by a doctor that they have some form of arthritis, such as osteoarthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. Arthritis results in activity limitations for nearly 21 million Americans.

- A SAMHSA report from April 2012 shows that adults (aged 18 and older) who had a mental illness in the past year have higher rates of certain physical illnesses than those not experiencing mental illness. According to the report by the Substance Abuse and Mental Health Services Administration (SAMHSA), adults aged 18 and older who had any mental illness, serious mental illness, or major depressive episodes in the past year had increased rates of high blood pressure, asthma, diabetes, heart disease, and stroke. (The report entitled, Physical Health Conditions among Adults with Mental Illnesses is based on SAMHSA’s 2008-2009 National Survey on Drug Use and Health (NSDUH) data. NSDUH is an annual nationally representative survey of the U.S. civilian, non-institutionalized population aged 12 or older.)
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Cost: Nationally, 83 cents and 96 cents of Medicaid and Medicare dollars respectively, are spent treating chronic diseases, and hospitalization costs in Oregon for chronic diseases alone are estimated to exceed $2.2 billion a year.

ABILITY to IMPACT
1) Primary prevention can reduce prevalence of chronic disease in the population.
2) Interventions that target those with SPMI with proper supports can reduce costs to the system and increase quality and longevity of people’s lives.
3) Systematic efforts to support patient engagement, compliance and accountability can prevent and reduce chronic diseases. (See results below)

LEVELS of FOCUS ALREADY OCCURRING:
1) IHN pilot project “Hospital to Home”
2) A pilot program has been employed by Samaritan Albany General Hospital to care for heart failure patients. Readmission rates have decreased from 23.6% to 2.6%. This is a multi-disciplinary approach already in place with proven results. According to Heart to Heart, a publication of Samaritan Health Services, “Samaritan Hospitals plan to extend this model of care to other health condition in the near future”. Shawna Wolfe RN special programs coordinator states “it’s about empowering patients with knowledge and tools to best care for themselves.”

RECOMMENDATIONS
1) Primary Prevention: Implement primary prevention strategies to promote health and reduce prevalence of chronic diseases.
2) SPMI: Integrate health screening practices for people with serious and persistent mental illness (SPMI)
3) Traditional Heath Workers: Adopt and implement the case manager/Health Care Coach model tiered system for intervention described below.
4) Recommended model: Expanded role for Case managers / Health Care Coach (Health Care Navigators) and Peer Support Specialists.

The case manager (preferably Registered Nurse) is responsible for patient assessment, development, implementation and coordination of the patients’ plan of care including the medical treatment plan and the evaluation of patient treatment.

The case manager has primary accountability for monitoring patient outcomes. As the team coordinator of the patient care team (including but not limited to: physicians, registered nurses, licensed vocational nurses, technicians, and support and clerical staff), the case manager collaborates, directs, delegates, assigns, guides and serves as a resource to the department and the patient care team for patient care delivery.
The case manager promotes a cooperative working relationship with care team members, physicians, other disciplines and the public by facilitating and enhancing communication, displaying honesty and respect, displaying sensitivity to cultural and age differences, and expressing and accepting feedback in a professional manner.

The process would include a tiered level of care:

**Level 1** being basic follow up and clarification of the education information given to the patient at time of initial contact. This would include a follow up phone call two to three days after consultation to assure RX was filled and treatment plan is being followed.

**Level 2** would be for patients that are at risk of increased complications. In this level the case manager would follow up with contact and referrals if needed to ensure patient has the knowledge of adequate resources and the means to follow the treatment plan. An example of this would be a newly diagnosed diabetic, or an overweight person without chronic symptoms of disease.

**Level 3** would include patients with chronic conditions that are symptomatic and that require repeated medical interventions. This would involve a life coach to help the patient with resources that will increase the success of treatment and compliance with the treatment plan. This is the most intensive level; it will require the case manager to meet with the patient and direct patient compliance. A morbidly obese individual may require a multi treatment team that will include the physician, physical therapist, nutritionist, and a mental health specialist and the patient.

**SOURCES**
CDC website - [http://www.cdc.gov/chronicdisease/states/oregon.htm](http://www.cdc.gov/chronicdisease/states/oregon.htm)

**Prepared by:** Louise Moscato, Paul Barnes, Kathryn Henderson
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**IHNC CCO CAC**

Health Impact Area Recommendations

**APPENDIX D1**

**Maternal Care – Local HIA Recommendation**

**Benton County 2013**

**HEALTH IMPACT AREA:** Maternal health from preconception through postpartum.

**PREVALENCE and POPULATION AFFECTED**

In 2009, 43% of babies born in Oregon were born on Medicaid.\(^1\) Forty-nine percent of pregnancies (38% of births) were unintended\(^4\). Unintended pregnancies present a higher burden to the Medicaid population with 61% of births relating to unintended pregnancy being paid for by Medicaid (2006).\(^4\)

**COST**

Childbirth and delivery is the second highest expense for the CCO ($31 million in 2012).\(^4\)

**ABILITY to IMPACT**

Currently it is common for women to become covered by OHP after getting pregnant and then to cease having coverage six weeks after delivery. With the expansion of Medicaid, there will be more opportunity to focus on maternal care before pregnancy and after delivery as well as during the pregnancy.

**LEVELS of FOCUS ALREADY OCCURRING**

1. Maternal health navigators
2. WIC – national program / County health department
4. Trillium CCO\(^4\) (Lane County) smoking cessation program -- Trillium CCO has started a program involving gift cards as an incentive for pregnant women to quit smoking. It would be worth watching to see how this program goes.
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RECOMMENDATIONS

1) Pre-conception: Adopt the One Key Question initiative.49
2) Make the question “Would you like to get pregnant within the next year?” a standard question for all women of reproductive age. Follow up with either contraception or preconception care as appropriate.

3) Access to prenatal care including health navigators and traditional health worker

4) Support smoking cessation during pregnancy.

5) Postpartum care:
   
   A. Visit with home health nurse within the first few days after birth for screening, lactation support, and parent education.
   
   B. Screening and treatment for postpartum depression.

Prepared by: Emily Mcnulty, Amy Roy, Karen Stephenson 9/13/13
In Lincoln County, one quarter of the OHP population consists of women of childbearing age, and half are children. 23.2% of Lincoln County mothers smoke during pregnancy and there is a spike in youth smoking at the 11th grade. According to the Child Welfare Data book, physical abuse of spouse/fighting and parent/caregiver alcohol or drug use were the top two family stressors in their abuse or neglect reports.

The list below highlights areas where coordinating services across the health spectrum in Lincoln County would result in more beneficial outcomes. We feel Lincoln County has a strong home visiting program run by Lincoln County Health and Human Services. In fact, they have recently started a Nurse Family Partnership program for first time parents. Our Early Childhood Coordinating Council started Coastal Families Together to improve parenting skills, start support groups for families and improve violence prevention interventions. These are all services that exist in Lincoln County and need to be strengthened with IHN-CCO involvement.

PREVALENCE and POPULATION AFFECTED

In Lincoln County, one quarter of the OHP population consists of women of childbearing age, and half are children. 23.2% of Lincoln County mothers smoke during pregnancy and there is a spike in youth smoking at the 11th grade. According to the Child Welfare Data book, physical abuse of spouse/fighting and parent/caregiver alcohol or drug use were the top two family stressors in their abuse or neglect reports.

COST

Consider the following in Lincoln County:

1) Rates of tobacco use, asthma, COPD, ADD, and obesity are higher than statewide rates.
2) $32.1 million is spent on medical care for tobacco-related illnesses
3) $28.1 million in productivity is lost due to tobacco-related deaths
4) Childbirth and Delivery is the highest cost for the CCO in Lincoln County

ABILITY to IMPACT

Use of mandatory screening questions regarding the family environment and exposure to toxins at every clinician visit would improve awareness of the problem while also collecting baseline data for the CCO. Other strategies are currently being used in
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Oregon, for example Lane County has a model in place where they give teen parents incentives to stop smoking. Using this and other innovative interventions would improve maternal and child health in Lincoln County.

LEVELS of FOCUS ALREADY OCCURRING

Current partners include the Health Department and an excellent home visiting program, a parent education program county-wide, the Siletz Tribe, DHS, Lincoln County School District, and clinicians throughout the county.

ADDITIONAL INFORMATION NEEDED

Identify additional information, statistics needed to make decision. Lincoln County has received the Maternal, Infant and Early Childhood Home Visiting (MIECHV) grant to strengthen their home visiting program, family support and early education efforts. We are a rural community with a very high rate (75%) of high risk children, a high school graduation rate of only 63 percent and child abuse is almost double for Lincoln County children compared to Oregon. Twenty-two percent of our children live in poverty and this is disproportionate for children of color.

RECOMMENDATION

Improvements to this HIA will have a wide range of health benefits to the community – from reduction in low birth weights, reduction in early onset of smoking, reduction in cancer rates, and improved productivity, to name a few.

For example, while tobacco use is listed as the leading cause of death of Oregonians, our CCO members use tobacco at a rate 40% higher rate than the rest of OHP members. Even so, only 25% of those surveyed in Lincoln County thought tobacco use was a major problem. We believe a priority should be early tobacco prevention – starting with pre-natal interventions.

To improve awareness of the problem, a simple intervention could be to require all direct service providers to ask questions regarding the family environment, access to care, and their exposure to environmental toxicants (insecticide and herbicide use at home, use of scented cleaning products, second hand tobacco smoke, use of scented personal care products, proximity to agricultural and forestry pesticide sprays, proximity to sources of industrial emissions, proximity to high-use roadways and roadside herbicide sprays, exposure to smoke from outdoor burning or wood stoves, workplace exposures to environmental toxics, etc.).
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We could also adopt a standard of care for helping people quit smoking. The use of an evidence-based intervention for children and adults would be helpful. The Tobacco Prevention Education Program is making progress with smoke-free policies around the County and plans are being implemented to address smoking among adolescents.

SOURCES

1) Child Welfare Data Book,
2) IHN Chronic Condition co-morbidity data
3) Diagnosis cost assessment provided by OHA,
4) The 2013 Community Health Assessment conducted by Lincoln County HHS.

Prepared by: Rebecca Austen, Tom Kerns, Susan Trachsel
HEALTH IMPACT AREA: Reproductive and Perinatal Health

PREVALENCE and POPULATION AFFECTED

Sixty-five percent of female IHN-CCO members are between the ages of 18-44 years old, widely the “childbearing years.” Their health and habits affect the children they bring up. Children make up 56% of IHN-CCO members. In 2009, 43% of babies born in Oregon were born on Medicaid.\(^5\) (Other sources place this number at 47% or 50%.) 49% of pregnancies (38% of births) were unintended\(^50\). Unintended pregnancies present a higher burden to the Medicaid population with 61% of births relating to unintended pregnancy being paid for by Medicaid.\(^6\)

COST

Childbirth and delivery is the second highest expense for the CCO costing almost $31 million in 2012.\(^8\) Neonatal care costs were over $17 million and accounted for the most amount of money billed for in the minor population’s coverage.

Furthermore, setting an example and helping to influence the other CCOs can help with the statewide OHP costs. Resources indicate that there were 19,664 births paid for by Medicaid in all of Oregon in 2009.\(^1\)

With an average hospital birth, attended by OBGYN care costing close to $9,000, this adds up to over $124 Million.

With the cesarean rate being around 30% there were 5,899 surgical births costing on average more than $13,000 adding up to over $76 Million.

This totals to over $200 Million in childbirth expenses paid for by OHP in 2009

These costs do not reflect additional anesthesia used for most births and cesarean births as they are billed separately. This also doesn’t reflect the individual physicians’ costs, or infant care costs.\(^2\)

We also know that since then, economic impacts have increased the amount of women and children on OHP, so we know that the number has increased.
ABILITY to IMPACT

The ability to impact this is HUGE. Because of the work that several nonprofit organizations have done, gathering studies and creating Health Improvement tool kits. Corporations and individual physicians can learn ways to reduce the use of costly interventions and create a mother-baby centered model of care that will improve outcomes, reduce the cesarean rate and lead to other health improvement outcomes that will be part of preventative medicine.

LEVELS of FOCUS ALREADY OCCURRING

There are many potential partners in improving the quality of care, creating patient centered models and reducing costs already in place in our communities.

Another way of partnering with professionals is to promote the hiring of Certified Nurse Midwives into already existing practices so that the OBGYNs are working with only high risk mothers.

Last year, the Legislature passed House Bill 3311, which required the Oregon Health Authority to investigate how Doulas and other Community Health Workers could improve the birth outcomes of underprivileged and underserved women. Hiring Doulas as part of hospital staff or assistants to OBGYN and CNMs to attend the labors of women is a way that intervention use could be decreased, with doulas charging in the range of $300-$1000 per birth and interventions costing several thousands of dollars, the cost savings could be tremendous. A recent study showed specific results in Medicaid recipients that showed a 40.9% lower risk of cesarean in births in the Medicaid population that were attended by a doula.

Utilizing WIC and Healthy Start are other ways to make sure each Mother on OHP is truly getting what is available to them to help their families.

Albany General Hospital is already working on a Pilot program for postpartum depression called Hope For Mothers that is a group for new moms to find support for emotional and mental health issues that they often face.

ADDITIONAL INFORMATION NEEDED

Contraception and family planning are easily handled by Nurse practitioners and midwives as well as PCPs. Making it a point at every appointment to ask a woman if she is planning on having a baby or needs contraceptive information is a way to help prevent unwanted pregnancies. However, many of the people who have unwanted
pregnancies don’t see their PCPs regularly so providing outreach services that offer free contraceptive is very important. There is currently no place in Lebanon to get free condoms, whether there are places in other parts of Linn county who do offer them has yet to be determined. Family Planning seminars that are free to the public are also a way to educate and empower consumers. Catching health habits, like nutrition and exercise, and to some extent for a smaller portion of the population, drugs and smoking, during pregnancy will help mothers and also help their babies. This is something that can be handled with proper prenatal care and maternal health workers.

The current cesarean rate across the country is 35%. The WHO recommends it be no higher than 15% in developed countries. The recommendations provided are a direct attempt at lowering the cesarean birth rate.

Breastfeeding reduces the chances of breast cancer in the mother and reduces the chances of obesity, diabetes, and heart problems in children and also reduces the incidence of behavioral problems and contributes to higher IQs in children.

RECOMMENDATIONS

This should be a top priority for the CHIP because it has the potential to reduce cost by millions of dollars, create better health outcomes, improve the quality of care, increase the potential for preventative care, and impact a large amount of people on OHP in our area.

1) **Maternal Health Navigators** who are assigned to each pregnant woman that can help them with education and navigating the professionals that each woman would need to see depending on her treatment plan. This would increase the amount of prenatal and post-partum care a mother receives which might increase their success in moving towards better diet, making sure they are screened for mental health needs, provide avenues for smoking cessation, and provide lactation services in the home of the family to increase the success rate of breastfeeding. Providing postpartum care in the homes of new mothers also allows for a better assessment of mental health conditions and can catch postpartum depression early on. Many mothers who suffer from PPD will often not tell a medical provider out of fear or shame so having someone in the home can help assess the situation differently and may catch some of the more prolonged and severe cases.

2) Providing access to **childbirth and parenting classes** through this program can enhance the consumers’ personal empowerment by giving them instruction and resources for common issues that might take up time of the doctors and can prevent
forming habits that could later turn into physical and behavioral/mental health problems down the way.

3) Remove the barriers preventing consumers from choosing an out of hospital birth with the licensed provider of their choosing by accepting billing from out of network providers or modeling an existing plan (e.g., the Willamette Valley Health CCO). This provides a safe and cost effective alternative to hospital births for low risk mothers that allow for minimal interventions and privacy which are reasons mothers chose to birth out of hospital, according to women surveyed in 2009.

4) **Provide scholarships and loan forgiveness opportunities** to increase the amount of Certified Nurse Midwives in our area so that they can provide primary reproductive care to women freeing up the OBGYNs to work with high risk women. Utilizing the skills of midwives in and out of hospitals will reduce the costs and provide preventative care in the process by lowering the amount of interventions that lead to higher incidences of Cesarean births. Cesarean births are associated with an increased risk of maternal morbidity and mortality with the current and future deliveries, increase risk of NICU stays for infants and lower incidence of breastfeeding.

5) Develop a **Doula Program** that will be implemented in Samaritan hospitals to reduce the length of labor, prevent intervention use, and create a more satisfying experience for mothers and families on IHN-CCO.

6) As part of prenatal care, mothers should be receiving dental healthcare as poor dental hygiene is related to miscarriages, early birth and low birth weight.

7) **Condom and other contraception** methods should be available to people for free and anonymously through different programs targeting youth and underprivileged groups. Reducing teen and unwanted pregnancies can cut costs to the CCO and provide better long term outcomes for families.

**SOURCES**

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5) Katy Backes Kozhimannil, Rachel R. Hardeman, Laura B. Attanasio, Cori Blauer-Peterson, and Michelle O’Brien. *Doula Care, Birth Outcomes, and Costs Among*

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Attachment 10: CHAs and CHPs
Appendix A: HIA Recommendation Document

IHN-CCO CAC
Health Impact Area Recommendations

http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2012.301201


Prepared by: Kaire Downin, Emily McNulty, Amy Roy, Karen Stephenson
**Appendix A:** HIA Recommendation Document

**IHN-CCO CAC**

Health Impact Area Recommendations

**APPENDIX E**

**Acronyms from overall recommendation** (local recommendation acronyms not included)

CAC – Community Advisory Council  
CHA – Community Health Assessment  
CHIP – Community Health Improvement Project  
HIA – Health Impact Area  
OHP – Oregon Health Plan  
IHN-CCO Intercommunity Health Network Coordinated Care Organization
Appendix B – CAC Goal Recommendation Document

IHN-CCO Community Advisory Council
Community Health Improvement Plan 2014
Goal Recommendations
March 3, 2014

EXECUTIVE SUMMARY

The Intercommunity Health Network Coordinated Care Organization (IHN-CCO) Community Advisory Council (CAC), through a Community Health Assessment (CHA) process, based on their three County CHAs and Community Health Improvement Plans (CHIPs) have prioritized 14 goals for inclusion in the IHN-CCO’s 2014 CHIP.

BACKGROUND

Health Impact Area (HIA) Recommendations

The primary task assigned to the IHN-CCO CAC by Oregon Senate Bill 1580 is “overseeing a community health assessment and adopting a community health improvement plan to serve as a strategic population health and health care system service plan for the community served by the coordinated care organization; and annually publishing a report on the progress of the community health improvement plan.” The first report is due July 1, 2014.

After four months of intensive work, in October 2013, the IHN-CCO CAC submitted a Health Impact Area (HIA) Recommendation document to the IHN-CCO. The HIA recommendations serve as the CAC’s first Community Health Assessment (CHA), and while they prioritize the needs of IHN-CCO members, they are based on the three more extensive County CHAs.

The Health Impact Areas are:

1) Access to Healthcare
2) Behavioral Health
3) Chronic Disease
4) Maternal & Child Health

Within the four HIAs, the CAC included a total of forty-five goal recommendations. While none have been eliminated for inclusion in future CHIPs, the CAC has prioritized 1 - 5 goals per HIA for a total of 14 priority goals for the 2014 CHIP.

CAC CHIP WORKGROUP PROCESS

To prioritize 4 - 16 goals for IHN-CCO’s 2014 CHIP, a workgroup was appointed by the CAC Chair. The CAC CHIP Workgroup is composed of members from each of the three counties and includes both IHN-CCO member and community representation. In the months of January and February 2014, the workgroup met seven times and was staffed by the Oregon Health Authority Innovator Agent, the CAC Coordinator, and the IHN-CCO CEO.

To facilitate discussion, recommendations were grouped by common theme to form 25 focus areas. These were then narrowed to 13 focus areas through a combined numerical ranking system. In preparation for identifying strategies to meet the goals of the CHIP, IHN-CCO created a grid of current and proposed programs corresponding to the selected focus areas.

The remaining goals were prioritized via a nominal voting process. Each member voted for their choice of two goal priorities in each of the four HIA. This narrowed the workgroup down to 13 goals. The workgroup then returned to the HIA Recommendation document and combed through the original 45 goals to make certain that no high priority goals had been missed for inclusion in the first CHIP. Through this process, the group made a few minor changes to the original goals to further clarify them and bring them into alignment with some of the goals that were not prioritized for this first CHIP. Also, one additional goal was picked up, bringing the total to 14.

In anticipation of including youth related improvement plans in future CHIPS, the group changed the name of the Maternal and Perinatal Health HIA to Maternal and Child Health.

The group then looked at each of the 14 goals and, where needed, further defined them. For example, the first Access to Care goal is adequate provider capacity for primary care, dental health, mental health, and substance abuse. The CAC understands that the CCO is required by the State to meet certain provider capacity standards. The CAC is interested in digging deeper than those requirements and looking to improve how quickly members are seen by their healthcare provider, increasing new enrollee engagement, and making efforts to ensure that IHN-CCO has the capacity to provide culturally sensitive care that meets its members’ language and health literacy needs.

CHIP 2014 GOAL RECOMMENDATIONS

1) Health Impact Area: Access to Care

   A) Goal 1: Adequate provider capacity for primary care, dental health, mental health, and substance abuse.

       i) IHN-CCO Members seen by their healthcare providers in a timely manner.

ii) New enrollee engagement

iii) Availability of culturally sensitive care, particularly in the areas of language and health literacy

B) Goal 2: Utilize and expand programs for all types of Traditional Health Workers and Health Navigators.

C) Goal 3: After-hours service availability. Expand normal clinic hours/days for Primary Care and Behavioral Healthcare.

2) Health Impact Area: Behavioral Health

A) Goal 1: Focus on child and youth wellbeing regarding substance abuse and mental health.

i) Youth engagement and leadership

ii) Education and prevention such as Mental Health First Aid and Linn Together (mentalhealthfirstaid.org and linntogether.org)

B) Goal 2: Stigma prevention, education, and outreach to increase general community awareness, understanding, and the reduction—if not elimination of—stigma.

C) Goal 3: Build upon the strengths of local mental health and addiction resources, including locally available urgent behavioral healthcare for children, adults, and families.

D) Goal 4: Assure adequate and easily accessible community based residential resources with active treatment service supports

i) Detox

ii) Crisis respite care

E) Goal 5: Achieve functional integration with primary care through a “health home” model or as fits the needs of specific populations of a “behavioral health home.”

i) How does the CCO evaluate whether or not care is being integrated?

ii) How is the implementation of the Health Home model evaluated?

3) Health Impact Area: Chronic Disease

A) Goal 1: Implement primary prevention strategies to promote health and reduce prevalence of chronic disease.
   i) Particularly in areas such as obesity, tobacco use, asthma, environmental toxins.

B) Goal 2: Traditional Health Workers: Adopt and implement case manager/Health Care Coach model tiered system for intervention.

C) Goal 3: Increase access to screening for chronic diseases, including causative factors, and make follow-up services for treatment available.

4) Health Impact Area: Maternal and Child Health

A) Goal 1: Encourage the adoption of the One Key Question Initiative.

B) Goal 2: Provide and increase access to Maternal Health Navigators and Traditional Health Workers, including doulas.

C) Goal 3: Focus on early tobacco use prevention and tobacco cessation during pregnancy.

Acronyms

CAC – Community Advisory Council

CHA – Community Health Assessment

CHIP – Community Health Improvement Plan

HIA – Health Impact Area

IHN-CCO – Intercommunity Health Network Coordinated Care Organization
Appendix C
IHN-CCO, Benton, Lincoln, and Linn Counties’ CHIP Alignment Document
Community Health Improvement Plans (CHIP)  
Benton, Lincoln*, and Linn Counties  
Alignment Document

This document serves to identify common strands and lists priority health issues for both Linn and Benton counties. This document also includes page numbers throughout the document for referring to a county's Community Health Improvement Plan for further information. (e.g. pg. 14)

Common Strands  
Community Health Improvement Plans  
Draft May 17, 2014

*The Lincoln CHIP is in development
<table>
<thead>
<tr>
<th>Common Strands</th>
<th>InterCommunity Health Network CCO (IHN-CCO) Priorities &amp; Strategies</th>
<th>Benton County Priorities &amp; Strategies</th>
<th>Linn County Priorities &amp; Strategies</th>
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</table>
| Access to Healthcare | Access to Healthcare pg. 21  
  • Expand after-hours service availability including normal clinic hours and days for primary and behavioral healthcare.  
  • Ensure that IHN-CCO members are seen by their healthcare provider in a timely manner  
  • Support new IHN-CCO enrollee engagement strategies  
  • Promote the availability of culturally sensitive care, particularly in the areas of language and health literacy  
  • Promote educational opportunities for all IHN-CCO providers and staff on trainings that focus on, but are not limited to, health equity, health literacy, cultural competence, cross-cultural communication, and working with Traditional Healthcare Workers  
  • Utilize and expand programs for all types of Traditional Health Workers (THW), including Community Health Navigators.  
Knowledge of Available Services  
  • Plan and implement the Benton County Assignment and  
  | Access to Healthcare pg. 19  
  • Support implementation of Oregon’s primary care medical home model with a focus on integrating mental, physical and oral health services.  
  • Promote neighborhood and school-based outreach to improve access to and navigation of health and social service systems.  
Knowledge of Available Services  
  • Promote 2-1-1 information line.  
Transportation pg. 9  
  • Improve utilization of alternative transportation modes.  
  • Develop a neighborhood demonstration project that promotes safe, active, and healthy transportation.  
  | Access to Healthcare pg. 15  
  • Maintain and expand Safety Net clinics.  
  • Partner with universities and regional medical school to provide basic preventive care.  
  • Support grassroots organizations such as Linn-Benton Health Equity Alliance to build advocacy and leadership for health equity and social justice among Linn County communities.  
Knowledge of Available Services pg. 18  
  • Promote 2-1-1 information line.  
  • Utilize local media to raise awareness of local services.  
Transportation  
  • Leverage transportation costs across departments/agencies.  
  • Better understand transit needs, services patterns and gaps.  
  |
### Behavioral Health

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</table>
| Engagement Pilot, which includes educating IHN-CCO members on when to call their Primary Care Provider, go to urgent care, or go to the Emergency Department. | Youth Behavioral Health **pg. 23**  
- Conduct outreach, education, and training on bullying/harassment prevention and reporting.  
- Coordinate Suicide Prevention programming.  
Access to Behavioral Health Services **pg. 13**  
- Improve processes for referral and linkage to high quality mental health services  
- Promote evidence-based chronic disease self-management among mental health consumers. | Youth Behavioral Health  
- Maintain and expand the use of "Life Skills" curriculum in schools.  
- Develop social marketing and health communication campaigns that address alcohol use among adolescents.  
- Incorporate messages on parental responsibility and benefits of social host policies in communication strategies.  
- Continue to convene Linn County Youth Council to foster coalition and policy addressing the needs of youth. |
| Youth Behavioral Health  
- Build capacity of IHN-CCO to engage youth in substance use and mental health issues affecting our community.  
- Focus on adolescent suicide prevention using programs such as Mental Health First Aid and Applied Suicide Intervention Skills Training.  
- Provide leadership and education opportunities for youth that focus on prevention.  
- Collaborate with the counties to identify and share youth engagement and leadership best practices.  
- Focus on bringing Wraparound to fidelity to coordinate services and supports for children, youths, and families in all three counties and identify ways to improve and strengthen youth engagement and leadership. | |
<p>| Maintain and expand the use of &quot;Life Skills&quot; curriculum in schools. |
| Develop social marketing and health communication campaigns that address alcohol use among adolescents. |
| Incorporate messages on parental responsibility and benefits of social host policies in communication strategies. |
| Continue to convene Linn County Youth Council to foster coalition and policy addressing the needs of youth. |
| Implement a data-driven mental health improvement plan. |
| Expand options for drug-free housing during treatment. |</p>
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| Access to Behavioral Health Services | • Increase community awareness of the importance of behavioral health issues in our community in order to reduce stigma associated with treatment.  
• Collaborate with community partners to build upon current resources in our region.  
• Assure adequate and easily accessible community based residential resources with active treatment service supports, particularly with regard to detox and crisis respite care.  
• Achieve functional integration with primary care through a “health home” model, or as fits the needs of specific populations, a “behavioral health home.”  
• Increase utilization of Traditional Health Workers, including Mental Health Peer Support Specialists. | | |
<p>| Promote Integrated Health Awareness | • The Linn County Mental Health Awareness Pilot will reduce stigma and promote public understanding of the relationship between physical and mental health. | | |</p>
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<td></td>
<td>health and the eight dimensions of wellness.</td>
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<td>Chronic Disease Prevention</td>
<td>• Chronic Disease <strong>pg. 26</strong> &lt;br&gt; Tobacco Prevention &lt;br&gt; • Implement a three county Tobacco Prevention and Education Program. &lt;br&gt; • Focus on tobacco prevention and cessation during pregnancy &lt;br&gt; Preventative Screening &lt;br&gt; • Increase access to screening for chronic diseases, including causative factors, and make follow-up services for treatment available. &lt;br&gt; Other &lt;br&gt; • Implement and evaluate the process of information sharing to align with an IHN-CCO region Coast to the Cascades Community Wellness Network.</td>
<td>• Obesity Prevention <strong>pg. 5</strong> &lt;br&gt; • Strategically foster opportunities for collaborative and coordinated planning across diverse sectors and institutions. &lt;br&gt; • Initiate cross-sector collaboration to achieve &quot;Health in All Policies&quot; among key sectors including public health, transportation, agriculture, land use, housing, public safety, and education, among others. &lt;br&gt; • Promote the use of Health Impact Assessments to inform decisions on chronic disease prevention, policy and built environment projects. &lt;br&gt; • Leverage funding among key institutional partners to maximize resources and policy opportunities to advance obesity prevention strategies.</td>
<td>• Obesity Prevention <strong>pg. 12</strong> &lt;br&gt; • Support and expand School Wellness Councils. &lt;br&gt; • Promote Coordinated Approaches to Child Health (CATCH) interventions in rural schools and after school programs. &lt;br&gt; • Implement Peaceful Playgrounds in schools. &lt;br&gt; • Educate community on mental, physical, and environmental health issues.</td>
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<td>Tobacco Policy</td>
<td>• Adopt policies on smoke free parks and outdoor areas.</td>
<td>• Preventative Screening &lt;br&gt; • Provide free community screening events. &lt;br&gt; • Promote preventive screening in clinical settings.</td>
<td>• Youth Tobacco Use <strong>pg. 19</strong> &lt;br&gt; • Adopt zoning regulation for tobacco sales that occur near schools. &lt;br&gt; • Promote advertising regulation in proximity to schools. &lt;br&gt; • Strengthen infrastructure for</td>
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<td>Common Strands</td>
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| Maternal, Child, Youth, & Family | Maternal Health *pg. 27*  
- Improve overall Maternal and Child Health and wellbeing, including a focus on preconception needs.  
- Encourage the adoption of the One Key Question Initiative  
- Provide and increase access to Maternal Health Navigators and Traditional Health Workers, including doulas.  
- Focus on early tobacco use, prevention, and tobacco cessation during pregnancy. | Food Insecurity Among Children and families *pg. 1*  
- Educate policymakers on food insecurity research and impact on local children and families.  
- Develop a Community Food and Redistribution Center for local pantries, programs and families.  
- Conduct outreach to address cultural and linguistic barriers that impede access to food programs (e.g. SNAP, WIC, Federal School food programs, etc.) | Clinical support for tobacco cessation.  
- Strengthen clinical tobacco cessation referral pathways that make it easier for patients to access evidence based cessation services.  
- Support and provide training in evidence-based tobacco cessation.  
- Implement tobacco health communication strategies in healthcare venues. |

*Note: pg. 27 and pg. 1 indicate page numbers in the referenced document.*
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<td>Other</td>
<td></td>
<td>Housing Quality pg. 9</td>
<td>Planning and data sharing with CCO partners</td>
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<td></td>
<td></td>
<td>• Conduct a housing needs assessment and inventory of Benton County housing stock.</td>
<td>• Ensure representation of communities experiencing health disparities in healthcare transformation planning in the region.</td>
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<tr>
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<td></td>
<td>• Develop and enforce housing guidelines and codes in Corvallis.</td>
<td>• Establish data sharing pathways between clinical and population health data systems.</td>
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<td>• Implement “Healthy Homes” program to improve indoor environmental quality, advocating for healthy, affordable housing.</td>
<td>• Engage academic partners in research and intervention development.</td>
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Appendix C

Priority Health Issues and Goals

InterCommunity Health Network CCO (IHN-CCO)

Benton County

Priority Health Issue #1: Food Security

Goal 1: Improve access to fresh and healthy food in Benton County.
Goal 2: Improve Utilization of food assistance programs among eligible people in Benton County.

Priority Health Issue # 2: Obesity

Goal 1: Decrease the prevalence of overweight and obesity across the lifespan.
Goal 2: Encourage physically active lifestyles in Benton County.
Goal 3: Reduce the consumption of soda and other sugar-sweetened beverages among youth.

Priority Health Issue # 3: Housing and Transportation

Goal 1: Improve housing quality for all residents in Benton County.
Goal 2: Improve home safety for young children and older adults.
Goal 3: Improve utilization of alternative modes of transportation in Benton County.
Goal 4: Improve safety for pedestrians and bicyclists on public roads in Benton County.
Goal 5: Expand trails, bicycle lanes and connections among all communities within Benton County.

Priority Health Issue # 4: Behavioral Health

Goal 1: Improve mental health and wellbeing among middle school and high school youth in Benton County.
Goal 2: Improve mental health and wellbeing among adults, ages 18 and older, in Benton County.

Priority Health Issue #5: Healthcare and Community Health

Goal 1: Promote overall health and wellbeing in Benton County.
Goal 2: Increase access to health services in Benton County.
Goal 3: Improve the health and wellbeing of women, infants, children, youth, and families.
Priority Health Issue # 1: Chronic Diseases

Goal 1: Reduce the rate of childhood obesity by 5 percent from 27.4 percent to 25 percent by August 2016.

Goal 2: Increase usage, awareness, and advertisement of tobacco cessation options.

Goal 3: Improve preventative screening rates for everyone. Increase rate of cholesterol checks (68.1%), mammograms (77.4%), colonoscopies (57.9%), and PAP smears (83.3%) at recommended intervals by 10 percent from current baseline by August 2016.

Goal 4: Improve Chronic Disease program use. Increase average attendance and use by 25 percent by August 2016 from current baseline numbers.

Priority Health Issue #3: Tobacco Use

Goal 1: Reduce use and initiation of tobacco among children, adolescents, and young adults. Reduce tobacco use in 11th graders by 5 percent from 23 percent to 21 percent by August 2016.

Goal 2: Increase healthcare provider involvement in tobacco cessation. Increase the number of providers using the quit-line referral process by 25 percent by August 2016.

Goal 3: Increase the number of tobacco-free parks and outdoor areas.

Priority Health Issue #4: Substance Abuse

Goal 1: Continue work to delay initial onset of youth alcohol use. Reduce the number of 11th graders who report drinking at least one drink of alcohol in the past 30 days by 5 percent from 34.6 percent to 32.8 percent by August 2016.

Goal 2: Maintain and enhance, with reduced funds, transportation options for access to treatment services.

Goal 3: Complete a community health improvement plan for substance abuse prevention and treatment by March 2013, in alignment with the county biennial implementation plan for mental health and substance abuse services and InterCommunity Health Network Coordinated Care Organization (IHN-CCO) Community Health Improvement Plan.

Appendix C

InterCommunity Health Network CCO

Priority Health Issue # 1: Access to Healthcare
Goal 1: Ensure adequate provider capacity for primary care, dental health, mental health, and substance abuse for IHN-CCO members
Goal 2: Promote the availability of culturally sensitive care, particularly in the areas of language and health literacy
Goal 3: Expand after-hours service availability including normal clinic hours and days for primary and behavioral health

Priority Health Issue # 2: Behavioral Health
Goal 1: Increase child and youth wellbeing
Goal 2: Reduce stigma associated with diagnosis and treatment of behavioral health issues in order to improve access and appropriate utilization of services
Goal 3: Expand service options for behavioral health treatment for children, youth, adults, and families

Priority Health Issue # 3: Chronic Disease
Goal 1: Implement primary prevention strategies to promote health and reduce prevalence of chronic disease, particularly in areas such as obesity, tobacco use, asthma, and environmental toxins

Priority Health Issue # 4: Maternal and Child Health
Goal 1: Improve overall maternal and child health and wellbeing, including a focus on preconception needs

The Lincoln County plan is in development
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Community Health Improvement Plan
Addendum – January 2016

Stronger, healthier, together.
Project Team
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Benton, Lincoln, & Linn County Local Advisory Committees to the CAC
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Lauren Zimbelman, MPH
Peter Banwarth, MS
Cynthia Solie, MURP
SECTION 1: INTRODUCTION

NOTE: An acronyms list and a glossary of terms are listed on pages 12-14.

Document Purpose

This document serves as a refinement of the InterCommunity Health Network Coordinated Care Organization’s (IHN-CCO) 2014 Community Health Improvement Plan (CHIP). It summarizes the work of the Community Advisory Council (CAC), and its local advisory committees, since the CHIP’s publication in July 2014. This work focused on clarifying the intentions of the goals identified in the CHIP by identifying priority outcomes and potential indicators.

For the purposes of the CHIP, outcomes and indicators are defined as follows:

Outcomes are results, changes, or improvements that come about from a program, such as changes in knowledge, awareness, skills, attitudes, opinions, aspirations, motivation, behavior, practice, decision-making, policies, social action, condition, or status. Outcomes are a standard of some level of success.

Indicators are measurements or data that provide evidence that a certain condition exists, or certain results or progress toward improvements have or have not been achieved. Indicators measure the level of success or lack of success a program has had in achieving an outcome. These indicators serve to further clarify and define their related outcomes.

IHN-CCO Community Health Improvement Plan

The 2014 IHN-CCO CHIP identified the following Health Impact Areas (HIAs): 1) Access to Healthcare, 2) Behavioral Health, 3) Chronic Disease, and 4) Maternal and Child Health. For an in depth understanding of this work, refer to the CHIP and the 2015 CHIP Progress Report.

The CHIP’s Impact on Healthcare Transformation

According to Oregon Senate Bill 1580, the CCO CHIPS, adopted by their Community Advisory Councils, should “serve as a strategic population health and healthcare system service plan for the community served by the CCO.”

Examples of how the IHN-CCO CHIP is used for strategic planning include:

1. **Pilot Project Prioritization**: In the evaluation of pilot project proposals, projects must fit within one of the four CHIP Health Impact Areas (HIAs). Additionally,
the CCO and community partners intend to use the outcomes identified in this document to further prioritize pilot project funding.

2. **Health Equity**: The IHN-CCO Health Disparities Workgroup will use the outcomes as a guide in their effort to identify and address health disparities.

**CHIP Outcomes and Indicators Identification**

Identification of priority outcomes and indicators is crucial to the CCO’s and the CAC’s ability to evaluate and report on CHIP progress. Since November 2014, much of the work of the CAC and its local committees has focused on answering the questions, “What would success look like, and how will we know when we get there?” To that end, the CAC identified a set of outcomes and indicator concepts for each of the CHIP’s Health Impact Areas (HIA).

**Local Committees’ Recommendations**

In November 2014, The CAC asked the three local advisory committees to split up the work of identifying potential CHIP outcomes and indicators. The work was divided as follows:

- **Benton County**: Behavioral Health
- **Lincoln County**: Chronic Disease
- **Linn County**: Access to Healthcare and Maternal & Child Health

Working independently, the committees spent hundreds of hours to complete their task. In September 2015, the CAC received each committee’s recommendations. Combined, these recommendations included 32 outcomes and 113 indicators.

**Outcomes & Indicators Workgroup**

Once the recommendations were received and reviewed by the CAC, the CAC chair appointed three representatives from each county to the Outcomes and Indicators (O&I) Workgroup. The workgroup’s task was to use these recommendations to identify three to five outcomes per HIA and a short list of relevant potential indicators.

The nine-member O&I Workgroup met six times for a total of 18 hours. Their work was supported by the CAC Coordinator, an independent meeting facilitator, the Regional Health Assessment epidemiologist, an Oregon Health Authority Innovator Agent, and the IHN-CCO Chief Executive Officer.

Major tasks performed by the workgroup:

1. Established a process and work plan for identifying priority outcomes and indicator concepts
2. Discussed data availability information provided by the epidemiologist (who updated and refined this information throughout the identification process)
3. Agreed to a set of factors or values for consideration when identifying priority outcomes and indicator concepts, which included:
   a. Impact on IHN-CCO members, healthcare system transformation, and prevention/community health
b. Data availability and reasonableness of data request  
c. Support for innovation  
d. Short term versus long term goals  
e. Opportunity to merge outcomes/remove redundancies  
f. Number of providers/others who could impact outcomes  
g. Honoring the work of the local committees and the CHIP  

4. Based on the Linn County recommendation, divided Maternal & Child Health into two separate HIAs: Child Health and Maternal Health and agreed to recommend to the CAC that, moving forward, these be two separate HIAs in the CHIP.  

5. Moved all child‐related behavioral health goals, and their associated outcomes and indicators, from the CHIP’s Behavioral Health HIA to the Child Health HIA  

6. Identified 16 priority outcomes  

7. Identified indicator concepts for each of the 16 priority outcomes  

8. Tasked the CAC Coordinator with writing the CHIP Addendum  

9. Met to discuss the CHIP Addendum and prepare for presentation to the CAC
SECTION 2: PRIORITY CHIP OUTCOMES AND INDICATOR CONCEPTS

Introduction to the Outcomes and Indicator Concepts

The CHIP outcomes listed in the table on the following pages, as written, are broadly defined. Broad definitions serve as guidance to allow those who use them the flexibility to do their work innovatively and in a way that fits within the context of their particular work or expertise.

For example, the first Access to Healthcare outcome, “Increase the percentage of members who receive appropriate care at the appropriate time and place” is broadly defined. What is appropriate care, an appropriate time, or an appropriate place varies greatly across contexts. Even the term, IHN-CCO member, is broadly defined and may, for some improvement efforts, refer to all members, or members who are under age 18, or members of a subpopulation at greater risk of health disparities, etc.

The recommended indicator concepts also serve to more specifically define their related outcome. For example, indicators that include “length of time from enrollment to first appointment” or “trauma-informed care” are indicators that may measure, and therefore define, progress toward its related outcome. These carefully selected indicators are labeled as “Indicator Concepts” in recognition of the fact that they are, or can be, either more or less broadly defined than as worded below. For example, a “rate” may be stated as an indicator, but a “percentage” may be what is available or even preferable; or, general rates of child injuries may be unavailable, while something more specific to recreation or auto collisions may be available.

Future Focus Areas

In working to reform healthcare and achieve the triple aim of better health and better care at lower costs, the state of Oregon and the Coordinated Care Organizations have taken on a momentous task. To make progress toward the triple aim, areas of focus must be identified, innovations explored, changes made, and progress measured. This takes time and patience. Everything cannot be done all at once. For that reason, the CHIP prioritized some areas of focus ahead of others. In the future, the CAC and its local committees will reevaluate their work and list areas for future consideration, particularly in the areas of social determinants of health, health equity, and the integration of healthcare. The following outcomes and indicator concepts are listed in no particular order and are organized by their alphabetically listed Health Impact Area.
# Outcomes & Indicator Concepts

## Access to Healthcare

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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| **A1: Increase the percentage of members who receive appropriate care at the appropriate time and place.** | a. Length of time from enrollment to first appointment  
  b. Length of time from appointment request to appointment for behavioral, physical, and oral health services  
  c. Trauma-informed care, such as Adverse Childhood Experiences (ACEs) and resiliency measures  
  d. Appropriate preventive care for all ages |
| **A2: Increase the percentage of members who receive care communicated in a way that ensures that they can understand and be understood by their care providers, and that they are effectively engaged in their care.** | a. Percentage of members who report that they receive care communicated in a way that ensures that they can understand and be understood by their care providers, and that they are effectively engaged in their care  
  b. Percentage of members who access user-friendly, certified language interpreter services |
| **A3: Increase the percentage of members who have safe, affordable housing.** | a. Number of homeless persons  
  b. Number of homeless students  
  c. Percentage of members who have stable housing upon discharge from hospital or emergency department visit  
  d. Percentage of residents with high housing costs  
  e. Percentage of members who have safe housing |
# Outcomes & Indicator Concepts

## Behavioral Health

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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| **BH1:** Increase community awareness that behavioral health issues are normal and widely experienced. | a. Exposure to behavioral health information and self-care skills in health services, schools, and after-school programs  
b. Availability of programs to train primary care and other health care providers and community members to understand behavioral health  
c. Efforts made to inform communities about behavioral health through media exposure and other information  
d. Peer-delivered education about behavioral health |
| **BH2:** Increase the expertise of primary care providers who work with people who may have behavioral health needs in order to reduce stigma and improve access and appropriate utilization of services. | a. Number of primary care providers who have exposure to behavioral health education, information, and Continuing Medical Education (CME)  
b. Co-located primary care and behavioral health providers  
c. Percentage of members who receive behavioral health services, screenings, and referrals in primary care settings |
| **BH3:** Increase behavioral health screenings, services, referrals, and peer and parent support in schools and other community venues. | a. Percentage of members who receive behavioral health services, screenings, and referrals in venues other than traditional medical facilities  
b. Numbers of certified Peer Support Specialists accessible to members in venues other than traditional medical facilities  
c. Rate of suicidal ideation, attempts, suicide, and/or self-harming behavior |
### Child Health

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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| CH1: Increase the percentage of children, and families—particularly those with identified risk factors—who are empowered in their health, who partner with their healthcare provider, and who set their goals and follow through on those goals. | a. Percentage of at-risk children and families who have access to advocacy services such as CASA, LGBTQIA support, OFSN, Youth MOVE, and DHS-Child Welfare.  
   b. Percentage of children ready to learn when they enter school            |
| CH2: Decrease the rate of childhood injuries.                             | a. Rate of injuries and mortality attributable to inadequate medication safety  
   b. Proper use of child safety equipment such as car seats, seat belts, and safety helmets  
   c. Child abuse and neglect rates  
   d. Child injury rates  
   e. Percentage of members with safe housing                                   |
| CH3: Increase breastfeeding rates.                                        | a. Percentage of women who receive lactation counseling and support during pregnancy and following childbirth  
   b. Percentage of women breastfeeding at 6 and 12 months  
   c. Percentage of women who can conveniently pump breast milk at work  
   d. Number of certified Baby Friendly Hospitals |
Outcomes & Indicator Concepts

### Child Health, Continued

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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| CH4: Increase integration of behavioral health care as part of routine primary pediatric care. | a. Occurrence of care coordination between primary care and behavioral health providers when working with children, youth, and families, including consultations and referrals.  
   b. Number of regular behavioral health screenings occurring for pediatric IHN-CCO members  
   c. Utilization of trauma-informed care, such as Adverse Childhood Experiences (ACEs) and resiliency measures  
   d. Oregon Psychiatric Access Line about Kids (OPAL-K) utilization |

### Chronic Disease

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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</thead>
<tbody>
<tr>
<td>CD1: Increase the percentage of members who have their asthma under control.</td>
<td>a. Urgent care and emergency department visits, and hospitalizations for asthma</td>
</tr>
</tbody>
</table>
| CD2: Increase the percentage of members who are physically active and/or maintain a healthy diet. | a. Percentage of members who eat the recommended daily amount of fruits and vegetables  
   b. Percentage of members who are obese or overweight  
   c. Percentage of member who have Type II diabetes  
   d. Percentage of members getting the recommended amount of physical activity |
| CD3: Reduce the percentage of members who use and/or are exposed to tobacco. | a. Tobacco prevalence (2016 Quality Incentive Metric), including tracking prevalence among members who are under age 18, pregnant, or who are a member of another at-risk group  
   b. Use of cessation resources and tools |
## Outcomes & Indicator Concepts

### Maternal Health

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<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts</th>
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| **MH1: Reduce the rate of unplanned pregnancies.** | a. Effective contraceptive use among women at risk of unintended pregnancy (Quality Incentive Metric)  
  b. Effective contraceptive use among men  
  c. Percentage of pregnancies that are unplanned, including data by age, ethnicity, and race  
  d. Use of the One Key Question |
| **MH2: Increase the percentage of women of childbearing age who receive early and adequate pre-conception and prenatal care and who connect with appropriate resources throughout their pregnancy.** | a. Timeliness of prenatal care (Quality Incentive Metric), including oral health care (care initiated in first trimester)  
  b. Behavioral health screenings and access to treatment with a behavioral health provider  
  c. Percentage of pregnant members with a healthy weight gain during their pregnancies.  
  d. Percentage of infants with low birth weight or premature birth  
  e. Utilization of traditional health worker services by pregnant women |
| **MH3: Increase the percentage of women, infants, and families—particularly those with identified risk factors—who access postpartum care and support.** | a. Percentage of women who attend postpartum follow-up visits  
  b. Percentage of women who receive preventive dental care postpartum  
  c. Percentage of postpartum members who receive a mental health and substance abuse screening and are referred to treatment if necessary.  
  d. Percentage of postpartum members who are contacted by their provider if they do not attend a follow-up visit |
SECTION 3: Acknowledgments and Affiliations

Identification of priority outcomes and potential indicators for the IHN-CCO Community Health Improvement Plan was a collaborative effort of the many community members, organizations, and providers with a commitment to improving the health of IHN-CCO members. Listed below are the organizations represented by individuals who worked on the Improvement Plan, either as a Community Advisory Council Representative, as a member of a Local Advisory Committee to the CAC, or within a professional role within the system of healthcare.

- Addiction Prevention and Recovery Committee of Lincoln County
- Albany InReach Services
- Benton County Health Services
- Court Appointed Special Advocates of Linn County
- Childhood Obesity Coalition, Lincoln County
- Children & Families Rural Community Registered Nurse
- Children's System of Care Wraparound Initiative Regional Steering Committee, IHN-CCO
- Chronic Care Committee, Lincoln County
- Coast to Cascade Wellness Coalition
- Lincoln County Commissioner Bill Hall
- COMP NW - Center for Lifestyle Medicine
- COMP NW Medical Education
- Corvallis Community Services Consortium
- Corvallis School District
- Emergency Food & Shelter Program
- Faith Community Nursing Coordinator, Lincoln County
- Foster parents
- Health & Human Services Directors of Benton, Lincoln, and Linn Counties
- Health Care for all Oregon
- Helping Homeless or near Homeless Veterans & Families
- Homeless Enrichment and Rehabilitation Team board member
- Hospital District Boards for North Lincoln and Pacific Communities
- InterCommunity Health Network CCO
- Lincoln Community Health Centers
- Lincoln County Health & Human Services
- Lincoln County Public Health Advisory Committee
- Linn County Department of Health Services & Public Health
- Linn County Public Safety Coordinating Council
- Linn-Benton Health Equity Alliance
- Linn-Benton Housing Authority
- Mental Health Advisory Board, Linn County
- Mental Health Advisory Committee, Lincoln County
- Mental Health, Addictions, & Developmental Disabilities Advisory Committee, Benton Co.
- Mid-Valley Health Care Advocates
Mid-Valley National Alliance on Mental Illness
North Senior Connections, Lincoln City
New Roots Housing
Northwest Parish Nurse Ministries
Obesity Prevention Coalition, Linn County
Older Adult Behavioral Health Initiative, OHA
Olalla Center for Children and Families, Lincoln County
Oral Health Coalition, Linn County
Oregon Cascades West Council of Governments, Disability Services Advisory Council
Oregon Cascades West Council of Governments, Senior Services Advisory Council
Oregon Coast Community College
Oregon Department of Human Services, Lincoln County
Oregon Family Support Network
Oregon Health Authority Innovator Agent
Oregon Hospice & Palliative Care Association
Parish Nursing Advisory Board, Lincoln County
Physicians for National Health Program
Progressive Options Independent Living Center
Regional Oral Health Coalition
Samaritan Health Services
Samaritan Health Services, Maternity Care Coordinators
Samaritan Pacific Foundation Board
Signs of Victory Ministries
System of Care Wraparound Initiative Steering Committee, IHN-CCO
Trillium Family Advisory Council
United Way Emergency food and Shelter Program, Linn County
United Way of Benton & Lincoln Counties
WILLAMETTE NEIGHBORHOOD HOUSING SERVICES
SECTION 4: ACRONYMS

ACE – Adverse Childhood Experiences
CAC – Community Advisory Council
CASA – Court Appointed Special Advocates
CHA – Community Health Assessment
CHIP – Community Health Improvement Plan
CCO – Coordinated Care Organization
CME – Continuing Medical Education
DHS – Department of Human Services
HIA – Health Impact Area
IHN-CCO – InterCommunity Health Network Coordinated Care Organization
OFSN – Oregon Family Support Network
OHA – Oregon Health Authority, the state agency responsible for OHP/Medicaid
OHP – Oregon Health Plan (Medicaid)
O&I – Outcomes and Indicators
RHA Team – Regional Health Assessment Team
LGBTQIA – lesbian, gay, bi-sexual, transgendered, questioning, intersex, or asexual
SECTION 5: GLOSSARY OF TERMS

**Addendum** – Something that is added to the main or original text.

**At risk** – an individual or group who is more likely, than another individual or group, to experience a problem, such as an illness.

**Baby Friendly Hospital** – Baby Friendly is a World Health Organization and United Nations Children’s Fund initiative to improve breastfeeding support throughout the ward. Baby Friendly is based on The Ten Steps to Successful Breastfeeding (below). A certified Baby Friendly Hospital has successfully met the requirements and been approved by this initiative. iv

**CASA** – Court Appointed Special Advocates—empowered directly by the courts—offer judges the critical information they need to ensure that each child’s rights and needs are being attended to while in foster care. v

**CME** – Continuing Medical Education training credits for physicians. One credit equals one hour of education in a certified training. All Oregon physicians must earn 60 CMEs every two years. vi

**Epidemiologist** – is someone who studies patterns, causes, and effects of health and disease conditions in defined populations and is knowledgeable about relevant data.

**Health Disparity** – A situation where a person or group is more likely (than another person or group) to get sick or have a health related problem because of where they live, or how much education they have, or what race or gender they are, etc.

**HIA** – Health Impact Area: a priority health focus area identified in the CHIP

**Indicator** – A measurement or data that provides evidence that a certain condition exists, or certain results have or have not been achieved. Indicators measure the level of success or lack of success a program has had in achieving an outcome

**Member** – Any individual enrolled in the Oregon Health Plan, whose care is the responsibility of IHN-CCO

**OFSN** – Oregon Family Support Network is an organization with families and youth working together to promote mental, behavioral, and emotional wellness for other families and youth through education, support, and advocacy viii

**OHA** – Oregon Health Authority, the state agency responsible for OHP/Medicaid

**OHA Innovator Agent** – Innovator Agents help CCOs and OHA work together to achieve the goals of health system transformation: better care, better health, and lower costs.
One Key Question (Initiative) – An evidence-based practice to prevent unplanned pregnancies or provide preconception preventive care information to those who are planning to become pregnant in the next year. viii

Opal-K – Oregon Psychiatric Access Line about Kids provides free, same-day child psychiatric phone consultation to primary care providers in Oregon ix

Outcome – Results or changes that come about from a program, such as changes in knowledge, awareness, skills, attitudes, opinions, aspirations, motivation, behavior, practice, decision-making, policies, social action, condition, or status.

Resiliency – The ability to recover

RHA Team – The Regional Health Assessment Team works to coordinate data collection and reporting across Benton, Lincoln, and Linn counties. They are working to create a standard format (a template) for community partners to provide data to support the repeating cycles of community health assessment across the region.

Social determinants of health – Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, and age that affect wellbeing. x

Youth MOVE – a youth led national organization devoted to improving services and systems that support positive growth and development by uniting the voices of individuals who have lived experience in various systems including mental health, juvenile justice, education, and child welfare. xi

SECTION 6: REFERENCES

viii http://www.onekeyquestion.org/, retrieved December 30, 2015
Note to the IHN-CCO Board of Directors:

1. This 2019 Community Health Improvement Plan (CHIP) was adopted by the IHN-CCO Community Advisory Council (March 11, 2019) and endorsed by the IHN-CCO Regional Planning Council (March 12, 2019). The CAC requests that the IHN-CCO Board of Directors approve this CHIP. It will then be submitted to the Oregon Health Authority, in compliance with the requirements of the Oregon Legislature (Oregon Senate Bill 1580 of 2014).

2. Final formatting and copyediting of this document will take place once the IHN-CCO Board votes to approve it. No substantive changes will be made after that approval.

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Chapter 1: Introduction & Overview

Document Purpose

This is the 2019 InterCommunity Health Network CCO (IHN-CCO) Community Health Improvement Plan (CHIP). This document describes the CHIP’s development and purpose. To do this, the document also provides the context and history of IHN-CCO, its Community Advisory Council, the 2014 CHIP, and its 2016 Addendum.

InterCommunity Health Network CCO

IHN-CCO MISSION

IHN-CCO was formed in 2012 by local public, private, and non-profit partners to unify health services and systems for Oregon Health Plan (Medicaid) members in Benton, Lincoln, and Linn counties. In collaboration with its community partners, IHN-CCO works to plan and transform the future of healthcare within its region. IHN-CCO has a demonstrated history of improving the health of our communities while lowering or containing the cost of care. We accomplish this by coordinating health initiatives, seeking efficiencies through blending of services and infrastructure, and engaging all stakeholders to increase the quality, reliability, and availability of care.

IHN-CCO takes the “whole person” approach for the health of its members and supports a continuum of care that integrates mental health, addictions, oral health, and physical health. The IHN-CCO Community Health Improvement Plan, as developed by its Community Advisory Council and approved by its Board of Directors, is instrumental to IHN-CCO strategic planning.

COMMUNITY ADVISORY COUNCIL

Oregon Senate Bill 1580 (2014) requires that all CCOs “must have a community advisory council” (CAC). The primary tasks of the CAC are “overseeing a community health assessment and adopting a community health improvement plan to serve as a strategic population health and healthcare system service plan for the community served by the coordinated care organization; and annually publishing a report on the progress of the community health improvement plan.”
The regional IHN-CCO CAC consists of nineteen representatives (six per county, plus the Chair) and includes twelve IHN-CCO consumer members, three county staff, and three community members. During the development of this CHIP, not all CAC seats were filled. However, a majority of IHN-CCO member representation was maintained throughout the process. In partnership with the CAC, each county has a Local Advisory Committee to the CAC. Regional CAC representatives are required to participate as members of the local meetings. Final recommendations are made at the regional Council level. By having one regional council and three local committees to the council, IHN-CCO increased its:

- **Breadth of Community Input:** The CAC and IHN-CCO have a strong commitment to ensuring that each county community has a distinct voice and ability to influence the process and the strategic planning of the CCO’s healthcare system.

- **Depth of Community Input:** Consisting of nineteen representatives, the CAC is relatively large. Nineteen is the maximum number to realistically include on a council and remain productive. Yet, more input from a greater number of community members is desirable and beneficial to the process. By participating in local advisory committee meetings, the regional CAC representatives, a variety of community partners, and community members who drop in from time to time, work together in the process and create recommendations which are sent up to the IHN-CCO via the CAC.

**IHN-CCO VALUES**

- Stakeholder participation in design and delivery of healthcare
- Prevention, early intervention, and self-care
- Promotion of family health as a means of improving readiness to learn and adoption of lifelong, healthy lifestyles
- Delivering service that is culturally sensitive
- Coordinating care using the patient-centered, primary care, medical-home model, supported by information for medical need and overall health improvement
- Maintaining continuity of care for IHN-CCO members through integration of services within and across providers and patient-support organizations
- Maximizing the appropriate utilization of existing health resources within established protocols
- Achieving positive health outcomes through evidence-based health programs
- Utilizing performance and outcome data to guide design and development of our healthcare delivery systems
- Strengthening community infrastructure to promote healthy neighborhoods
- Health equity
- Addressing the Social Determinants of Health

**IHN-CCO TRANSFORMATION**

IHN-CCO spans the area of Benton, Lincoln, and Linn counties. Our membership includes all Oregon Health Plan (OHP) members in the coverage area. The providers in our partnership range from large multi-region health systems to a number of independent providers, clinics, and non-traditional providers.
IHN-CCO and its community partners embrace a collaboration model called Collective Impact. The five conditions to Collective Impact success are:

- **Common Agenda**: Shared vision for change
- **Shared Measurement**: Collecting data and measuring results consistently
- **Mutually Reinforcing Activities**: Differentiated, while still being coordinated
- **Continuous communications**: Consistent and open communication
- **Backbone support**: IHN-CCO is the backbone organization for the entire initiative and coordinates participating organizations

As the backbone organization, IHN-CCO coordinates and supports many councils, committees, and workgroups. These groups include (and are often chaired by) community partners. Those most relevant to Healthcare systems transformation or the Regional Planning Council, the Delivery System Transformation Committee and several workgroups.

**Regional Planning Council (RPC)**

Public agency and government leaders have come together with private healthcare providers to unify our voice and action in this collaborative endeavor to improve the health of the region. The Regional Planning Council (RPC) is a standing workgroup, charged by the IHN-CCO Board of Directors with planning and coordinating the regional system of health services and supports.

The RPC:
- Serves to guide the development of a regional system of healthcare, firmly grounded in a philosophy of equitable, coordinated, person-centered, and locally delivered healthcare.
- Develops tools and strategies to transform and integrate the system of care
- Recommends funding needed for transformational activities
- Sponsors an effective, innovative quality improvement process to drive positive system change
- Develops, supports, and maintains active communication and involvement with the Community Advisory Council to provide broad community input on the operations and performance of the IHN-CCO
- Recommends and implements measures to ensure the effective continuum of care and care transitions within and between systems
- Provides regular reports to the Board of Directors, including specific requests needing Board approval that support system transformation

**Delivery System Transformation Committee (DST)**

The DST is open to anyone in Benton, Lincoln, and Linn counties that can positively affect the health outcomes of IHN-CCO members. It includes over 55 partner organizations. The DST meets every two weeks, about 25 times per year. Through robust collaboration with dozens of partnering organizations, the DST:
- Provides opportunities for learning and collaboration based on best practices as well as on innovative ideas and efforts
• Supports care teams that work to coordinate care and uses the Patient-Centered Primary Care Home (PCPCH) as the foundation of healthcare
• DST utilizes workgroups, comprised of people working toward a common agenda or strategic plan with a focus on cross-sector collaboration between PCPCHs and community efforts and services
• Approves and oversees transformation pilot projects and IHN-CCO health system transformation
• The current DST workgroups are:
  o Alternative Payment Methodologies
  o Health Equity
  o Social Determinants of Health
  o Traditional Health Workers
  o Universal Care Coordination

Transformation Pilot Projects

As of January 2019, IHN-CCO, through the work of the Delivery System Transformation Committee, has supported 65 pilots, awarding over $20 million in pilot funding to local organizations.

Transformation pilot projects are innovative ideas that implement collaborative strategies with a focus on IHN-CCO members. Pilots align with IHN-CCO goals and Collective Impact process, have described outcomes, and focus on the triple aim of better health and better care at reduced cost. Many pilots focus on creating health equity and addressing the Social Determinants of Health. The priorities in the CHIP and its 2016 Addendum have consistently been used to prioritize pilot projects.
Chapter 2: People and Place

Regional Overview

The InterCommunity Health Network CCO (IHN-CCO) annually serves approximately 71,000 members in the Oregon counties of Benton, Lincoln, and Linn. More than half of IHN-CCO members live in rural areas (approximately 36,900). The region spans nearly 4,000 square miles: In the east, from the heart of western Oregon at the foothills of the Cascade Mountain range, through a portion of the agriculturally rich Willamette Valley—out to and including—sixty miles of Pacific coastline. The diverse region is separated by the Coastal Mountain range, which contributes to some transportation and communication challenges as 25% of the region’s population resides on the Pacific Coast.

The area is predominantly white and poverty levels are high, particularly in Lincoln and Linn Counties. Latinos represent the largest minority population in the region (3,490 IHN-CCO members). The most common language spoken by IHN-CCO members is English. Ninety-four percent list their preferred language as English, 4.6% list Spanish as their primary language, and 2% list they prefer to be communicated in another language.

IHN-CCO members who are disproportionately impacted by disease and illness include those with mental illness and disabilities. Approximately 36% (25,400) of IHN-CCO members have been diagnosed with a mental illness with 16% (11,500) diagnosed with Severe and Persistent Mental Illness (SPMI). Nine percent (6,200) of IHN-CCO members have at least one that limits their ability to work.

IHN-CCO Members by County

Of the 71,000 IHN-CCO members served by IHN-CCO each year, 14,600 live in Benton County; 15,400 live in Lincoln County; and 37,200 live in Linn County (Figure 1).
Figure 1: IHN-CCO Members by County

Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018.

IHN-CCO Membership by City

Within Benton, Lincoln, and Linn counties, IHN-CCO members live in a variety of locations, from urban to rural. The largest proportion of members live in Albany, followed by the proportion of members who live in communities smaller than the six largest cities in the region (Albany, Corvallis, Lebanon, Sweet Home, Newport, and Lincoln City). See Figure 2.
Figure 2: IHN-CCO Membership by City or Smaller Communities

Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018.
Members by Age

Most IHN-CCO members across the three-county region are either ages 26-64 or Less than 1 to age 18. Another 11% are ages 19-25, while 5% are age 65 and older. See Figure 3a.

**Figure 3a: IHN-CCO Member Age ranges**

![Bar chart showing membership by age group]

- **<1 -18 years of age**: 27,684 members (39%)
- **19-25 years of age**: 7,973 members (11%)
- **26-40 years of age**: 15,747 members (22%)
- **41-64 years of age**: 16,434 members (23%)
- **65+ years of age**: 3,612 members (5%)

*Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018*
The age distribution of IHN-CCO members is fairly similar across counties (see Figure 3b). It’s notable that while Lincoln County is often considered to have a higher percentage of retirees overall, for the IHN-CCO Membership, the percent of Members ages 65 and older is very similar across counties at between 4 and 6%. Benton County has a slightly higher percentage of young adults IHN-CCO Members ages 19-24 (14%), while Lincoln and Linn respectively have 9% and 10%. See Figure 3b.

Figure 3b: IHN-CCO Member Age by County

Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018
Race, Ethnicity, and Language

Of IHN-CCO Members who reported their race or ethnicity on their application to join the Oregon Health Plan, the three largest reported race/ethnicities were white (49%), Hispanic/Latino (5%), and American Indian/Alaska Native (1.2%). Individuals who belong to a Native American tribe are able to receive care through the Indian Health Service, and they have the option to choose to join a Coordinated Care Organization. Many members did not report their race or ethnicity (42% of members). See Figure 4.

**Figure 4: IHN-CCO Member Race and Ethnicity**

![Bar chart showing race/ethnicity distribution among IHN-CCO members](image)

*Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018*
Preferred Language

Amongst IHN-CCO members, English is the most common language spoken. That is, 94% indicated their preferred language is English, 4.6% of members listed Spanish as their primary language, and 2% prefer to be communicated in another language. See Figure 5.

**Figure 5: Preferred Language Amongst IHN-CCO Members**

![Preferred Language Amongst IHN-CCO Members](chart.png)

Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018
Social Determinants of Health (SDoH)

In 2018, a small number of healthcare providers began recording information about the social and economic circumstances in which IHN-CCO members find themselves. These circumstances, also known as Social Determinants of Health (SDoH), often impact an individual’s health and well-being. If the negative impacts of people’s circumstances are addressed, this can improve their health outcomes. From the data provided, three issues rose to the top as the most commonly experienced issues related to Social Determinants of Health.

- Problems related to housing and economic circumstances, such as homelessness, housing instability, or poverty
- Problems related to an individual’s primary support group, including family circumstances
- Problems related to upbringing (such as a history of childhood abuse or having been in welfare custody)

Health Status

Forty-six percent of IHN-CCO members have been diagnosed with a chronic health condition. See Figure 6. Thirty-five percent have been diagnosed with a mental health condition. See Figure 7.

Figure 6: Chronic Condition Diagnosis of IHN-CCO Members

Source: 2018 IHN-CCO Member Claims Data
A large percentage of members who have a chronic disease diagnosis are also diagnosed with a mental health condition; this is known as having a co-morbid diagnosis. Nearly a third (29%) of all members are diagnosed with both a mental health condition and a chronic disease condition. See Figure 8.

**Figure 8: IHN-CCO Member Co-Morbid Diagnosis Status**

*Source: Oregon Health Authority, IHN-CCO Membership Data, July 2017-June 2018*
Emergency Department Use

At 22%, substance-related disorders are the condition for which IHN-CCO Members are most often seen in emergency departments within the region.

IHN-CCO Spending by Service Category

The majority of IHN-CCO spending goes to pay for physical health services. It should be noted that many mental health services take place in the primary care/physical care setting and count toward physical health services spending. See figures 9 and 10.

Figure 9: Percent of IHN-CCO Spending by Service Category

Source: 2018 IHN-CCO Member Claims Data
Figure 10: Percent of IHN-CCO Member Service Expenses, Jan – Sept 2018

Source: 2018 IHN-CCO Member Claims Data; DME is Durable Medical Equipment.

We can expect to see changes in spending as provider payments begin to transition to paying for integration and quality. At the same time, it may become more difficult to determine how many mental health or substance use services are provided in alternative settings.
Chapter 3: Community Health Improvement Plan (CHIP)

The 2019 CHIP’s Foundation

The 2019 Community Health Improvement Plan (CHIP) is based on the foundational work of the 2014 IHN-CCO CHIP\(^2\) and its 2016 Addendum\(^3\). This CHIP borrows from and builds upon the Regional Health Assessment\(^4\) and the three county Community Health Assessments of Benton\(^5\), Lincoln\(^6\), and Linn\(^7\) counties.

THE CHIP:
- Serves as a strategic population health and healthcare system service plan for the community served by the coordinated care organization
- Sets initial areas of focus for health improvement while building upon ongoing community knowledge and efforts
- Is a collaborative process that incorporates a broad range of community voices

GUIDING PRINCIPLES OF THE CHIP

IHN-CCO recognizes the following values as guiding principles of this Community Health Improvement Plan:

- **Health Equity:**
  - Pursuing optimal health for all IHN-CCO members:
  - Addressing and preventing potential health disparities due to age, disability, education, gender identity, geographical location, income, race or ethnicity, sex, sexual orientation, etc.
  - Meeting people where they are
  - Developing trust by transparency of purpose
  - Ensuring ease of access to healthcare for all IHN-CCO members
- **Social Determinants of Health**
  - Recognizing that wellness starts in our homes, schools, workplaces, neighborhoods, and communities
  - A commitment to addressing the social determinants of health such as housing, transportation, and access to healthy food
- **Empowerment**
  - Sharing ownership of individual, familial, and population health through:
  - Holistic coordination between our healthcare providers
Active individual participation
Accountability for our own health and that of our families
Creating healthier communities through effective stewardship of resources by ensuring active community engagement in all aspects of our healthcare delivery system.

- Communication, Collaboration, and Coordination is of primary importance for achieving the triple aim of better health and care at lower cost.

THE CHIP INFORMS:
- Decision-making and strategic planning
- Prioritization of resources, particularly Pilot Project funding

CHIP Development Process

LOCAL COMMITTEE RECOMMENDATIONS TO THE CHIP WORKGROUP
In January 2018, the CAC asked its Local Advisory Committees to make recommendations to the CHIP Workgroup on issues to consider in updating the 2014 IHN-CCO CHIP. To be best informed in making their recommendations, the Local Advisory Committees were asked to review several documents including the:
- 2014 IHN-CCO CHIP
- 2016 IHN-CCO CHIP Addendum
- 2017 CHIP Progress Report
- 2015 Linn Benton Lincoln Regional Health Assessment
- A draft of their most recent county health assessment

The Local Committees were asked to hold four meetings over two months in order to discuss data and make their recommendations. The Regional Health Assessment Coordinator participated in those meetings, bringing additional data and analysis from the Regional Health Assessment Epidemiologist, as requested and available. The three committees, using slightly different processes, made the following recommendations for the CHIP Workgroup’s consideration.

Those recommendations were:
- Benton Local Advisory Committee recommendations
  - Social Determinants of Health
  - Adequate nutrition & food security
  - Stress
  - Isolation: elderly and people with disabilities
  - Transportation (rural)
  - Oral Health
  - Sexual health, sexually transmitted infections
Substance use

- **Lincoln Coordinated Healthcare Advisory Committee recommendations**
  - Add Health Impact Areas:
    - Provider supports (including alternative provider)
    - Social Determinants of Health
  - Combine Maternal and Child Health Impact Areas
  - Add outcomes regarding:
    - Addictions
    - Severe and persistent mental illness
  - Review Chronic Disease Indicators (hypertension, coronary obstructive pulmonary disease, cardiac disease, Alzheimer’s, dementia, etc.)

- **Linn Local Advisory Committee recommendations**
  - Social Determinants of Health
  - Health equity
  - Opioids/pain management
  - Access across all systems (technology, # of providers, etc.)
  - Severe and persistent mental illness
  - Rural communities
  - Communicable disease
  - Provider supports (burn out, respite training)
  - Respite care (family and other care providers)
  - Communication, connectivity, collaboration between clinical and social services and law enforcement and emergency preparedness, closed-loop referral.

**CHIP WORKGROUP MEMBERSHIP**

The CHIP Workgroup consisted of nine CAC Representatives/Local Advisory Committee members (three from each county); four current IHN-CCO members and one recent IHN-CCO member. Nine staff support the Workgroup, including the CAC Coordinator, the Regional Health Assessment Coordinator, an epidemiologist, a county health administrator, an Oregon Health Authority Innovator Agent, the CAC Chair, and a meeting facilitator.

**CHIP WORKGROUP PROCESS & RECOMMENDATIONS**

The Workgroup was committed to honoring the work of the 2014 CHIP, the 2016 CHIP Addendum, as well as the Local Advisory Committee recommendations. The group did its best to include everything possible, while keeping the scope manageable.

The CHIP Workgroup met eight times in three months for a total of 24 hours and made decisions via consensus. At this time, the CHIP Workgroup sent a set of proposed CHIP priorities back to the Local Committees, requesting their feedback. The Local Committees provided written feedback. The CHIP Workgroup then met two more times to integrate the Local Committee feedback into their proposed priorities. This was then taken to the CAC for their adoption.
MAJOR TASKS PERFORMED BY THE WORKGROUP:

1. Established a process and work plan for identifying priority Outcomes and Indicator concepts
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations
3. Discussed data availability information provided by support staff and each other (who updated and refined this information throughout the identification process)
4. Agreed to a set of factors or values for consideration when identifying priority outcomes and indicator concepts, which included:
   a. Impact on CCO members, healthcare transformation, prevention, and community health
   b. Data availability and/or reasonableness of data request
   c. Support for innovation
   d. Whether there are others working on the issue; value of including in CHIP as Health Impact Area (HIA), Outcome, or Indicator Concept. This factor was also considered in whether to include certain quality incentive metrics.
   e. Short-term and long-term goals
   f. Forward looking; this is a five-year plan
   g. Opportunity to merge; reduce redundancies
   h. Number of providers or others who could impact outcome
   i. Cost/savings for IHN-CCO and for members
5. Along with the agreed upon factors, the group often considered the CHIP’s ability to impact pilot project prioritization.
6. Agreed that equity, social determinants of health, and care coordination—along with being included throughout the plan—should be included in the 2019 CHIP introduction as guiding principles
7. Agreed on 6 priority Health Impact Areas, 22 Outcomes, 32 Indicator Concepts, and 48 Areas of Opportunity
8. Added Social Determinants of Health and Equity as a priority area, known as Health Impact Area (HIA)
Health Impact Areas, Outcomes, & Indicators

HEALTH IMPACT AREAS

This CHIP identifies six priority areas of focus, called Health Impact Areas, which are:

• Access to Healthcare
• Behavioral Health
• Child & Youth Health
• Healthy Living
• Maternal Health
• Social Determinants of Health and Equity

For each Health Impact Area, the CHIP identifies several Outcomes and Indicators.

• **Outcomes** are results, changes, or improvements that come about from a program, such as changes in knowledge, awareness, skills, attitudes, opinions, aspirations, motivation, behavior, practice, decision-making, policies, social action, condition, or status. Outcomes are a standard of some level of success.

• **Indicators** are measurements or data that provide evidence that a certain condition exists, or certain results or progress toward improvements have or have not been achieved. Indicators measure the level of success or lack of success a program has had in achieving an outcome. These indicators serve to further clarify and define their related outcomes.

Throughout the process, the CAC frequently encountered a lack of available data. For this reason, along with Outcomes and Indicators, the CHIP includes many “Areas of Opportunity.”

• **Areas of Opportunity**, similar to Indicators, further clarify and define their related Outcomes. However, Areas of Opportunity do not currently have readily accessible, good quality data for annually tracking improvement or lack thereof. By including Areas of Opportunity, pilot projects and other initiatives may be prioritized to focus on making improvements and potentially establishing measurements in these areas. Also, the CAC and its Local Committees may invite presentations related to the Areas of Opportunity, and over time data may become available allowing an Area of Opportunity to be elevated to an Indicator Concept.
## Access to Healthcare

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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<tbody>
<tr>
<td>A1: Increase the percentage of members who receive appropriate care at the appropriate time and place.</td>
<td><strong>Indicator Concepts</strong>  &lt;br&gt;a. Length of time from IHN-CCO enrollment to first appointment  &lt;br&gt;b. Length of time from appointment request to appointment for behavioral, physical, and oral health services  &lt;br&gt;c. Trauma-informed care, such as Adverse Childhood Experiences (ACEs) and resiliency measures  &lt;br&gt;d. Appropriate physical, behavioral, and oral preventive healthcare for all ages  &lt;br&gt;<strong>Area of Opportunity</strong>  &lt;br&gt;i. Culture of support for healthcare providers</td>
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<td>A2: Increase the percentage of members who receive care communicated in a way that ensures that they can understand and be understood by their care providers, and that they are effectively engaged in their care.</td>
<td><strong>Indicator Concept</strong>  &lt;br&gt;a. Percentage of members who report that they receive care communicated in a way that ensures that they can understand and be understood by their care providers, and that they are effectively engaged in their care</td>
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<td>A3: Improve integration of oral health services with behavioral and physical health services.</td>
<td><strong>Indicator Concepts</strong>  &lt;br&gt;a. Percentage of members who have a dental visit during pregnancy compared to total percentage of members who have a dental visit  &lt;br&gt;b. Percentage of dental assessments for youths in Department of Human Services custody  &lt;br&gt;c. Percentage of adults with diabetes who access dental care  &lt;br&gt;d. Percentage of Emergency Department visits with a caries-related diagnosis that are followed-up on in a dental care setting</td>
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</table>
Behavioral Health spans a continuum of behavioral disorders including, but not limited to, prevention, diagnosis and treatment of mental health disorders, mental illness, substance use, and addictive disorders. It includes wellness and provides differentiation between lesser behavioral health issues attributed to mental health and more intrusive disorders described as severe and persistent mental illness.¹⁶

<table>
<thead>
<tr>
<th>Behavioral Health</th>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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</table>
| BH1: Reduce stigma and increase community awareness that behavioral health issues are normal and widely experienced. | Indicator Concepts | a. Number of community members, employers, landlords, teachers, elected officials, and service providers (e.g. law officers, firefighters, Emergency Medical Technicians) trained in Mental Health First Aid, or trauma informed care, or other basic mental health awareness training  
b. Peer-delivered behavioral health education and services |
| | Areas of Opportunity | i. Behavioral health stigma within the community  
ii. Community supports in the community to normalize behavioral health issues |
| BH2: Increase the behavioral health expertise of healthcare providers and staff to reduce stigma and improve access and appropriate utilization of services. | Indicator Concepts | a. Oregon Psychiatric Access Line about Adults (OPAL-A) utilization |
| | Areas of Opportunity | i. Members receive behavioral health services, screenings, and referrals in primary care settings  
ii. Co-located primary care and behavioral health providers  
iii. Primary care providers and Emergency Department staff exposed to behavioral health education, information, and Continuing Medical Education |
## Behavioral Health (continued)

<table>
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<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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| BH3: Increase mental health and substance use screenings, services, referrals, and peer and parent support. | **Indicator Concepts**  
  a. Screening, Brief Intervention, Referral to Treatment (SBIRT) rates  
  b. Rates of suicidal ideation, attempts, suicide, and/or self-harming behaviors  
  c. Overdose rates  

**Areas of Opportunity**  
  i. Mental health and substance use services, screenings, and referrals in venues other than traditional medical facilities, including schools  
  ii. Peer delivered education and support  
  iii. Mental health service wait-times  
  iv. Lack of mental health services for those not in crisis |
| BH4: Improve care for members experiencing mental health crisis. | **Areas of Opportunity**  
  i. Quality of mental health care  
  ii. Appropriate care at the appropriate time and place for people experiencing a mental health crisis  
  iii. Time from appointment request to appointment with a mental health care provider  
  iv. Care coordination |
| BH5: Improve care for members experiencing severe and persistent mental illness. | **Areas of Opportunity**  
  i. Non-mental health care (i.e., physical & oral)  
  ii. Continuity of care  
  iii. Ongoing engagement with a behavioral health provider  
  iv. Health equity for this marginalized population  
  v. Stigma reduction  
  vi. Assertive Community Treatment (ACT) |
| BH6: Behavioral health funded and practiced with equal value and priority as physical health. | **Indicator Concepts**  
  a. Implement and report progress on a behavioral health parity plan  

**Areas of Opportunity**  
  i. Number of mental health providers  
  ii. Preventative behavioral healthcare and promotion of general wellbeing |
Child and Youth Health includes health and wellbeing from birth through 17 years of age.

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<tr>
<th>Child &amp; Youth Health</th>
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<tbody>
<tr>
<td><strong>Outcomes</strong></td>
</tr>
<tr>
<td>CY1: Increase the percentage of children, youth, and families who are empowered in their health.</td>
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<tr>
<td>CY2: Decrease child abuse and neglect rates.</td>
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<tr>
<td>CY3: Increase breastfeeding initiation and duration rates.</td>
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<tr>
<td>CY4: Increase integration of behavioral health and oral care as part of routine primary pediatric care.</td>
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Healthy Living includes disease prevention, management, and recovery through nutrition; physical activity; stress prevention, management, and resiliency; good sleep; and responsible behavior. Healthy living greatly reduces a person’s risk for developing chronic illnesses. Healthy Living should not be about “shaming and blaming” but about ensuring that people are empowered to be the healthiest that they can be.

Chronic Diseases are human health conditions of long duration and generally slow progression. Chronic diseases, such as heart disease, stroke, cancer, diabetes, depression, certain mental health and addictions conditions are among the most prevalent, costly, and preventable of all health problems. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention measures—including screening and appropriate follow-up—saves lives, reduces disability, and lowers medical costs.

### Healthy Living

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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<tbody>
<tr>
<td><strong>HL1: Increase the percentage of members who are living a healthful lifestyle.</strong></td>
<td><strong>Areas of Opportunity</strong></td>
</tr>
<tr>
<td>i. Disease prevention, management, and recovery</td>
<td></td>
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<td>ii. Nutrition</td>
<td></td>
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<td>iii. Physical activity</td>
<td></td>
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<tr>
<td>iv. Weight shaming and blaming</td>
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<td>v. Stress</td>
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<td>vi. Sleep quality</td>
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<tr>
<td>vii. Social supports, such as family, friends, and community</td>
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| **HL2: Reduce the percentage of members who use and/or are exposed to tobacco.** | **Indicator Concepts** |
| | a. Tobacco prevalence (Quality Incentive Metric), including tracking prevalence among members who are under age 18, pregnant, or who are a member of another at-risk group |
| | b. Use of cessation resources and tools |

| **Area of Opportunity** | |
| i. Youth introduction to tobacco products | |

| **HL3: Reduce sexually transmitted infection (STI) rates.** | **Indicator Concepts** |
| | a. Sexually transmitted infection rates |
| | b. Expedited Partner Therapy utilization rates |
Maternal Health begins at preconception and continues postpartum. This is the time before, during, and after pregnancy when supportive services enhance a woman’s physical and mental health and wellbeing.

### Maternal Health

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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</table>
| M1: Reduce unplanned pregnancy rates. | Indicator Concept  
| | a. Effective contraceptive use among partners  
| | **Area of Opportunity**  
| | i. Data availability for effective contraceptive use among all members  |
| M2: Increase the percentage of members who receive early and adequate care and support before, during, and after pregnancy. | Indicator Concept  
| | a. Behavioral health screenings and access to treatment with a behavioral health provider  
| | **Areas of Opportunity**  
| | i. Healthy weight gain during pregnancy  
| | ii. Utilization of postpartum care and support  
| | iii. Partner education and involvement  |
Social Determinants of Health\textsuperscript{19} (SDoH) are the social, economic, political, and environmental conditions in which people are born, grow, work, live, and age. These conditions significantly impact length and quality of life and contribute to health inequities. The Social Determinants of Equity \textsuperscript{20} are factors such as ableism, racism, sexism, and others that determine how different groups of people may experience SDoH.

Health Equity means that everyone has a fair and just opportunity to be as healthy as possible, regardless of age, disability, education, gender identity, geographical location, race or ethnicity, etc. This requires removing economic and social obstacles to health such as poverty and discrimination.\textsuperscript{21}

### Social Determinants of Health and Equity

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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</thead>
<tbody>
<tr>
<td><strong>SD1: Increase the percentage of members who have safe, * accessible, affordable housing.</strong></td>
<td><strong>Indicator Concepts</strong></td>
</tr>
<tr>
<td></td>
<td>a. Number of homeless persons</td>
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<td></td>
<td>b. Number of homeless students</td>
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<td></td>
<td><strong>Areas of Opportunity</strong></td>
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<tr>
<td></td>
<td>i. Stable housing upon discharge from hospital or emergency room visit</td>
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<td></td>
<td>ii. Evictions prevention and reduction</td>
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<tr>
<td></td>
<td>iii. Housing-related, closed-loop referral between clinical and community services</td>
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<td></td>
<td>iv. Social Determinants of Health claims data</td>
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<tr>
<td><strong>SD2: Increase the percentage of members who have access to affordable transportation.</strong></td>
<td><strong>Areas of Opportunity</strong></td>
</tr>
<tr>
<td></td>
<td>i. Non-medical transportation access</td>
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<tr>
<td></td>
<td>ii. Distance between members' homes and public transportation</td>
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<td></td>
<td>iii. Member utilization of available, covered transportation services</td>
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<tr>
<td></td>
<td>iv. Provider knowledge of, and referral to, available transportation services</td>
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<tr>
<td><strong>SD3: Increase the percentage of members who have access to healthy food.</strong></td>
<td><strong>Indicator Concept</strong></td>
</tr>
<tr>
<td></td>
<td>a. Percentage of members living in a food desert</td>
</tr>
<tr>
<td></td>
<td><strong>Areas of Opportunity</strong></td>
</tr>
<tr>
<td></td>
<td>i. Food security</td>
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<tr>
<td></td>
<td>ii. Availability of fresh, affordable produce</td>
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</tbody>
</table>
**Social Determinants of Health and Equity (Continued)**

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<tr>
<th>Outcomes</th>
<th>Indicator Concepts and Areas of Opportunity</th>
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<tbody>
<tr>
<td><strong>SD4: Increase health equity.</strong></td>
<td><em>Areas of Opportunity</em></td>
</tr>
<tr>
<td></td>
<td>i.  Health disparities experienced by members due to age, disability, gender identity, geographical location, income, race or ethnicity, sex, sexual orientation, etc.</td>
</tr>
<tr>
<td></td>
<td>ii. Availability of health equity data</td>
</tr>
</tbody>
</table>
Appendix I: Affiliations and Acknowledgements

The 2019 IHN-CCO Community Health Improvement Plan is a collaborative effort of the many community members, organizations, and providers with a commitment to improving the health of IHN-CCO members. Listed below are the organizations represented by individuals who worked on the CHIP, either as a Representative of the Community Advisory Council, a member of a Local Community Advisory Committee to the CAC, or in a professional role within the system of healthcare.

- Addiction, Prevention, and Recovery Committee, Lincoln County
- Alcohol and Drug Addiction Council, Lincoln County
- Behavioral Health Quality Committee, IHN-CCO
- Benton, Lincoln, and Linn Health Administrators
- Benton, Lincoln, and Linn Local Advisory Committees to the CAC
- College of Osteopathic Medicine Pacific Northwest - COMP NW
- Communities Helping Addicts Negotiate Change Effectively
- Community Doula Program
- Community Health Centers of Benton and Linn Counties
- COMP NW - Center for Lifestyle Medicine
- COMP NW - Medical Education
- Corvallis Community Services Consortium
- Court Appointed Special Advocate
- Darkness to Light facilitator, Child sexual abuse prevention
- Delivery Systems Transformation Committee, IHN-CCO
- Dental Program Clinical Coordinator, Samaritan Health Services
- Developmental Disabilities Advisory Committee, Lincoln County
- Disabilities Services Advisory Committee, Oregon Cascades West Council of Governments
- Disability Services Advisory Council, Oregon Cascades West Council of Governments
- Eddyville School Board
- Foster Parents
- Gender & Non-binary advocate
- Growing Family Birth Center
- Health Care for All, Oregon
- Health Equity Workgroup, IHN-CCO
- Homeless Resource Team, Benton County
- Homeless Vulnerable Patient Panel member
- Homelessness advocate for the seniors
- InterCommunity Health Network CCO
InterCommunity Health Network CCO Board of Directors
Legal Aid Services of Oregon
Lincoln Community Health Centers
Lincoln County Federally Qualified Health Center Council
Linn-Benton Health Equity Alliance
Linn-Benton Housing Authority
Living Well with Chronic Conditions Facilitator
Meals on Wheels Advisory Committee, Oregon Cascades West Council of Governments
Mental Health Advisory Board, Linn County
Mental Health Advisory Committee, Lincoln County
Mental Health First Aid Instructor
Oregon Aging and Disability Resource Connect Advisory Committee
Oregon Cascades West Council of Governments
Oregon Disabilities Commission
Oregon Health Authority Innovator Agent
Oregon Health Plan Assister
Public Health Advisory Committee, Lincoln County
Quality Management Committee, IHN-CCO
Regional Planning Council, IHN-CCO
Samaritan Health Plans
Samaritan Health Services
School Based Health Centers, Lincoln County
Senior Services Advisory Council, Oregon Cascades West Council of Governments
Sheriff's Community Advisory Group, Lincoln County
Signs of Victory Ministries
Signs of Victory Shelter and Warming Center
Social Determinants of Health Workgroup, IHN-CCO
State Health Assessment Steering Committee
State Health Improvement Plan Steering Committees, Oregon Health Authority
Street Outreach and Response Team, Corvallis
Sweet Home Community Health Committee
Systems of Care Advisory Committee, IHN-CCO
Traditional Health Workers Workgroup, IHN-CCO
Trillium Family Advisory Council
Universal Care Coordination Workgroup, IHN-CCO
Willamette Neighborhood Housing Services
Appendix II: Acronyms

**ACEs** – Adverse Childhood Experiences

**ACT** – Assertive Community Treatment

**CAC** – Community Advisory Council

**CHA** – Community Health Assessment

**CHIP** – Community Health Improvement Plan

**CCO** – Coordinated Care Organization

**DHS** – Department of Human Services

**DME** – Durable Medical Equipment

**DST** – Delivery Systems Transformation Committee

**HIA** – Health Impact Area

**IHN-CCO** – InterCommunity Health Network Coordinated Care Organization

**OHA** – Oregon Health Authority, the state agency responsible for OHP/Medicaid

**OHP** – Oregon Health Plan (Medicaid)

**Opal-A** – Oregon Psychiatric Access Line about Adults

**Opal-K** – Oregon Psychiatric Access Line about Kids

**PCPCH** – Patient Centered Primary Care Home

**RPC** – Regional Planning Council

**SBIRT** – Screening, brief Intervention, and referral to treatment

**SDoH** – Social Determinants of Health

**SPMI** – Severe and Persistent Mental Illness

**THW** – Traditional Health Worker
Appendix III: Glossary of Terms

**Ableism** – Discrimination against people with disabilities

**Adverse Childhood Experiences (ACEs)** – Are stressful or traumatic events, including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders. ACEs are strongly related to the development and prevalence of a wide range of health problems throughout a person’s lifespan, including those associated with substance misuse.

**Ageism** – Discrimination against people based on their age

**Addendum** – Something that is added to the main or original text

**Areas of Opportunity** – similar to Indicators, further clarify and define their related Outcomes. However, Areas of Opportunity do not currently have readily accessible, good quality data for annually tracking improvement or lack thereof. By including Areas of Opportunity, pilot projects and other initiatives may be prioritized to focus on making improvements and potentially establishing measurements in these areas. Also, the CAC and its Local Committees may invite presentations related to the Areas of Opportunity, and over time data may become available allowing an Area of Opportunity to be elevated to an Indicator Concept.

**Assertive Community Treatment (ACT)** – an evidence-based way of delivering a full range of services to people who have been diagnosed with a serious mental illness. ACT’s goal is to give individuals adequate community care and to help them have a life that is not dominated by mental illness.

**At Risk** – An individual or group who is more likely than another individual or group to experience a problem, such as an illness

**Durable Medical Equipment** – Durable Medical Equipment provides therapeutic benefits to a patient in need because of certain medical conditions and/or illnesses. They are usually prescribed by a physician and are appropriate for use outside of the clinical setting, such as crutches or oxygen tanks

**Epidemiologist** – Someone who studies patterns, causes, and effects of health and disease conditions in defined populations and is knowledgeable about relevant data.

**Food Desert** – Food deserts are areas that lack access to affordable fruits, vegetables, whole grains, milk, and other foods that make up a full and healthy diet

**Health Impact Area (HIA)** – A priority health focus area identified in the CHIP

**Indicator** – A measurement or data that provides evidence that a certain condition exists or certain results have or have not been achieved. Indicators measure the level of success or lack of success a program has had in achieving an outcome

**Member** – Any individual enrolled in the Oregon Health Plan whose care is the responsibility of IHN-CCO
OHA – Oregon Health Authority, the state agency responsible for Oregon Health Plan/Medicaid

OHA Innovator Agent – Innovator Agents help CCOs and OHA work together to achieve the goals of health system transformation: better care, better health, and lower costs.

Opal-A – Oregon Psychiatric Access Line about Adults provides free, same-day adult psychiatric phone consultation to primary care providers in Oregon\textsuperscript{25}

Opal-K – Oregon Psychiatric Access Line about Kids provides free, same-day child psychiatric phone consultation to primary care providers in Oregon\textsuperscript{26}

Outcome – Results or changes that come about from a program, such as changes in knowledge, awareness, skills, attitudes, opinions, aspirations, motivation, behavior, practice, decision-making, policies, social action, condition, or status

Resiliency – The ability to recover from potentially adverse experiences

RHA Team – The Regional Health Assessment Team works to coordinate data collection and reporting across Benton, Lincoln, and Linn counties. They are working to create a central database for community partners to provide & share data to support the repeating cycles of community health assessment across the region.

Rural – any geographic areas ten or more miles from the geographic city center of a city with a population of 40,000 people or more\textsuperscript{27}

Severe and Persistent Mental Illness (SPMI) – Adults with SPMI are defined for individuals, age eighteen or older, based on diagnoses including Schizophrenia and other psychotic disorders, Major depression and Bipolar disorder, Anxiety disorders, and Schizotypal Personality disorder, or Borderline Personality Disorder; or for an individual who has more than one mental illness (excluding substance use and addiction disorders) and a Global Assessment of Functioning score of 40 or less.\textsuperscript{28}

Social Determinants of Health – Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, and age that affect health wellbeing.\textsuperscript{29}

Traditional Health Workers (THWs)\textsuperscript{30} are individuals in their communities, providing physical and behavioral health services. There are five traditional health worker types:

- **Community health workers**: Assist community members in receiving the healthcare they need
- **Peer support specialists**: Provide support, encouragement and assistance to addictions and mental health consumers
- **Peer wellness specialists**: Provide support, encouragement and assistance to address physical and mental health needs.
- **Personal health navigators**: Provide care coordination for members from within the health system
- **Birth doulas**: Provide companionship and personal, nonmedical support to women and families throughout the childbirth and post-partum experience
## Appendix IV: Regional Crosswalk – Alignment of CHIPs across Benton, Lincoln, Linn, & the State Health Improvement Plan

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Partners and Acknowledgements

Benton County Public Health and the Regional Health Assessment team for Linn, Benton, and Lincoln counties would like to acknowledge and extend thanks to our numerous talented and dedicated community partners.
Chapter 1
Introduction and Overview

The 2017 Benton County Community Health Assessment (CHA) is the result of many dedicated hours of research, working in collaboration with community partners and agencies, leaders, and local residents across the county.

The World Health Organization defines health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”¹ Health is not just about individuals, but includes families, communities, and systems, and is a result of the interaction of complex networks of conditions and factors. Health starts long before illness occurs and is impacted by where and how we live, learn, work, play, worship and age.

The Benton County CHA incorporates this definition of health by describing a wide array of information about the conditions and factors affecting people’s health across the county as well as indicators of health status.

Assessment Goals and Objectives

The Benton County CHA:
- Identifies and gathers health status indicators in order to determine the current health status of the community;
- describes areas for potential future health improvement while building upon ongoing community knowledge and efforts;
- identifies strengths and challenges facing the county in regard to health status;
- recognizes and highlights the need for more detailed local data; and
- is a collaborative process that incorporates a broad range of community voices.

CHA data informs:
- Community, organizational, and local coordinated care organization decision-making;
- the prioritization of health problems;
- reporting requirements and funding opportunities for community partners; and
- the development, implementation, and evaluation of a range of plans, policies, and interventions to improve community health.

Report Organization

The Benton County Community Health Assessment is presented in nine chapters:

Chapter 1: Introduction and Overview, which includes methodology and limitations.
Chapter 2: *Who We Are*, a description of the people of Benton County including population demographics as well as a look at how the community has changed over time.

Chapter 3: *Environmental Health*, which includes information about the physical spaces in which we live, work, and play.

Chapter 4: Social Determinants of Health, which includes the social, economic, and community factors that influence health.

Chapter 5: *Access to Health Services*, an exploration of how we define and measure the ability of those in our community to get the health care they need.

Chapter 6: *Physical Health*, which covers a number of physical health-related outcomes, from chronic conditions to violence and injury throughout the life course.

Chapter 7: Behavioral Health, a look at the indicators and measurements of mental health and substance abuse throughout the community.

Chapter 8: Health through an Equity Lens, examining the disadvantages and barriers some populations face more than others regarding improving and maintaining their health status.

Chapter 9: Conclusion—Meeting Challenges Together, a discussion of how this data can be used to understand the health of Benton County and recognize opportunities for positive changes to improve the health of the entire community.

**Collaboration and Partnerships**

The Benton County Community Health Assessment was developed by the Linn, Benton, and Lincoln County Regional Health Assessment and Alignment (RHA) team, a partnership formed by Linn, Benton, and Lincoln counties and the local Coordinated Care Organization (CCO), InterCommunity Health Network (IHN-CCO). The four partners collaborate on a series of assessments with the understanding that a regional approach to population health data allows them to identify wider health trends and pool their resources to efficiently address the issues that their individual Community Health Assessments and group Regional Health Assessment (RHA) identify. The RHA engages a wide representation of key individuals in the community who shared their personal and professional knowledge while committing to help develop health improvement strategies suitable for the region.

**Methodology**

The Regional Health Assessment team reviewed county, regional, and state health assessments as well as current literature to better understand how best to conduct and design a community health assessment. The team also built on its experience from having previously produced a Regional Community Health Assessment for the region consisting of Linn, Benton, and Lincoln counties. Staff examined access indicators that have strong evidence for correlation with health status and outcomes. Data from secondary sources were identified through meeting
with community partners, and through preexisting publications (e.g. community health assessments and hospital community health needs assessments). In addition, data sources were identified through literature research to include data ranging from local, regional, state and national levels. A variety of community partners were involved throughout this process. Staff conducted both in-person and phone presentations and consultations with members of regional and county-level governmental, nonprofit, and health system organizations. In addition, members of state and local research communities were contacted.

A community Steering Committee was formed to guide the development of the Community Health Assessment. The Steering Committee is formed from Benton County’s community Public Health Planning and Advisory Committee and additional further members with sector expertise who bring a broad perspective of our community and provide oversight of the production of a considerate and comprehensive Community Health Assessment. The Steering Committee provided input throughout the development of the CHA.

The full CHA development process has included:

- engaging county stakeholders and partners in the process of issue identification, data collection, data interpretation, editing, and dissemination of results;
- obtaining updated secondary data for the county;
- synthesizing existing data reports; identifying areas in which more information is needed, and including data from other sources which address these gaps;
- identifying health needs and assets that will inform additional local and regional planning processes, including county-level Community Health Improvement Plans, Public Health Division strategic planning, public health accreditation, and health care transformation initiatives, among others; and
- consulting state and national resources for guidance in the development of this community health assessment, including the following: Oregon Health Authority technical reports (e.g. health equity, asthma, chronic disease prevention); the Centers for Disease Control and Prevention’s data set directory of social determinants of health at the local level; King County’s Equity and Social Justice Annual Report; and the Statewide Health Assessment of Minnesota.

Limitations

While the Benton County CHA identifies many critical issues pertaining to community health, it is not inclusive of all health-related issues. As a result, it should not be considered a formal study or research document investigating the causes of each issue raised or providing a detailed analysis of the data. In many cases, data are not available at the regional or county level, nor are all data stratified by race/ethnicity, income, education level, zip code, etc.

Data that describe the many factors that contribute to health are not always readily available. In addition, conclusions, hypotheses, and interpretations of the interactions between the many
factors that contribute to health may not be included, in part because the underlying structures of these interactions are still not fully understood.

Gaps in Data

Recognizing and highlighting the need for more detailed local data was a key objective of this assessment. As mentioned above (and throughout the document) data for Benton County were often not available for particular demographics, such as age, income, education-level, race/ethnicity, or zip code. This greatly limited the ability to explore differences or disparities within particular sub-populations or geographies.

When race/ethnicity data are gathered, analysis may be further limited due to a lack of data stratification by more specific racial categories, such as U.S.-born versus foreign-born for the Latino population, or the many ethnicities and cultures represented in the category of Asian-Pacific Islander. There are limited data on populations that experience inequities and disparities in the region however, as highlighted in later chapters, and their needs and barriers to health and health care are likely to be greater than those of the population at large.

Throughout the document, national or Oregon state-wide data are provided to illustrate trends, especially among vulnerable populations, when county level or regional data are not available. It is important to note, however, that national or state-wide rates, trends, and patterns may not necessarily reflect the reality of particular communities, counties, or regional rates and trends. As regional partners continue to gather information to inform their practices and services, it is important to collect demographic data (i.e. zip codes, level of education, etc.) so that more accurate information can be used to inform future health improvement planning and other public health initiatives.

The Role of Public Health Data and the Cycle of Assessment

Health assessment is a cyclical, data-informed process. Many organizations in Linn, Benton and Lincoln counties conduct assessments of some kind on varying timelines and focused on diverse populations. The Regional Health Assessment team aims to streamline assessments and improve comparability of data used for health planning across Linn, Benton, and Lincoln counties. Each county public health department is required to produce their own health assessment for national accreditation, but have agreed to work with each other and the regional Coordinated Care Organization, InterCommunity Health Network, to identify areas to collaborate and efficiently share resources. Documents relating to the county public health accreditation process are called Community Health Assessments (CHA) and Community Health Improvement Plans (CHIP). This document is the Benton County Community Health Assessment.

Shown on the next page is a simplified ‘cycle of assessment,’ which helps to demonstrate the role that data (like the data included in this report) can play in the assessment process. Data can illustrate the health status and disparities within communities (needed for the CHA), and
inform health priorities and measure progress (for the CHIP). In addition, data can be used to measure progress on projects and activities aimed at improving the health of the community.

A Framework for Public Health Action: The Health Impact Pyramid

Health is made up of many conditions and factors. Worldwide, a growing body of research reveals how conditions, and social and economic opportunities determine health outcomes. The Health Impact Pyramid framework, shown here, provides guidance for a comprehensive public health approach to community assessment and program development across multiple domains of behavioral influence. This model has been incorporated into the Benton CHA to inform this assessment process. In this 5-tier pyramid, efforts to address socioeconomic factors are at the base, followed by public health interventions that change the context for health (e.g., smoke-free laws, safe...
parks, bike lanes), protective interventions with long-term benefits (e.g., immunization, smoking cessation) come next, followed by direct clinical care, and at the top, counseling and education. In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact overall. A similar model, called the Ecological or Social Ecology model, is used in a variety of disciplines in order to better understand the larger forces that impact individuals.

The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of the U.S. Department of Health and Human Services Healthy People. Healthy People 2020 is the most recent national 10-year agenda for improving health of all Americans with the goal of providing a framework for national, state and local health initiatives.

The Health Impact Pyramid aligns with the factors that the U.S. Department of Health and Human Services cite as influencing the development of healthy communities:

A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, and play within their borders—where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.

These factors inform the selection of indicators the RHA team used to describe the health of residents, the neighborhoods in which they live, and the issues that most impact their well-being.
How to Use This Document

Timeframes for Data

This report attempts to balance the importance of comparing data from common years with
the goal of presenting the most recent data. Different data sources update and release data on
independent timeframes. The U.S. Census Bureau is the main source of data for demographic
and socioeconomic information used in this report. The most recent data available for county-
level demographic and socioeconomic data is the Census Bureau’s American Community Survey
(ACS) 2011-2015 five-year aggregates. This aggregation combines data from the five years in
order to produce more accurate estimates.

In an effort to compare data from common years, many statistics reported are from 2015, even
if more recent data is available. These statistics reflect measures of health that have historically
changed gradually, so differences between 2015 and the present are likely to be minor.
However, some measures of health have changed greatly in the past several years, such as the
implementation of the Affordable Care Act in 2014, which had huge impacts on insurance
coverage rates and Medicaid membership. In this case, and for other rapidly changing
measures, more contemporary data is reported in order to best reflect current health status
and the current health system.

As with the ACS 2011-2015 5-year aggregates, many data sources aggregate statistics over a
number of years to improve the reliability of the estimates. A common example of this is
reporting the incidence (number of new cases) of cancer. For example, in the state of Oregon
there were approximately 98,860 new cases of cancer in Oregon between 2008 and 2012. This
statistic is reported as an incidence of 448 cases for every 100,000 people. This means that
each year, for every 100,000 people in Oregon there were 448 cancer diagnoses. It does not
mean that 448 cases per 100,000 people were diagnosed over the course of 5 years.

Regional and County-level Data

The Benton County CHA document is focused on the health status of Benton County. However,
because of the partnership between Linn, Benton, and Lincoln counties and IHN-CCO, data that
encompasses the three-county region is included to illustrate the larger context of which
Benton County is a part. Important differences between counties exist and are often identified
along with the regional totals. If county level data is not displayed, it is because the regional
totals are approximately representative of all three counties, or county-specific data is not
available.

For more information on time-trends, color-schemes and decisions around displaying regional
and county-level data, please see the following ‘Tables, Graphs, and Maps’ section.
Oregon Health Plan data

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). The Oregon Health Plan collects a large amount of health-related information about its members. It is a valuable resource for understanding the health of our community. Many topics in this Community Health Assessment have sections with Oregon Health Plan data. These data are for OHP members in Benton, Linn, and Lincoln Counties, since they are organized by CCO. Not all low-income community members have insurance through the Oregon Health Plan, and not all OHP members get their insurance through a CCO. These groups are not included in the data and therefore the data should not be interpreted as completely representative of under-resourced community members.

Benchmarking

Benchmarking is an important tool in many fields, including public health. Benchmarking makes a comparison between data (in this case health status data) and a standard for best practice. In other words, benchmarking involves comparing a particular health status in our region, and what is possible for that health status. Major organizations like Healthy People 2020 dedicate significant resources to provide benchmarks for use by local health authorities. As stated on their website, Healthy People has established benchmarks and monitored progress over time in order to:

- encourage collaborations across communities and sectors;
- empower individuals toward making informed health decisions; and
- measure the impact of prevention activities.

Healthy People 2020 has also taken a lead in developing a shared set of overarching goals for public health practice, which are listed in the following text.\(^\text{14}\)

**Healthy People 2020 Overarching Goals**

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all life stages.
Tables, Graphs, and Maps

When exploring the Benton CHA document, a number of visuals are included to display data across Benton County, the Linn Benton Lincoln region, and the state. For consistency, color-coding has been used. Benton County has been assigned shades of blue; the Linn Benton Lincoln Region has been assigned shades of purple, and the state has been assigned shades of red.

When working with time-trends, multiple years are included only when data was comparable across time. However, comparisons are not always possible, as methods for data collection can undergo significant changes.

Some graphs and tables may not include certain geographies. As mentioned earlier, Benton County level data are not included when not available or when the regional data are similar to Benton County-specific data. Occasionally the regional total was not included, which meant it was not possible to aggregate the counties (usually because the data was age-adjusted at the county-level).

When creating all visuals, there were times that numbers were too small to be meaningful or were small enough to be identifiable. In these cases the data have been suppressed and it has been noted in the table or graph accordingly.

Correlation versus causation

Many health indicators are related to one another or to other group or individual characteristics. For example, diabetes and obesity are related, in that individuals with diabetes are more likely to be obese than the rest of the population, and vice versa. This is a statistical correlation. However, this alone does not imply that diabetes causes obesity, or that obesity causes diabetes. Throughout this document, many correlations are presented, because they are important for understanding which groups may have increased risk for poor health outcomes. Terms like “risk factor” and “association” indicate a correlation.

It is important from a public health standpoint not to assume causation without evidence, because that can lead to stigma against individuals or groups as well as a misunderstanding of the relationship between health indicators. When there is a clear causal link between two health indicators or other factors it is explicitly stated with supporting evidence.
Chapter 2
Who We Are

The history of Benton County begins with the Native American tribes that have lived in the region for thousands of years. Native Americans lived in the valleys and the hills, along rivers and oceans.

Contact with non-native groups began with trappers and explorers in late 18th century, then with pioneers and settlers who moved to the Oregon Territory during the mid-1800s. In 1855, the United States established a 1.3 million acre reservation in what is now Lincoln County. The U.S. government moved many of the coastal and Willamette Valley tribes to this reservation, which at the time included Yaquina Bay.

Over the next 150 years, the three counties incorporated, grew in population, and developed strong local industries. Oregon State Agricultural College, now Oregon State University, was designated as a land grant university in Benton County in 1868. The university is a major driver of economic and cultural activity in the region. In addition, Benton County is considered a regional health care hub and is home to agriculture and technology industries.

Health Equity

In discussing the health of our county, it is important to recognize that specific subpopulations may experience worse health outcomes than the general population. This chapter describes many of the sub-populations that will appear later in a health equity context. In order to understand the impact of these inequities, it is helpful to understand the variety of demographics that make up Benton County. In this chapter, these include: geographic distribution, age, disability status, race and ethnicity, veteran status, and other categories.

Population Overview

Benton County is home to approximately 92,000 residents. Approximately 61,000 residents (66 percent) live in Corvallis, the county seat and most populous city in the county, and around 19 percent of Benton County residents live in rural areas. Rural geography often isolates families through their limited daily interactions with other residents. Isolation is increased by limited public transportation options as well as the variable cost of gasoline.

Map 2.1 shows the distribution of population centers in the county. The county seat of Corvallis is the largest city in Benton County. Additional major population centers include Philomath and North Albany.
In 2015, there were 33,840 households in Benton County. Household distribution follows roughly the same pattern as overall population distribution across the county. The average household size is 2.4 people. 46 percent of households consist of married couple family households. Among persons 15 years of age and older, 44.2 percent are currently married, a proportion about 5 percent lower than the Oregon proportion.

Non-family households made up 44 percent of all homes in Benton County. Most non-family households are composed of people living alone, but some are people living in households in which no one is related to the head of household. Benton County has 7 percent more non-family households than the proportion of non-family households for the entire state. This is because of the sizeable student population attending Oregon State University in Corvallis.

Twenty-four percent of all households in Benton County have one or more people under the age of 18, below the Oregon average of 29 percent. Approximately 10 percent of households are individuals 65 years or older who live alone.
**Student Population**

There are two institutions of higher learning in the county: Oregon State University (OSU) and Linn-Benton Community College (LBCC). Oregon State University (OSU) is located in Corvallis, with 29,375 students enrolled as of Winter Term 2017, an increase of 3.3% from Winter Term 2016. Linn-Benton Community College (LBCC) is based in neighboring Linn County, and maintains a campus in Corvallis. LBCC had 19,484 students enrolled in the 2015-2016 school year. Just under one third of LBCC students are enrolled in Benton County, with the other two thirds attending Linn County campuses. Considering dual enrollment with OSU and LBCC student populations, these figures may be subject to a small portion of double counting.

**Veterans**

The 2011-2015 American Community Survey (ACS) report the veteran population in Benton County at 5,329. Veterans are defined as people who have previously served on active duty in the U.S. Army, Navy, Air Force, Marine Corps, Coast Guard, or who served in the U.S. Merchant Marine during World War II. This equates to veterans composing approximately 6 percent of the civilian population ages 18 years and older in Benton County. As this population ages, the number of individuals with veteran status is expected to decrease over time.

**Demographics: Population by Age and Sex**

Based on 2015 U.S. Census data, the percentage of males and females in the county is approximately equal in most age groups. Within the county, children under 18 years of age constitute 17 percent of the population and adults 65 years and older constitute 14 percent of the population. The median age is 33 years old, lower than the Oregon median age of 39 years. From 2010 to 2016 the population of Benton County grew 6.5 percent, from 85,735 to 91,320.

Benton County’s population demographics are strongly influenced by the Oregon State University student population. The population pyramid shown below displays this influence as outliers in the 20-24 year old age group. There is another slight increase between the ages of 55 and 64 years old as well.
**Figure 2.1: Benton County population by age group, 2011-2015**

Figure notes: The population of Benton County, as recorded in this ACS data, is approximately 86,000. The large percent of residents age 20-24 is due to Oregon State University students.

Source: U.S. Census Bureau, American Community Survey 5-year estimates

This population pyramid for Oregon shows a much more typical distribution, providing a contrast to the age distribution of Benton County residents.

**Figure 2.2: Oregon population pyramid, 2011-2015**

Figure notes: Oregon’s population pyramid displays a more classic shape for an aging society, with roughly equal percentages of individuals between 0 and 65 years old. Oregon’s 2015 population, as recorded by this ACS data, is approximately 3,900,000.

Source: U.S. Census Bureau, American Community Survey 5-year estimates
Growing Diversity

Native and Foreign Born

In 2015, 89 percent of the people living in Benton County were native residents of the United States. Nearly 43 percent of these residents were born in Oregon. Approximately 10 percent of the people living in Benton County are foreign born. Of the foreign born population, 33 percent are naturalized U.S. citizens. Twenty-six percent of foreign born residents entered the country after the year 2009. Oregon State University has a large international student population, which likely contributes to this figure.

Race/Ethnicity

With an increasingly global view of health and a stronger understanding of research outlining the social constructs of race and ethnicity, a culturally sensitive definition of race should be considered. Mandated in 1997 by the Office of Management and Budget, data presented by the U.S. Census Bureau and the American Community Survey follow the U.S. Office of Management and Budget updated guidelines for race and ethnicity reporting. This update provided for the inclusion of individuals to self-identify as two or more races in the 2000 Census. It came after recognition and advocacy of race as a social construct and to include missed populations who identified with more than one racial category. The inclusion of individuals to self-identify as two or more races has been adopted almost universally across other agencies collecting and reporting demographic data. It is important to examine the data by race and ethnicity where possible due to disparities and inequities experienced by these populations. Without understanding the populations impacted by these health disparities, health authorities would be limited in their ability to address the specific issues creating the disparities.

U.S. Office of Management and Budget defines race and ethnicity categories accordingly:

- **American Indian or Alaska Native** – people having origins in any of the original peoples of North or South America (including Central America), and who maintain a tribal affiliation or community attachment.
- **Asian** – people having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent.
- **Black or African-American** – people having origins in the black racial groups in Africa.
- **Hispanic or Latino** – a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin, regardless of race.
- **Multiracial** – people having origins in two or more of the federally designated racial categories.
- **Native Hawaiian or Other Pacific Islander** – people having origins in any of the original people of Hawaii, Guam, Samoa, or other Pacific Islands.
- **White** – people having origins in Europe, the Middle East, or North Africa.

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In this report, the non-Hispanic categories are used for races, so, for example, the category denoted White includes white, non-Hispanic individuals.

Throughout this report, race or ethnicity will be reported in alphabetical order, as shown above.

White, not Hispanic or Latino individuals comprise 82% of the population of Benton County, as shown in Figure 2.3. The largest non-white populations in Benton County are Hispanic or Latino (6.9 percent) and Asian (6.2 percent). Benton County is marginally less diverse than the state of Oregon, which has fewer White, not Hispanic or Latino individuals (77 percent).  

Figure 2.3: Population by Race and Ethnicity in Benton County, 2011-2015

Native American Population

The Confederated Tribes of Siletz Indians are an important presence in the area and possess a rich history. The Confederated Tribes of the Siletz Indians is headquartered in Siletz, Lincoln County. The Tribe lists 5,001 members in its registry. This includes 720 members residing in Siletz, with an additional 444 members elsewhere in Lincoln County. Beyond Lincoln County, 174 members live in Linn and Benton counties, and approximately 2,000 additional members live throughout Oregon. The Tribe maintains a Federal Tribal Community Health Clinic and a USDA Food distribution center in Siletz. The Tribe also owns and operates the Chinook Winds Casino Resort in Lincoln City.
Now a federally recognized confederation of 27 bands, the Siletz tribes originated from the area spanning from Northern California to Southern Washington. The Tribe’s population was concentrated along the coastal areas of Lincoln, Tillamook, and Lane counties. Termination was imposed upon the Siletz by the United States government in 1955. In November of 1977, they were the first tribe in the state of Oregon and second in the United States to be fully restored to federal recognition. In 1992, the Siletz tribe achieved self-governance. Self-governance allowed for direct agreements to be made with the US Government, ensuring control and accountability over tribal programs and funding, including provision of health services.\(^3^7\)

The Siletz tribe occupies and manages a 3,666 acre reservation located in Lincoln County, including valuable resources of water, timber and fish. Geographically, this reservation is contiguous with the city of Siletz on its east side and lies to the north and southeast of the city as well.\(^3^8\)

Other Native American residents of the region include members of the Confederated Tribes of Grande Ronde, which is headquartered in Polk County, north of Benton County and east of Lincoln County. Members of other Native American tribes based in Oregon and the United States also live in the region.

**K-12 Population**

During the 2015-2016 school year, the five public school districts with schools Benton County served 7,281 students. These students include kindergarten through 12\(^{th}\) grade in 52 public schools. An additional 1,153 students attended private schools.\(^3^9\)

Table 2.1, below, presents racial and ethnic diversity in Benton County public schools, grouped by school district. These data do not include private school students. The category names are displayed as presented to students.

[Table 2.1 is displayed on the following page]
Table 2.1: Benton County School Districts and County Total, student demographics by race/ethnicity, 2015-2016

<table>
<thead>
<tr>
<th>School district</th>
<th>Number of students</th>
<th>American Indian/Alaskan Native</th>
<th>Asian Pacific Islander</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Multi-Ethnic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corvallis</td>
<td>6,692</td>
<td>0.75 %</td>
<td>7 %</td>
<td>1.2 %</td>
<td>15 %</td>
<td>7%</td>
<td>69 %</td>
</tr>
<tr>
<td>Philomath</td>
<td>1,592</td>
<td>1.3 %</td>
<td>1 %</td>
<td>*</td>
<td>8 %</td>
<td>4%</td>
<td>85 %</td>
</tr>
<tr>
<td>Monroe</td>
<td>447</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>17 %</td>
<td>2%</td>
<td>79 %</td>
</tr>
<tr>
<td>Alsea</td>
<td>146</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>7 %</td>
<td>*</td>
<td>89 %</td>
</tr>
<tr>
<td>North Albany schools</td>
<td>1,106</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>14 %</td>
<td>2%</td>
<td>76 %</td>
</tr>
<tr>
<td>Benton County total</td>
<td>7,281</td>
<td>0.76 %</td>
<td>4.8%</td>
<td>1.0%</td>
<td>14 %</td>
<td>6%</td>
<td>73 %</td>
</tr>
</tbody>
</table>

Table note: * represents data that have been suppressed due to small numbers.
Source: Oregon Department of Education, Student Ethnicity statistics

The K-12 population shows significantly higher racial and ethnic diversity than the regional population as a whole, particularly for Hispanic/Latino and Multi-ethnic populations (Figure 2.4). The Oregon Department of Education uses a different racial/ethnic classification system than the U.S. Census Bureau; in particular, it aggregates Asian and Hawaiian or Pacific Islander into one group, and does not include a category for “Other race”.

Figure 2.4: Race/Ethnicity of total population versus regional public school K-12 population

Figure notes: Race and ethnicity categories from ACS data have been adjusted to correspond to ODE race and ethnicity categories. The population of Benton County, as recorded in this ACS data, is approximately 86,000. The population of Benton County K-12 students is approximately 8,900.
Sources: Oregon Department of Education, Student Ethnicity statistics, academic year 2016-2017
U.S. Census Bureau, American Community Survey 5-year estimates, 2011-2015
Language Spoken at Home

2011-2015 U.S. Census data for the county reports that 13.2 percent of residents who are at least 5 years old spoke a language other than English at home (Table 2.2). Of those speaking a language other than English at home, 44 percent spoke Spanish, 31 percent spoke an Asian or Pacific Islander language, and 25 percent spoke some other language. Across the county, 30 percent of the population who spoke a language other than English at home reported that they did not speak English “very well”. In comparison with the county, 15 percent of Oregon residents at least 5 years old speak a language other than English in the home, and of those residents, 40 percent reported that they did not speak English “very well”.  

Table 2.2: Percentage of the population 5 years of age and over who speak English, Spanish, or another language; Benton County, the Linn-Benton-Lincoln (LBL) Region, and Oregon 2011-2015

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent who speak a language other than English at home</td>
<td>13.2 %</td>
<td>9.4 %</td>
<td>15.1 %</td>
</tr>
<tr>
<td>Spanish</td>
<td>5.7 %</td>
<td>5.6 %</td>
<td>9.0 %</td>
</tr>
<tr>
<td>Other languages</td>
<td>7.4 %</td>
<td>3.8 %</td>
<td>6.1 %</td>
</tr>
<tr>
<td>Does not speak English very well</td>
<td>3.9 %</td>
<td>2.8 %</td>
<td>6.1 %</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey 5-year estimates, 2011-2015

People with disabilities

Disability itself is not an indicator of poor health—rather, disability can (and often does) become a barrier to employment, adequate housing, social inclusion, transportation, access to health care, and other essential components of a healthy life.

Understanding and measuring disability is a very complex task. The complexity comes from the fact that the definition of “disability” includes a number of populations, and because the definition is still being discussed and further developed.

Definitions of disabilities from a source such as the World Health Organization (WHO) can help shed light on the particular health issues facing these populations, but it must be noted that this definition is not the same as that used to gather many types of data. According to the World Health Organization,

Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations.
Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers.\(^{41}\)

Mental illness that substantially limits one or more major life activities is also included in many definitions of disability.\(^{42}\) This is particularly worth noting, as institutionalized populations generally experience a greater prevalence and severity of mental illness than the broader population. However, these populations are not captured in much of the data collected around disability.\(^{43}\)

From 2011 to 2015, among the civilian non-institutionalized population, approximately 10 percent reported a disability in Benton County,\(^{44}\) where disability is “defined by a person’s risk of participation limitation when he or she has a functional limitation or impairment.”\(^{45}\) Disability encompasses many different conditions; for instance, the most common disability in Benton County among those aged 5-64 is cognitive difficulty, with ambulatory difficulty ranking the highest for the 65 and older population. The prevalence of disability increases with age, from 0.2 percent of people under 5 years of age, up to 7.5 percent of people between 18 and 64 years of age, and 31 percent of those 65 and over.

**Figure 2.5: Disability rates in Benton County and the LBL Region, all ages, 2011-2015**

The American Community Survey (ACS) is generally a reliable source for demographic data, but there are some concerns with its accuracy regarding disability rates. The Behavior Risk Factors Surveillance System (BRFSS) is another national survey that asks about disability. BRFSS data indicates that approximately 28% of Benton County residents report a disability, compared to
only 10% in ACS data, and 34% of LBL Region residents report a disability, compared to 16% in ACS data.\textsuperscript{46} One difference is that BRFSS data only includes individuals age 18 and older, while this ACS data includes all ages. But this only accounts for about 2 percentage points of the difference between the ACS data and the BRFSS data.

**Older adults**

Among those living in Benton County, 14 percent are 65 years of age and over, compared with 15 percent in Oregon overall.\textsuperscript{47} A number of health issues, needs, and concerns are associated with an aging population.

Ninety-four percent of adults in Benton County who are over 65 years of age are white and non-Hispanic.\textsuperscript{48} Of older adult households, 19.8 percent are renters and 46 percent of households have only one resident. This population faces higher rates of disability than other age groups, with a rate of 31 percent. Civilian veterans make up 26 percent of this group, and 47.9 percent of adults aged 65 or older in Benton County hold a bachelor’s degree or higher, well above the Oregon average of 27.8 percent.

**University and College Students**

Oregon State University is the largest educational institution in Oregon. 25,327 undergraduate students enrolled in 2016, along with approximately 5,000 graduate and professional students. 6,700 students are non-White or Hispanic/Latino (approximately 22%), 3,300 are international students (11%), and 5,800 are first generation undergraduate college students (24%). Twenty percent of undergraduate students are older than the age of 25.

80 percent of OSU undergraduates have at least one course on campus. This equates to 20,000 students. All of these students spend significant time in Benton County and contribute to our communities in a variety of ways, whether living in Benton County, visiting businesses, using parks and trails, and other ways. The majority of graduate and professional students also attend the Corvallis campus of OSU.\textsuperscript{49}

Linn Benton Community College (LBCC) is headquartered in Albany, with a large satellite campus, Benton Center, in Corvallis. 19,484 students enrolled for courses in 2016, with 5,687 of them taking courses at Benton Center. About 2,700 LBCC students are dually enrolled at Oregon State University. Approximately one third of LBCC students live in Benton County.

**Family structure**

There are 33,840 households in Benton County, with an average household size of 2.6 people. The Census defines a family as a household consisting of two or more people, at least two of whom are related by birth, marriage, or adoption. Close to half of Benton County households are formed by married couple families. This is similar to the state average. About 30 percent of
households are held by individuals living along, which is also similar to the state average. However, 16% of Benton County households with more than one person are non-family groups compared to 9% in Oregon. This category includes two or more unrelated individuals living in the same household. This high percentage is likely due to college students sharing apartments and houses.

A little under 10% of households in Benton County are single-parent households, with the majority of those (7% of all households) headed by women. See Figure 2.6.

The American Community Survey does not track same-sex partnerships at this time, but does include married same-sex couples in the “married couple family” category.

Figure 2.6: Composition of households in Benton County, 2011-2015

![Figure 2.6: Composition of households in Benton County, 2011-2015](image)

Figure notes: There are approximately 34,000 households in Benton County. The Census defines a family as at least two people in a household related by birth, marriage, or adoption. 
Source: U.S. Census Bureau, American Community Survey 5-year estimates, 2011-2015

Approximately 8,130 households in Benton County have children under the age of 18, 24 percent of all households in Benton County. Three out of four households with children are headed by a married couple, 18 percent are headed by a single female, and 5 percent are headed by a single male. See Figure 2.7.

[Figure 2.7 is displayed on the following page]
In addition to individuals in households, 5,250 Benton County residents live in group quarters, which include dorms, fraternities, nursing homes, and other institutional housing.

The League of Women Voters has estimated that in 2016, approximately 850 residents of Benton County experienced homelessness, or approximately 1 percent of the county population. Further detail on homelessness is given in Chapter 4.

Veterans

The American Community Survey estimates that approximately 7 percent of Benton County residents over the age of 18 are veterans of the U.S. military. This is a much smaller percentage than in the rest of the LBL region (see Figure 2.8).
Lesbian, Gay, Bisexual, and Transgender (LGBT) populations

Local data is limited on the population of LGBT residents of Benton County. Recent estimates suggest that approximately 5 percent of Oregonians are LGBT, translating to about 4,500 residents of Benton County.51

Local Data

The following are descriptions of local data collected by Benton County Health Department and partners are taken in part or in full from existing documents. Sources are cited at the bottom of each section.

South Benton County Agricultural Workers

Benton County Health Department conducted an assessment in 2016 of farms in the Monroe area to better understand the characteristics of agricultural workers in southern Benton County. Between 10 and 20 farms with a total of approximately 200 agricultural workers were surveyed, including tree, seed, fruit, and vegetable farms. Benton County Health Department spoke with growers, owners, employees, contractors, and the farmworkers themselves.

Half of the farms employed fewer than 25 employees or agricultural workers. An additional one quarter employed between 25 and 100 employees or agricultural workers, and the remaining farms employed over 100 employees or agricultural workers.
Ninety percent of the employees and agricultural workers are Latino. Half of them are classified as migrant workers, meaning that their principal employment is in agriculture, they move away from their home base for an extended period of time, they often return to the same location for multiple years, and sometimes a whole family travels together. 38% of the workers are classified as seasonal, meaning that they follow crops in one area, often centered around a home base. Usually a couple of adults from a household work as seasonal employees, moving around to work but coming home frequently.

Ten percent of the agricultural workers usually do not know where they will move next. These workers are generally foreign born, young, single men working in the United States and sending money home.

Immigration is a critically important issue for farmworkers. An estimated 15 to 20 percent of agricultural workers have authorized immigration status, while the remainder do not.52

**Conclusion**

In order to understand the health of the county, it is vital to understand the people who live here. Differences in age, race or ethnicity, and geography all influence health. The people of Benton County are growing more diverse and represent many different groups, such as students, Hispanics and Latinos, and retirees. The history of the region has shaped the residents of the county into its makeup today. In exploring the many determinants of health, it is evident that the people of Benton County are deeply connected with the environments in which they live. The next chapter explores these environments and the effects they have on the health of the region.
Chapter 3
Environmental Health

Human beings interact with their physical environment in everything they do. Some of these interactions have the potential to improve health, while others can negatively impact it. The natural environment is made up of the interactions of air, water, open spaces, and weather or geologic activity. The human-made environment consists of homes, communities, and infrastructure. These two environments are closely linked in their effects on human health. Humans benefit from clean water and air, places to exercise and enjoy the outdoors, safe living and working spaces, and opportunities to engage in healthy behaviors such as active commuting and consuming healthy food. However, when an environment lacks these characteristics, the complex interactions of health and environment can worsen health issues. Poor air quality can raise the risk of asthma, heart attack, or stroke; the design of communities can limit opportunities for recreation or access to quality food; and infrequent but intense natural disasters can disproportionately affect vulnerable populations.

Benton County has an active population that values open spaces for recreation, clean air, and clean water. At the same time the county faces many food access and transportation issues. An understanding of the natural and human-made environments forms a foundation for an analysis of the health of our county.

Natural Environment

The natural environment changes slowly and usually impacts health through long-term, cumulative effects. As a result, many of the data described in this section use longer time frames than elsewhere in this report. Even though longer time frames are needed to examine the trends in this data, individuals can have an impact on their local environment (and therefore their own and their community’s health) by either preventing future problems or contributing to them. Examples include global climate change or natural disasters. What can be controlled are the systems and practices put in place to react and adapt to the natural environment in order to improve health.

Terrain and Natural Resources

Benton County is the fourth-smallest county in Oregon, covering 675 square miles and spanning from the Willamette Valley and River up into the Oregon Coast Range. It share borders with Polk County to the north, Linn County to the east, Lane County to the south, and Lincoln County to the west. Primary land cover types include mixed Douglas-fir coniferous forests, oak savannahs, agricultural land, and coastal temperate rainforests. Lumber and wood products play a historically large role in Benton County’s economy, and researchers at Oregon State
University, based in the county seat of Corvallis, contribute a considerable amount to the nation’s forestry and agricultural research.\(^{57}\)

Located in the mid-Willamette Valley, Benton County’s rich agricultural and forest land, mountains, valleys, rivers and wetlands are highly prized economically, culturally, recreationally, environmentally and aesthetically. The western side of Benton County climbs into the Siuslaw National Forest and Oregon Coast Range, where the highest point in Benton County, Mary’s Peak (4,097 feet), is located. The eastern side of the county slopes down into the Willamette River, which serves as the border with Linn County.

**Annual Weather Patterns**

Benton County is sheltered by the Oregon Coast Range from the heavy rainfall experienced by its western neighbor, coastal Lincoln County. It experiences seasonal variation, with hot, dry summers, and cold, wet winters. On average, 44 inches of rain fall per year in the valley and 75 inches in the mountains, some of which falls as snow or ice. Most of the county’s annual precipitation occurs from October to March. Temperatures frequently dip below freezing from November through April in the lower elevations, while highs above 90 degrees Fahrenheit are common in July and August.\(^{58,59,60}\)

**Recreation and Outdoor Spaces**

Benton County has a variety of recreational assets and outdoor spaces.* While geographically small, it is home to rivers, waterfalls, forests, and mountains.

Benton County’s open spaces stretch from the highest peak in the Coast Range (Mary’s Peak) to the Willamette River. Mary’s Peak (4,097 feet) is situated in the Siuslaw National Forest. It hosts many hiking trails, which are also open to mountain bikes and horses. Mary’s Peak is also the source of the Rock Creek Watershed, which provides much of the drinking water to Corvallis, and Mary’s River, which is the source of Philomath’s drinking water. Near Alsea, the Alsea Falls Recreation Site (managed by the Bureau of Land Management), is a popular hiking and day-use area. Recently a network of mountain biking trails was constructed for novice and experienced mountain bikers within the Alsea Falls Recreation Site. The most popular large recreation site in Benton County is the McDonald-Dunn Research Forest, which is owned and managed by Oregon State University. It runs along a ridge of the Coast Range that extends along the northern edge of Corvallis. The 11,250-acre forest has 175,000 visits per year and hosts cross-country races in the spring and fall.\(^{61}\) South of Corvallis, the Finley National Wildlife Refuge was established in 1964 to provide overwintering habitat for dusky Canada geese. The 5,325-acre refuge hosts some of the last wet prairies in the Willamette Valley, 12 miles of hiking trails, camas meadows, and a herd of Roosevelt Elk.\(^{62}\)

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* Maps of county, city, state, national, and university lands can be found at: https://www.co.benton.or.us/parks/page/county-trail-maps; http://www.corvallisoregon.gov/indez.aspx?page=261; and http://cf.forestry.oregonstate.edu/forests

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\(^{57}\) University, based in the county seat of Corvallis, contribute a considerable amount to the nation’s forestry and agricultural research.

\(^{58,59,60}\) Benton County experiences seasonal variation, with hot, dry summers, and cold, wet winters. Most of the county’s annual precipitation occurs from October to March.

\(^{61}\) Benton County’s open spaces stretch from the highest peak in the Coast Range (Mary’s Peak) to the Willamette River.

\(^{62}\) Benton County’s open spaces stretch from the highest peak in the Coast Range (Mary’s Peak) to the Willamette River. Mary’s Peak (4,097 feet) is situated in the Siuslaw National Forest.
Forming the border of Benton and Linn counties, the Willamette River is a major recreation site, used by boaters, paddlers, and people who fish. The Willamette River Trail maintains a network of 11 campsites and 7 boat ramps between Harrisburg and Albany. However, the Willamette River also has a history of contamination from agricultural runoff, storm water drainage, and industrial byproducts. This contamination has limited the healthy use of the river, but efforts are continuing to clean up the river and restore it to health.63

**Recreational Access**

Access to recreational facilities and opportunities demonstrates the intersection of natural and human-made environments. Research demonstrates a strong relationship between access to recreational facilities and physical activity and mental health and wellbeing among adults and children. Studies have shown that proximity to places with recreational opportunities is associated with higher physical activity and lower obesity levels.64 Public recreation areas include parks, schools, public forests and trails, beaches, and waterfronts. The county’s rural areas are largely accessible to residents.

Recreational opportunities that include walking and bicycling are efficient, low-cost, and available to many. By walking and bicycling, residents can help develop and maintain livable communities, make neighborhoods safer and friendlier, save on motorized transportation costs, and reduce transportation-related environmental impacts, auto emissions, and noise. They can also create transportation system flexibility by providing alternative mobility options, particularly in combination with transit systems. Furthermore, creating walkable and bikeable communities can lead to healthier lifestyles. In Benton County, 45 percent of residents live within one half mile of a public recreation area, ranked 8th among Oregon counties.65

The City of Corvallis Parks and Recreation Department manages 1,200 acres of public natural areas and 600 acres of developed parks, all of which are free to the public. Many parks have sports facilities such as soccer fields and baseball diamonds. Overall there are 20 miles of trails in city natural areas and parks. The department has set a standard of 0.54 miles of trail per 100,000 people; it currently has 0.36 miles per 100,000 people, a deficit of 10 miles of trail.66

**Water Quality**

The quality of water sources has a significant impact on population health. Drinking water, recreation, manufacturing processes, and irrigation all rely on clean, safe water.

Water quality in the Benton County is considered to be good overall. Water quality problems may include issues around sedimentation due to soil erosion, warm water temperatures occurring as a result of low summer flows, and over-use by private and municipal water systems. Potential sources of contamination in watersheds can be mitigated by proper and effective management practices. Benton County derives its drinking water from watersheds that flow
east from the Coast Range to the Willamette River and from the Willamette River itself. Each watershed falls under a specific public water system depending on its location in their respective county.

The Oregon Department of Environmental Quality (DEQ) maintains monitoring stations at many locations along major Oregon rivers, including waterways that provide water to communities in Benton County. The quality of the water sources in Benton County is variable, with annual trends improving over time (Table 3.1).

Table 3.1: Water quality in major regional rivers, 2005-2014 averages and trends

<table>
<thead>
<tr>
<th>River</th>
<th>Sample site</th>
<th>Water quality</th>
<th>2005-2014 Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willamette River</td>
<td>Corvallis</td>
<td>Excellent</td>
<td>Improving</td>
</tr>
<tr>
<td>Mary’s River</td>
<td>Corvallis</td>
<td>Good</td>
<td>Improving</td>
</tr>
<tr>
<td>Muddy Creek</td>
<td>South of Corvallis</td>
<td>Poor</td>
<td>N/A</td>
</tr>
<tr>
<td>Long Tom River</td>
<td>Monroe</td>
<td>Fair</td>
<td>Improving</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Environmental Quality, Water Quality

Other major water sources that are not tracked by the Oregon Department of Environmental Quality are the Alsea River, which serves the community of Alsea, and the Luckiamute River, which serves northwest Benton County.

Fluoridated Water

Water fluoridation is the controlled addition of a fluoride compound to a public water supply, intended to prevent tooth decay. Community water fluoridation is an evidence-based practice recommended by the Community Preventive Services Task Force based on strong evidence of effectiveness in reducing dental cavities across populations. It is an effective, affordable, and safe way to protect children from tooth decay and is recognized as one of the 10 greatest public health achievements of the 20th century. Water fluoridation complements, but does not replace, other efforts to improve oral health. Water fluoridation is a valuable tool in addressing oral health disparities, since everyone who can access public water benefits from it, regardless of age, income level, or race or ethnicity. As of 2014, Oregon was ranked very low in the United States (48th out of the 50 states) for the percentage of people receiving fluoridated water. About 74 percent of the U.S. population served by community water systems received fluoridated water, while about 23 percent of Oregon’s public water supplies are fluoridated. This low state fluoridation rate is a direct consequence of some of Oregon’s most densely populated regions lacking fluoridation, including Portland and Eugene. In Benton County, about two thirds of residents are served by public water systems that fluoridate water, most of whom live in Corvallis, Philomath, North Albany, or Adair Village.
Annual Snowpack and Summer Water Flows

Annual Cascade snowpack is measured in a number of places the Cascade mountain range just east of Benton County. Snowpack levels are reported as snow water equivalent – the inches of water that could be melted out of the column of snow. The April 1st snowpack is typically an indicator of water supplies and quality for the summer in Benton County. There is no evidence of a significant trend in snowpack between 1979 and 2015, but the large year-to-year variability causes uncertainty and hardship for the agriculture, fishery, and forestry industries. There have been years in which the snowpack at various monitoring stations in the Willamette Basin was well below the 30-year median. Recently, the Willamette Basin April 1st, 2015, snowpack was the smallest recorded, at only 8 percent of the 30-year median snowpack. In contrast, the April 1st, 2017, snowpack measured at 134 percent of the 30-year median.71

As the effects of climate change manifest, snowpack in higher elevations of the Cascade Range is expected to be smaller and to disappear more quickly in summer. This will have the effect of reducing summer water flows and increasing the temperature of snow-melt fed rivers, such as the Santiam and Willamette river systems. Since the winter snowpack largely determines how much water is available from May through October in the Willamette Valley each year, reduced flows and higher temperatures put increased pressure on fish stocks and agriculture. This results in losses in biodiversity and more challenging conditions for farmers. Additional impacts of climate change are discussed in more detail later in this chapter.

Air Quality

Air quality has a direct impact on the health of individuals. According to the Environmental Protection Agency (EPA), small particles (less than 10 micrometers in diameter) can be inhaled deeply into the lungs and may even penetrate into the bloodstream. Exposure to particle pollution has been linked to many serious health problems, including:

- Premature death in people with heart or lung disease,
- Nonfatal heart attacks,
- Irregular heartbeat,
- Aggravated asthma,
- Decreased lung function, and
- Increased respiratory symptoms.72

Sensitive groups, including infants, the elderly, and individuals with preexisting conditions, are at heightened risk of complications from breathing particulate matter. Furthermore, unhealthy air days can prevent individuals from participating in other healthful activities such as exercise or enjoying the outdoors. The EPA conducts a National Air Toxics Assessment every three years that evaluates 178 high priority toxic air pollutants to help provide a better understanding of the air quality in Oregon.73 The Oregon Department of Environmental Quality then prioritizes areas of Oregon to determine air toxics reduction strategies, if needed. Benton County is not a priority area in Oregon, presumably due to the low levels of toxic air pollutants.
Benton County generally enjoys clean and healthy air. The Oregon Department of Environmental Quality records a qualitative measure of air quality each day at multiple locations throughout the state, one of which is in Corvallis. The qualitative measure is based on the level of fine particulate matter (PM$_{2.5}$; particulate matter less than 2.5 micrometers in diameter) and ozone levels in the air. The measure has six levels ranging from Good to Hazardous. Between 2007 and 2015, Corvallis averaged 336 days of Good air quality each year. Most of the remaining days were of Moderate air quality, with at most a few Unhealthy days in any given year. However, different areas can experience good or poor air quality due to local factors such as topography or local pollution.

Between 2002 and 2011, the level of fine particulate matter (PM$_{2.5}$) measured in the air in Benton County averaged 9.81 micrograms per cubic meters ($\mu$g/m$^3$). This is well below the national standard of 12 $\mu$g/m$^3$. Furthermore, between 2002 and 2011 the Benton County averaged less than 2.5 days per year with PM$_{2.5}$ levels above the 12 $\mu$g/m$^3$ standard.

Contributors to poor air quality include wildfires, temperature inversion events that trap polluted air, and seasonal pollen. The main driver of poor quality air in the region are wildland fires, which can increase the level of fine particulate matter levels on smoky days. However, the available data does not specify on which days the fine particulate matter levels spiked, so it is not possible to determine the differential effect of summer versus winter on air quality. The worst wildfire season between 2001 and 2014 was in 2007. During that wildfire season, Benton County averaged 10.7 $\mu$g/m$^3$ over the course of the year. In addition to smoke from summer wildfires, the Willamette Valley can experience high levels of particulate matter in the winter when an inversion of cold air traps exhaust and other pollutants close to the ground.

Seasonal allergies caused by pollen also have a major health impact in the Willamette Valley and the surrounding foothills. A combination of wet springs, warm summers, and large acreage devoted to grass cultivation causes the Willamette Valley to routinely have the highest seasonal pollen counts in the United States. Based on 2015 data, pollen counts begin to rise strongly in May, peaking in late June or early July before slowly tapering off for the rest of the year. However, day-to-day weather patterns can affect both pollen counts and the impact they have on allergy sufferers.

**Natural Hazards**

Benton County is generally considered to be at low risk of frequent natural disasters. Unlike many communities in the United States, Benton County is not at risk from tornados, hurricanes, or other major storms. Nevertheless, localized flooding and ice or snowstorms are an annual occurrence in some parts of the region, and there are risks from wildfire, major flooding, drought, and earthquakes.

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* The full list is Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy, and Hazardous.
The risk of a natural hazard depends both on the characteristics of the hazard, such as magnitude, duration, probability of occurrence and geographic extent, and also on the systems that are vulnerable to the disaster. These can include individuals, infrastructure, community assets, and also the ability and resources available to respond to the hazard. Many of the social and demographic factors that put people at risk for health issues also make them more vulnerable to natural disasters, including age, income, race or ethnicity, and access to health care.

The major natural hazard in the region is flooding. The eastern slopes of the Coast Range in Benton County do not receive as much precipitation as the coastal Lincoln County side does. However, localized flooding of the Mary’s River and other tributaries of the Willamette is common every couple of years. Winter flood events in the region, while rare, can lead to the Willamette River itself causing flood damage in urban and rural areas along waterways in Benton County.

Other natural hazards include winter storms, wildfires, and earthquakes. Ice storms and landslides are frequent in Benton County during the winter and can lead to temporary power outages in urban and rural areas.

**Earthquake and Tsunami Hazards**

One of the most high-profile natural hazards, whose notoriety has grown recently, is the potential for a Cascadia Subduction Zone earthquake occurring off the Oregon coast. Geologists estimate a 7 to 12 percent chance of a magnitude 9.0 earthquake within the next 50 years (before 2065). The last Cascadia Subduction Zone earthquake occurred in the early 1700s. Although the impact of such an event would likely be larger than any other natural disaster in the written history of the West Coast, the rarity of the event itself makes it difficult for communities and individuals to internalize its potential for destruction.

Much of the health and service infrastructure in Benton County is located on liquefaction zones (where the ground would behave like a liquid during a major earthquake) or are not constructed to withstand a large earthquake. Furthermore, houses built before 1993 were not required to meet seismic standards such as securing the frame to the foundation. This means as many as 68 percent of houses in Benton County could be at risk of collapse from a large magnitude earthquake.

While it remains difficult to address the potential destruction of the Cascadia Earthquake, individuals and communities are still able to prepare for lesser disasters, including earthquakes. This can include anything from ensuring that infrastructure is strong enough to withstand a lesser disaster, to storing survival supplies at home for use during an emergency.
Climate Change

Climate change is a worldwide phenomenon with global causes and many potential regional and local effects. The effects of rising temperatures will be felt locally in:

- Rising sea levels, leading to eroding beaches and more damaging storm surges;
- Warmer, dryer summers, creating a higher risk for heat-related illness;
- Decreased winter and summer snowpack leading to more potential for drought and groundwater stress;
- Greater variability in weather, as storms are predicted to be more intense and less predictable;
- Greater risk of larger, more intense, and more frequent wildfires;
- Higher prices for goods dependent on climates affected by global climate change;
- Changes in how and what agricultural goods are produced in the region;
- Effects on recreational activities dependent on the current climate, including fishing, skiing, and summer outdoor activities; and
- Potential increase in human and agricultural diseases associated with vectors [e.g. insects] and organisms that benefit from a warmer climate.

Many of the environmental indicators already discussed have been linked with climate change, both theoretically and through modeling. These include wildfires, air quality, ocean temperatures, and winter snowpack. However, the variability of annual weather and the complexity of the interactions that influence climate change effects make it difficult to demonstrate these links without many years of observable data. As a result, this report emphasizes the acute effects of these indicators rather than their long term trends.

One of the few indicators of global warming for which there is a long record of local data is air temperature. Seasonal temperatures have shown long-term upward trends both globally and locally for as long as data has been recorded. The National Oceanic and Atmospheric Administration maintains monitoring stations at many locations in the region that track temperatures and record daily maximum temperatures. Daily maximum temperatures above 90 degrees Fahrenheit constitute extreme heat from a health standpoint. Extreme heat can have a number of harmful effects on health. Heat-related illnesses tend to strike those whose health is already fragile, such as infants, elderly, and the infirm.

On average, there are eleven above-90 degree days at the Hyslop Field Station northeast of Corvallis, and the long term trend in temperatures has been rising in Benton County. Between 1940 and 2016, the number of days above the 90th temperature percentile (89 degrees F) rose at a rate of about 1 day every 10 years at Hyslop Field Station. This represents an increase of about 8 more days of extreme heat in 2016 than in 1940. This trend is statistically significant, notwithstanding fluctuations from year to year. Figure 3.4 illustrates this progression. These trend is expected to continue as global warming accelerates in the 21st century.
Human-made Environment

Human-made (or built) environments contribute to health in a variety of ways. People need schools, workplaces, and homes that do not expose them to physical or chemical hazards and places to walk and recreate outdoors that are clean, safe, and free of debris. They also need access to quality and affordable food and transportation options, as well as the confidence that their local communities have not been contaminated with human-made pollutants.\(^{86}\)

Healthy Homes

Indoor environmental quality, as defined by the Centers for Disease Control and Prevention, is the quality of a building’s environment in relation to the health and well-being of those who occupy the space within it. Key factors that influence a structure’s indoor environmental quality include dampness and mold in buildings, building ventilation, construction and renovation, chemicals and odors, indoor temperatures, and relative humidity.\(^{87}\) Buildings in the region are often exposed to winter storms with winds in excess of 30 mph and heavy rainfall, with 24 hour accumulations of greater than three inches. This combination often results in moisture entering buildings, creating conditions for the growth of mold. Examining the health effects of specific contaminants in buildings is very complex, but research has shown that some respiratory symptoms and illnesses can be associated with damp buildings.\(^{88}\)
Housing Characteristics

The age of a house can predict many other factors that affect the health of the occupants, including exposure to lead, asbestos, or other hazardous materials, mold or pest infestations, and weather resistance and temperature stability. Fifty-nine percent of the housing units in Benton County were built before 1979, the year when lead paint was banned from use in homes (Figure 3.7).

Figure 3.2: Construction year of housing stock in Benton County for houses built before 2015

![Figure 3.2: Construction year of housing stock in Benton County for houses built before 2015](image)

Figure notes: There are approximately 38,000 housing units in Benton County.
Source: U.S. Census Bureau American Community Survey

Lead Screening

Lead poisoning is a significant health concern. Laws and regulations are in place to help protect people; however, lead poisoning still threatens many Oregonians, especially children. The Centers for Disease Control and Prevention reports that “even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement.” Blood levels between 1 and 9.9 micrograms per deciliter (μg/dl) are of medical concern; concentrations of ten μg/dl or above are considered lead poisoning.

Although leaded paint and gasoline can no longer be legally sold in the United States, many children are still exposed to dangerous amounts of lead. Lead paint dust is the most common way children are exposed, and it is common inside and outside homes built before 1978. Ordinary household repair and maintenance activities can stir up lead-contaminated dust. People can also get lead in their bodies by eating foods contaminated with lead from exposure to soil or lead paint chips.

Oregon has a relatively low overall prevalence of lead poisoning compared to other states, and prevalence rates have declined through the years. This decline is consistent with national trends. In Oregon an estimated 1,000-2,000 children have blood lead levels equal to or greater
than ten μg/dl.\textsuperscript{91} This gives a rate of 1.16 – 2.32 children per 1,000 children. In 2016, there were a total of 5 reported cases of lead poisoning in Benton County (blood levels equal to or greater than ten μg/dl), four of which were children under the age of six.\textsuperscript{92}

**Radon**

Radon is a gaseous radioactive element that occurs from the natural breakdown of uranium in the soil and rocks. It is colorless, odorless, and tasteless. In indoor settings, radon poses a risk by emitting atomic particles that can enter the lungs and alter the DNA, increasing a person’s lung cancer risk. Radon is the second leading cause of lung cancer in the nation and, according to the Environmental Protection Agency, is classified as a Class A carcinogen. Radon levels in homes are measured by the Oregon Public Health Division. Radon levels of four picocuries of radon per liter (pCi/L) of indoor air are considered dangerous to health.\textsuperscript{93} Radon is found in varying concentrations throughout the United States with moderate levels found in Oregon, generally under the four pCi/L level. When the annual average concentration in a home exceeds four pCi/L, it is recommended that measures be taken to lower the concentration to below the four pCi/L level.\textsuperscript{94}

Three of seven zip codes (North and South Corvallis and Philomath) in Benton County have had homes tested for radon, a total of 393 houses, according to state data. The average pCi/L level in these homes is 2.3 pCi/L, leading to a determination of moderate risk in this part of Benton County.\textsuperscript{95}

**Tobacco-free Spaces**

Tobacco use is still the leading preventable cause of death and disability in Linn County. Statistics on tobacco related diseases and deaths are discussed in Chapter 6: The Health of Our Bodies.

As stated in Oregon’s Tobacco Prevention and Education Program (TPEP) report, tobacco use is a major risk factor for developing heart disease, diabetes, arthritis, asthma, and many cancers. Secondhand smoking, or exposure to a smoker’s exhaled smoke, has also led to significant chronic disease and death. In light of this, the county and the state have taken steps to reduce exposure to tobacco and cigarette smoke in public places. Promoting smoke-free environments is a proven strategy to reduce tobacco use and exposure to secondhand smoke.\textsuperscript{[i]}

The Oregon Indoor Clean Air Act prohibits smoking and other tobacco products in most workplaces, schools, bars, and other indoor public spaces.\textsuperscript{[ii]} It was recently expanded to inhalant delivery systems such as e-cigarettes and vaping equipment.

Currently, Oregon law prohibits smoking and other tobacco products in most workplaces, schools, bars, and other indoor public spaces. County property in Benton County is 100 percent tobacco free. This includes both structures and open spaces. The City of Corvallis has banned
smoking at city parks. Many governmental bodies are expanding smoke- or tobacco-free policies to explicitly include e-cigarettes.  

Within the county, a number of non-governmental entities also restrict or ban tobacco on their properties. Oregon State University is 100 percent tobacco free and smoking is not allowed in OSU research forests. Linn-Benton Community College restricts tobacco use to designated smoking areas. Samaritan Health Services, the Corvallis Clinic, and other health providers ban tobacco products, as does Willamette Neighborhood Housing Services and other low-income housing services. Linn-Benton Housing Authority is smoke free at most of its units, with restrictions in place on the few that permit smoking.  

Transportation

Transportation links people and places, making it possible to get to work, to school, to recreational opportunities, and to the grocery store. Transportation includes more than roads, walkways, or bridges. It also encompasses public transit systems, policies that dictate the location and construction of roads, and guidelines for accommodating different kinds of users. Guidelines are important for providing avenues for physical activity, and for reducing the potential of driver, cyclist, and pedestrian injury.

Access to Public Transportation

Access to public transportation is an important public good. Not only does taking public transportation provide additional opportunities for exercise, but the presence of public transportation also makes it easier for individuals and families without private transportation to access goods and services vital to maintaining health. These include grocery stores, health and dental care, and recreation facilities. In Oregon, counties with large metropolitan areas relative to county population size tend to have more public transportation options. Approximately 50 percent of Benton County residents live within one quarter of a mile from a bus stop. Most of those residents live in Corvallis and Philomath. This is the second highest percentage in the state, following only Multnomah County (comprised largely of Portland). Although distance to a public transportation route is one measure of the strength of a public transportation system, additional factors impact the strength of public transport, including frequency and hours of operation, direct routes, and connections to other routes.

People of color, people experiencing poverty, people with disabilities, and people who experience language barriers are more likely to depend on public transit. However, they often live in areas with poor transit service, fewer destinations, and poor connectivity. These unfair burdens increase transportation costs and stress, and limit access to economic and educational opportunities, housing, healthy foods, and physical activity. Vulnerable populations often have unsafe transportation conditions, including limited safe crossings, areas with high-speed traffic, and poor sidewalk and bicycle infrastructure.
Active Commuting

There is a strong correlation between access to public transportation and using active transportation (which includes public transportation, cycling, and walking) to commute to work. Among Oregon counties with public transit systems, an increase of five percent of the population within one quarter mile of a bus station is associated with a one percent increase in the percent of the working population that commutes by active transportation. This trend is reflected in regional statistics as well. Approximately 18 percent of Benton County residents commute using bus, bicycle, or foot travel, compared to 10 percent of all Oregonians. Furthermore, 16 percent of active commuters in Benton County bicycle or walk to work, while only six percent of state-wide commuters bicycle or walk.

Corvallis is a nexus of bicycle and pedestrian commuting, given its network of bike lanes and its relatively compact footprint. Reviewing bicycle and pedestrian safety in Corvallis is useful for understanding road safety in Benton County as a whole. Corvallis Right of Way, a nonprofit group, tracks the number of collisions between motor vehicles and bicycles, and between motor vehicles and pedestrians, based on police reports. Between May 2011 and June 2015, there were 226 collisions between motor vehicles and cyclists, a rate of 56 collisions per year. 77 percent of the collisions were determined to be the fault of motorists, and 23 were determined to be the fault of cyclists. The most common reason for collisions was failure on the part of the motorist to yield to the cyclist. A recent analysis of bicycle collision data was conducted in Davis, California, and provides a useful comparison. An average of 64 collisions occurred each year between 2009 and 2012. This study did not assign responsibility for collisions, but the causes (turn yielding, lane changes, etc.), were similar in proportion to the Corvallis data.

During the same time period, there were 73 collisions between motor vehicles and pedestrians, with the motorist found at fault in 89 percent of them. The most common cause was again failure on the part of the motorist to yield.

Commuting Patterns

Most workers in the region drive to work. Among Benton County residents, 65 percent of the workforce drives to work alone, with an additional eight percent carpooling.

Commuting to jobs outside of one’s city of residence is common for many Benton County residents. Approximately 19 percent of county residents who work report driving for 30 minutes or more to work, compared to 30 percent statewide. A longer commute is associated with negative health effects in a number of ways. Longer commutes have been associated with greater levels of stress. Car commuting has also been linked with physical ailments such as lower back pain, increased likelihood of obesity, and less time for recreation.

* Davis, California is a college town of 65,000 people with an active bicycle community.
relaxation, or sleep. Working outside one’s city of residence can also make it more difficult to access medical care, either for the worker or his or her family.

Workers in the county average a 10-20 minute commute, however the travel time varies greatly between cities. Smaller cities generally have a larger proportion of workers who travel long distances for work. Adair Village, Monroe, and Philomath are smaller communities approximately 10-15 minutes away from their closest metropolitan areas and all have correspondingly higher rates of long-distance commuting. Corvallis has a lower proportion of workers (approximately 15%) who commute for more than 30 minutes each way than the rest of the county.108

The location where residents work compared to where they live also influences transportation choices. Workers who must travel outside of the county may find that public transportation and ride sharing is not an option due to distance, time and availability. Twenty-three percent of Benton County workers work outside Benton County.

**Public transit**

In 2009, the city bus service operated by Corvallis Transit System recorded slightly more than 650,000 rides. By 2015, this had increased to close to 1.2 million rides. As of 2015, there were 18 rides for each resident of Corvallis. This significant increase in ridership included periods of time both before and after the bus became free to ride (fareless) in February 2011. Ridership by individuals with disabilities (ADA ridership) has increased from 6,000 rides per year in 2009 to 8,000 rides over the same period. This is 1.3 rides for each resident with a disability.

In addition to the main city bus, Corvallis Transit System operates express routes between Corvallis and Albany, along Highway 99, and between Corvallis and Lincoln County. Ridership in 2015 totaled approximately 9,400 rides.109

Benton County Special Transportation Fund provided over 75,000 trips for adults age 60 and older and individuals of all ages with disabilities in 2016 through the Dial-a-Bus program. The program serves over 1,000 people in Benton County.110 Dial-a-Bus provides curb-to-curb transportation within Benton County and connects individuals with similar services in neighboring counties. Dial-a-Bus provides critical access to seniors and individuals with disabilities who live in rural parts of Benton County or other areas not served by public transit.

**Access to Healthy Foods**

Transportation options and limited public transportation for residents contributes to challenges in the region with regard to nutritious food access. For households without private vehicles, the ability to shop for food at grocery stores is highly dependent on proximity. Nineteen percent of households in Benton County are within one half mile of a grocery store, about equal to the state average. The average distance between a household and the nearest grocery store
is 2.13 miles. \textsuperscript{111} However, since grocery stores tend to be located in larger towns, the county average may overestimate the urban average and underestimate the rural average.

Access to nutritious foods can be particularly difficult for residents with unreliable transportation or tight budgets. A rural community is considered to have low access to food when it is ten or more miles from a supermarket or large grocery store. \textsuperscript{112} Rural residents must often travel long distances for food. For rural residents this could mean traveling as much as 20 miles to the nearest full service grocery store. Rural grocery stores throughout the county report barriers that may limit rural low-income families’ access to healthy food. These include: administrative barriers to becoming an authorized vendor for SNAP and WIC programs, economic barriers to offering fresh fruits and vegetables, meat, dairy and other refrigerated foods. \textsuperscript{113} For residents in non-rural areas, the most accessible grocery store may also not be the most affordable.

Approximately five percent of Benton County residents do not live “close” to a grocery store (defined as within 1 mile for urban residents or within 10 miles for rural residents). \textsuperscript{*} Nearly two times as many residents live within one half mile of a tobacco vendor compared to those who live within one half mile of a grocery store or a WIC authorized store (Table 3.3). \textsuperscript{114}

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|}
\hline
\textbf{Store type} & \textbf{Average (mean) walking distance in miles} & \textbf{Percent of population living within ½ mile} \\
\hline
Grocery stores & 2.1 & 19 \% \\
WIC-authorized stores & 2.1 & 18 \% \\
Tobacco vendors & 1.3 & 34 \% \\
\hline
\end{tabular}
\caption{Proximity to grocery stores compared to tobacco vendors in Benton County, 2012}
\end{table}

\textit{Source: Oregon Environmental Public Health Tracking Tool}

In addition to access to nutritious food, proximity to fast food can affect the health of the community. Although complex in nature, the food environment can impact what people eat, and providing healthy options is vital for the health of the community. Studies have shown an increase in the prevalence of obesity and diabetes with increased access to fast food outlets in a community, although one has not been proven to cause another. Forty-six percent of restaurants in Benton County are fast food vendors, compared to 21 percent in Lincoln County and 38 percent in Linn County. \textsuperscript{115}

\section*{Food Safety and Health Inspections}

Food safety falls under the jurisdiction of county health departments when food is served in restaurants or from mobile vendors. The Centers for Disease Control and Prevention has five categories of foodborne illness risk factors. These are:

- Improper holding temperatures;
- Contaminated equipment;

\textsuperscript{*} “Close” is defined as within 1 mile for urban areas and within 10 miles for rural areas

\textsuperscript{114}
- Poor personal hygiene;
- Unsafe sources; and
- Inadequate cooking.\textsuperscript{116}

County health inspectors conducted 100\% of the required 520 restaurant inspections for the county in 2015, as well as 137 reinspections. There were 20 food complaints, 66 foodborne illness complaints, and three foodborne illness investigations. There were two failure-to-comply notices, no summary closures, and no voluntary closures.\textsuperscript{117}

Food sold in grocery stores is under the jurisdiction of the Oregon Department of Agriculture. A total of 240 facilities in Benton County are licensed by the Oregon Department of Agriculture, which includes grocery stores, bakeries, distilleries, and meat and egg processors.\textsuperscript{118}

### Environmental Hazards

The majority of the regional population does not come into contact with large-scale, human-caused environmental hazards on a regular basis. However, the presence of contaminants in the community, such as sewage overflows, environmental clean-up sites, and pesticide applications, demonstrates some of the broader potential for health exposures that can impact the health of the region.

#### Domestic Sewage Systems

The majority of waterborne disease outbreaks are caused by bacteria and viruses present in domestic sewage. Septic tanks are the largest contributor to bacterial and viral groundwater contamination. Health risks are higher in areas where older, failing septic systems discharge untreated or partially treated sewage above or below ground, potentially contaminating nearby streams and wells.

As of May 2017, there were 15 certified wastewater system collection operators and 20 certified wastewater system treatment operators in Benton County.\textsuperscript{119}

The Oregon Department of Environmental Quality (DEQ) has 66 active permits for wastewater disposal in Benton County as of May 2017.\textsuperscript{120} These permits are designed to limit storm water run-off, industrial wastewater, sewage, and other sources of water pollution.

#### Environmental Clean Up Sites and Leaking Underground Storage Tanks

The Oregon Department of Environmental (DEQ) Cleanup Program protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances. The program’s objective is to improve sites to the point where no further cleanup action is necessary.
The Oregon Community Right to Know and Protection Act (ORS 453.307-453.414) is a law that makes information about hazardous materials in Oregon available to emergency service personnel, emergency planners, health officials, and the public. Facilities throughout Oregon that are storing a reportable quantity of hazardous substances are required to annually report this information to the State Fire Marshal. Incidents that release hazardous materials into the environment may occur in facilities that manufacture, use, or store these substances. Incidents may also occur during transport of these materials or by equipment malfunction.

The DEQ is tracking and monitoring 49 environmental clean-up sites in Benton County. Sites contain different levels and types of contamination from hazardous substances including petroleum from residential heating oil tanks, regulated tanks at gas stations, and other commercial facilities. Some sites may have one contaminant in a small area of shallow soil, while others may have high concentrations of many substances in soil, surface water, sediments or groundwater.

The DEQ’s Land Quality Division also runs Oregon’s Leaking Underground Storage Tank Program. An underground storage tank system is a tank or any underground piping that is attached to the tank and has about ten percent of its combined volume underground. These underground storage tanks may store petroleum or other hazardous substances that can pose a risk to groundwater quality if leakage occurs. Oregon’s program handles issues related to clean up of soil and groundwater contamination from spills or releases and enforces state and federal rules. In 2016, Benton County documented eight leaking underground storage tanks.

**Pesticide Exposure**

Residents of the region may come into contact with pesticides either through personal use or as a by-product of commercial use for agriculture or forest management. Many pesticides have the potential to harm humans, birds, fish and aquatic organisms, and land-based vertebrates and invertebrates. Due to this potential for harm, the Oregon Department of Agriculture restricts the use of 495 distinct pesticide products, comprising over 100 different active ingredients. Some better-known compounds include atrazine, permethrin, and organophosphates. A 2013 study of pesticides and herbicides lists glyphosate as one of the most common active ingredients in aerial spraying. Glyphosate is also widely available in home products. Many agricultural operations such as wheat, annual rye-grass, and other cash crops also rely on herbicides. Grass and crop fields are sprayed on an annual basis to clear the fields for a new crop the following year.

In the 2009-2011 period, Benton County reported seven cases of acute pesticide related illness, compared to Linn County’s reported eight cases, and Lincoln County’s zero reported cases. The number of pesticide related illnesses for Benton County is well above the mean (4.75 cases) and median (1 case) of all Oregon counties, but these small numbers indicate the likelihood of high variability in the data. Statewide, the majority of pesticide related illness occurs in residential use (69 percent), as opposed to work, agricultural, or industrial use. The majority of residential
illnesses were due to exposures not related to actual use of a pesticide (63 percent), but rather as accidental contact with pesticides applied earlier. A further 28 percent of residential exposures occurred during application of pesticides. These proportions were similar for work-related pesticide exposures. Anyone using pesticides should take reasonable precautions to avoid direct contact or inhalation, and limit secondary exposure through accumulation on clothes or equipment.

Local Data

The following are descriptions of local data collected by Benton County Health Department and partners are taken in part or in full from existing documents. Sources are cited at the bottom of each section.

Well water testing

In 2016, Benton County Environmental Health received a grant to provide free well-water testing to 30 residents. The county had participated in the same program the previous year, and in 2016 they incorporated a health equity approach in their outreach.

Out of the 30 wells tested, 10 tested positive for nitrates, a water pollutant that can cause serious harm to infants. Three of these wells had nitrate results exceeding the maximum contaminant level (10 parts per million); all of these were located in the Southern Willamette Valley Groundwater Management Area.

6 wells tested positive for arsenic, a carcinogen that is concentrated in the body as it is consumed. None of these wells tested over the EPA limit of 0.01 parts per billion, but there is no known safe level of arsenic for consumption.

10 wells tested positive for coliform, which indicates that the well has been contaminated with fecal matter. One of these wells was positive for E. Coli.

Overall, 19 of the 30 wells tested positive for one or more contaminants; 7 wells tested positive for multiple contaminants. Benton County Environmental Health followed up with the well owners, providing them additional information about well safety and how to remediate well contaminants.

North Albany County Park

Benton County Health Department partnered with Benton County Parks and Natural Areas to update the North Albany County Park Master Plan in a way that will reflect the needs of the neighbors and provide amenities that support a healthy, livable community. As part of this process, the two departments conducted an observational study, key informant interviews, and
a public meeting. Data from these assessments gives insight into recreation in North Albany and also throughout the county.

The majority (69 percent) of North Albany County Park users were observed in sedentary activities such as sitting or picnicking. Twenty-eight percent of users were engaged in moderate physical activity such as walking or light exercise. Three percent of users were very active.

The most consistent message was that neighbors like the open space, the natural areas, and the rural character of the park. While the majority of Benton County residents live in cities, they are very connected to natural areas and value the rural character of the county.

In North Albany County Park, as well as in other city and county parks, the playgrounds were seen as deteriorated and in need of updating. Also, while North Albany County Park is close to housing, many respondents identified the need for better foot access. This is also a challenge for other county parks, which are frequently too distant from neighborhoods to be accessed by non-motorized transit.130

Community Health Inclusion Index

Through the recently funded National Association of Chronic Disease Directors grant, the Benton County Healthy Communities/Developmental Diversity program conducted disability assessments at 17 locations in rural and urban Benton County. Assessments were completed at schools, public parks, community organizations, government buildings, and medical facilities. Each of the 17 sites was chosen by a community coalition of disability rights advocates who recognized the needs that exist in these 17 locations.

Preliminary results from the surveys indicate that community facilities for public transit and walking/biking are mostly excellent and that most buildings have many accommodations for people with disabilities. Common themes among the challenges highlighted by the survey include accessible parking, promotion of activities for people with disabilities, healthy food accessibility at community locations, and playgrounds and workout facilities that fully accommodate people with disabilities.

As a result of these studies, three main areas of need rose to the top as community priorities:
1. downtown Corvallis - need to address a lack of parking in the downtown Corvallis area for people with disabilities. An assessment of a downtown Corvallis community organization, the Majestic Theater, highlighted the need to increase accessibility not just for Majestic Theater patrons for but at many downtown Corvallis businesses. The assessment results showed that very little parking exists in downtown Corvallis for people with disabilities and that the parking that does exist is often far away from places that people want to go. There is also very little space for pickups and drop-offs of people with disabilities that need more room to maneuver when entering and leaving their vehicle. The results of this assessment
were shared with community partners who confirmed the need to address the lack of parking for people with disabilities in the downtown area.

2. Monroe Library - The main entrance of the library is approximately 100 feet from the one handicap accessible parking spot in the parking lot. There is parking available on the cross street, Ash Street, and another entrance at the corner of Ash Street and N 5th Street. A dedicated handicap accessible parking space on Ash Street would be much closer to the secondary entrance of the library. In addition, neither entrance has a power assist door.

3. SamFit Albany - SamFit in both Albany and Corvallis serves approximately 3,000 people at each site every month. The results of the CHII survey highlighted a number of areas of opportunity for both locations to increase accessibility for people with disabilities: new equipment can be purchased; healthy food can be offered; and bathrooms, hallways, workout spaces, parking, and entrances can be made more accessible. SamFit is associated with the local hospital system and has a stated goal of reaching all people within our community.

Conclusion

From particulate matter to ocean temperature, the health and stability of the environment that we live in creates opportunities and hazards for our own health. We rely on the natural resources of our region to maintain our livelihoods while being available for our enjoyment. We expect our built environment to function in our day-to-day lives and help us make healthy lifestyle choices. Our environment shapes who we are, even as we shape our environment. Slow trends and sudden disasters can have wide-reaching effects for everyone living in our region. Intersections between individual health and environmental factors are often complex but undeniable. In subsequent chapters, the complex nature of environmental factors will be better understood and highlighted through the lens of social determinants of health.
Chapter 4
Social Determinants of Health

Opportunities for health among residents of Benton County and its neighbors begin within their communities including their homes, neighborhoods, places of worship, workplaces, and schools. A growing body of scientific research shows that all people benefit when communities invest in health.

The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.” These non-medical factors contribute to a large percent of preventable poor health outcomes. Social determinants include influences such as: “early years’ experiences, education, economic status, employment and decent work, housing and environment, and effective systems of preventing and treating ill health.” These aspects of health are often referred to as “upstream factors” since their effect occurs well before illness manifests and curative intervention becomes necessary. In this chapter regional data will be presented for education, employment, income, poverty, economic challenges, food security, home ownership, and homelessness. Environmental factors have been presented in Chapter 3, and access to health services will be presented in Chapter 5.

Income, Poverty, and Economic Challenges

Income and Poverty

Income and poverty are the strongest predictors of health among all social determinants of health. Not only are there many studies showing a strong association between income and health, but income also affects all other social determinants of health, including education, food security, and housing. The National Longitudinal Mortality Survey observed that people in the top five percent of incomes had life expectancies 25 percent longer than people in the bottom five percent of incomes. While income, poverty, and income inequality are not “one size fits all” measures of health, understanding the income of the region provides a solid foundation for measuring social determinants of health in Benton County. This is particularly true in Benton County, which has the highest income inequality in the state.

Income

Income influences an individual’s ability to choose where to live, what food to eat, participation in physical activities (especially those that require fees or special equipment), and availability of leisure time. Regional data is highlighted here, as the story of economic disparity is similar across all three counties.
Median and Per Capita Incomes

The median income of a population is one measure of the overall income in that population; 50% of the population earns more than the median income, and 50% of the population earns less. The median (inflation-adjusted) household incomes in Benton County is higher than in neighboring counties (Lincoln and Linn), but lower than in Oregon. (Table 4.1).

Table 4.1: Median household income of Linn, Benton, and Lincoln counties and Oregon, 2011-2015

<table>
<thead>
<tr>
<th></th>
<th>Benton</th>
<th>Lincoln</th>
<th>Linn</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median household income</td>
<td>$49,802</td>
<td>$42,101</td>
<td>$45,644</td>
<td>$51,243</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau American Community Survey, 5-year estimates

Per capita income is another measure of income. It is the average income of a person. Per capita income is lower than median household income because it is per person, not per household. Figure 4.1 below displays the per capita income of different racial and ethnic subpopulations in Benton County.

Figure 4.1: Per capita median income by race or ethnicity in the Benton County, 2011-2015

Figure notes: Black or African American and Native Hawaiian or Pacific Islander data is suppressed due to small sample sizes. American Indian or Alaska Native, Multiple races, and Other race data should be interpreted with caution due to small sample sizes.

Source: U.S. Census Bureau American Community Survey, 5-year estimates

Income Inequality

Income inequality (the distribution of wealth between richer and poor segments of the population) is associated with many health outcomes. Regions with higher inequality are more likely to experience increased infant mortality, lower life expectancy, higher rates of
depression, and lower health status overall. Income inequality can decrease upward mobility, making it more likely that a person born into poverty will remain in poverty. Income inequality can segregate a community so that those who experience poverty experience separateness in the community and don’t have access to networks of opportunity. Income inequality is commonly measured by calculating the ratio of the 80th income percentile to the 20th income percentile of the population. In Oregon, the 80th income percentile is 4.7 times the 20th income percentile (Figure 4.2).

Benton County has the highest income inequality in the state with a ratio of 6.0, and is among the two percent of all counties in the United States with the highest income inequalities when measured in this way.

**Figure 4.2:** Income inequality: ratio of the 80th income percentile of residents to 20th income percentile of residents in Benton, Lincoln, and Linn counties, and the state of Oregon, 2015

Figure notes: This measure of income inequality is taken by computing the 80th income percentile (the dollar amount that is greater than 80% of household incomes in the geography), computing the 20th income percentile, and dividing the result. A larger ratio indicates more income inequality.

Source: U.S. Census Bureau American Community Survey, 5-year estimates, 2011-2015

**Poverty**

Poverty is strongly linked to poor health outcomes. Poverty is related to both limited income and lack of economic stability, limited choices in education, employment, and living conditions, and reduced access to safe places to live, work, and play. It can also frequently hinder choices and access to healthy food.

* The 80th income percentile is the income of the individual who earns more than 80 percent of the population. The 20th income percentile is the income of the individual who earns more than 20 percent of the population. Those who earn more than the 80th income percentile are the richest 20% of the population; those who earn less than the 20th percentile are the poorest 20% of the population.
The United States Census Bureau determines the Federal Poverty Level (FPL) each year. The Federal Poverty Level was originally an estimate of the amount of money required to meet the cost of living for individuals or families, but over time the measure has become less realistic in terms of estimating what would support an individual’s or family’s minimum needs and does not take into account the differences in cost of living across the country. It is not generally recognized as an accurate measure of true poverty, but it is used for determining eligibility for assistance programs. Below, in Table 4.2, the Federal Poverty Level for individuals and families is presented, as well as additional Federal Poverty Level ratios that are used for eligibility and comparison purposes.

Table 4.2: Annual Income and Federal Poverty Levels and related ratios for 2017

<table>
<thead>
<tr>
<th>Family size</th>
<th>Percent of Federal Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 %</td>
</tr>
<tr>
<td>Individual</td>
<td>$ 6,041</td>
</tr>
<tr>
<td>Three person family</td>
<td>$ 9,436</td>
</tr>
<tr>
<td>Four person family</td>
<td>$ 12,129</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Historical Poverty Threshold Table

Approximately 22 percent of Benton County’s population lives below the federal poverty line, compared to 17 percent of Oregon’s total population. Benton County’s regional neighbors have a rate of poverty similar to the state-wide rate, with 17 percent of Lincoln County residents living below the federal poverty line, and 19 percent of Linn County residents. Benton County’s greater percent of the population living below the federal poverty line is partly due to poverty among 18 to 24 year olds, which is nearly twice that among individuals of the same age group in the rest of Oregon (Figure 4.3). The poverty rate among this age group, combined with the large proportion of Benton County residents that are between age 18 and 24, is the reason that Benton County’s poverty rate is very high. Another worrisome statistic is that children less than five years of age are among the age groups with the highest percentage living below the federal poverty level, accounting for nearly a quarter of children under five years of age in Benton County.

[Figure 4.3 is displayed on the following page]
Earning less than a high school education increases the risk of experiencing poverty. Of the adults in Benton County over the age of 25 who did not complete high school, 35 percent are below the federal poverty line, compared with 18 percent of those who completed high school. These figures are slightly higher than those of Benton County’s regional neighbors, with 28 and 24 percent, respectively, of Lincoln and Linn County’s adult population over the age of 25 that did not complete high school living below the federal poverty line.

Variation also exists between racial and ethnic population groups. As shown in Figure 4.4, all racial and ethnic groups in the region have a higher poverty rate than the White, non-Hispanic/Latino population, which is similar to Oregon overall. Individuals in Benton County who identify as Hawaiian or Pacific Islander and Asian are among the racial/ethnic groups with the highest poverty rates at 90.8 percent and 45.5 percent, respectively. It is important to note, however, that the population for these racial/ethnic groups, in addition to the American Indian and Asian populations, is small relative to other groups within the county, which creates more uncertainty in the estimates.
Children Living in Poverty

A growing body of research shows that children who are raised in families experiencing long-term poverty are at greater risk of significant and long-term deficits in health. Across Benton County, approximately one in four children under the age of five were living in poverty (24.5 percent) in 2015. That same year, an estimated 15 percent of children under 18 years of age in the region were living in households earning less than the federal poverty level. This accounts for approximately 2,200 residents of Benton County. In comparison, Oregon and the United States have higher rates of childhood poverty (each 22 percent).

Low Income and Cost of Living

Many regional residents earn incomes higher than the federal poverty level but still struggle economically to meet their everyday needs. Approximately 36 percent of Benton County’s population earn less than 185 percent of the federal poverty level ($21,775 annually for an individual or $44,863 annually for a family of four in 2015). This is the threshold that many assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), use for income eligibility.

Research suggests that the cost of living in Benton County is well above the federal poverty level. Table 4.3 below shows the cost of living for three family types in Benton County and the
corresponding percentage of the Federal Poverty Level. These figures take into account costs such as housing, child care, food, transportation health care, and taxes.\textsuperscript{146}

Table 4.3: Cost of living as a percent of the federal poverty level in Benton County, 2014

<table>
<thead>
<tr>
<th>One adult, one preschooler</th>
<th>One adult, one preschooler, one school-age</th>
<th>Two adults, one preschooler, one school-age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual cost of living</td>
<td>Percentage of FPL</td>
<td>Annual cost of living</td>
</tr>
<tr>
<td>$44,684</td>
<td>284 %</td>
<td>$55,389</td>
</tr>
<tr>
<td>$62,671</td>
<td>263 %</td>
<td></td>
</tr>
</tbody>
</table>

Source: The Self-Sufficiency Standard for Oregon

Employment

Stable and secure employment influences health, not only by being a source of income, but also by providing access to health insurance. Compared to unemployed workers, individuals who are employed fulltime have higher incomes and standards of living, less stress, and may be less likely to turn to unhealthy coping behaviors such as alcohol consumption or smoking.\textsuperscript{147} The 2017 annual seasonally adjusted unemployment rate in Benton County in 2016 was 3.9 percent, compared with 4.9 percent statewide.\textsuperscript{148} The unemployment rate has been decreasing steadily since 2009 and reached 2.8 percent in Benton County in April 2017.\textsuperscript{149} Generally an unemployment rate of 5 percent is considered “full employment” as there is always a certain amount of turnover in the labor force.

Economic Activity

The education, health care, and social assistance sector employs approximately 38 percent of the workforce in Benton County, compared with just under one-quarter of the population statewide (23 percent). The next most populous economic sectors are the professional, scientific, management, administrative and waste management services sector and the arts, entertainment, recreation, accommodation and food services sector, each employing approximately 10 percent of the workforce.\textsuperscript{150}

Education

Health and education are closely connected. Educational access and attainment are very important predictors of health status. Individuals with higher levels of education are less likely to die prematurely or report acute diseases. They also report positive health behaviors, like maintaining healthy weight, and fewer risky behaviors, like smoking.\textsuperscript{151} Furthermore, education levels are the strongest predictor of income and wealth, which strongly influence lifelong health.\textsuperscript{152}
Early Learning

Early childhood development supports nurturing relationships and learning opportunities that foster children’s readiness for school. The early years are crucial for influencing health and social well-being across a child’s lifetime. Research evidence accumulated over the past 40 years supports the conclusion that children who participate in high-quality early childhood development (ECD) programs benefit from a broad range of immediate and long-term health benefits.153

The Head Start Program is one such federal program that promotes the school readiness of children from low-income families by enhancing their cognitive, social, and emotional development. Head Start programs provide a learning environment that supports children’s growth from birth to age five in several areas, such as language, literacy, and social and emotional development. Head Start programs also emphasize the role of parents as their child’s first and most influential teacher and support the development of healthy familial relationships and well-being.154 In Oregon, Head Start programs include at least the Oregon Head Start Prekindergarten (OHS PreK) program, which serve children ages three to five from low-income families. Some Head Start programs also include Early Head Start (EHS), which is a comprehensive program for children below the age of three and pregnant women from low-income families. Oregon children whose families are below the federal poverty level ($24,250 for a family of four) are eligible for these benefit programs.155

Table 4.4: Oregon Head Start PreK and Early Head Start programs and enrollment by county, 2014-2015

<table>
<thead>
<tr>
<th>OHS PreK and EHS program</th>
<th>County</th>
<th>OHS PreK enrollment</th>
<th>EHS enrollment</th>
<th>Total enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids and Company of Linn County</td>
<td>Linn and Benton</td>
<td>466</td>
<td>52</td>
<td>518</td>
</tr>
<tr>
<td>Oregon State University Child Development Center</td>
<td>Benton</td>
<td>76</td>
<td>0</td>
<td>76</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education, Early Learning Division, Oregon Head Start Pre-kindergarten Programs

Despite strong research showing the positive impact of high-quality early education, many families in the region who are in need of child care may not be served. While data are not available for informal child care options, in 2014, for every 100 children there were 22 available child care slots in Benton County, down from 24 available slots in 2012. In Oregon, there were 17 available child care slots per 100 children. The goal for the state is 25 slots per 100 children; all counties in the region failed to meet the goal, with Lincoln and Linn counties at 19 and 12 slots, respectively. In addition to availability, price may be a barrier for many families. The average annual cost of toddler care in child care centers in Linn, Benton, and Lincoln counties are shown in Figure 4.5 on the following page. To give an example, two parents, both earning $9.75 per hour (Oregon’s minimum wage) in full time jobs would make approximately $39,000 for their household (before taxes, credits, or adjustments). The median annual cost of child
care for one child in Benton County is $13,100, which is one third of these parents’ household income.

**Figure 4.5: County-level median annual cost of child care for a toddler, 2014**

![Bar chart showing the median annual cost of child care](chart.png)

Figure notes: There are approximately 3,700 children under the age of 5 in Benton County. The median annual cost of child care is equal to 25% of the median annual household income in Benton County.

*Sources: Oregon State University, Child Care and Education in Oregon and Its Counties, 2014; U.S. Census Bureau American Community Survey 5-year estimates, 2011-2015*

**High School Education**

High school graduation is a strong predictor of future employment and earnings. Conversely, dropping out of school is associated with lower income, multiple social and health problems, and health risks. For example, 32 percent of Oregonians who do not have a high school degree smoke, compared with 24 percent of high school graduates, 18 percent with some post-secondary education, and seven percent of college graduates (age-adjusted).

In the 2015-2016 school year, Benton County experienced a high school dropout rate of 9 students per 1,000 9th–12th graders, well below the Oregon rate of 35 per 1,000 high school students. The dropout rates for Benton County and Oregon are shown in Figure 4.6.
Within the county, the high school dropout rate for minority youth populations is generally higher compared to the total county dropout rate. Among underserved racial and ethnic groups, the dropout rate in 2015-2016 was 13.3 per 1,000 students, compared to 9.1 per 1,000 among all students.\textsuperscript{161}

In 2011, Oregon set a goal of 40-40-20, meaning that by 2025, 40 percent of Oregonians age 25 and above would have a bachelor’s degree or higher, an additional 40 percent would have an associate’s degree, and the remaining 20 percent would have graduated high school. This translates to a goal of 100% of Oregonians having a high school degree or higher and 80% having an associate’s degree or higher.\textsuperscript{162} As of 2015, approximately 95% of Benton County residents 25 and older had completed high school or GED equivalent. Out of all Benton County residents, 27% had an associate’s degree or some college, while 53% had a bachelor’s degree or higher (Figure 4.7). The proportion of individuals who have a bachelor’s degree or higher in Benton County is significantly higher than the overall state percentage of 31 percent; the proportion of high school finishers and above is also 5 percent higher in Benton County than Oregon as a whole.\textsuperscript{163}
Education among Oregon Health Plan Members

When reviewing education measures, differences between Oregon Health Plan members and the general state population are quite clear. According to the 2014 MBRFSS survey, 23.3% of OHP adults did not receive a high school diploma or GED (compared with 11.1% in the general population). The same study revealed that 12.8% of those on OHP had graduated college, less than half of those in the general population (26.5%).

Food Security

Food security is defined as having enough to eat, and being able to purchase or obtain healthy food in socially acceptable ways. Adequate nutrition is particularly important for children, as it affects their cognitive and behavioral development. Children from food insecure, low-income households are more likely to experience irritability, fatigue, and difficulty concentrating on tasks, especially in school, compared to other children.

Feeding America, a national nonprofit that monitors food security, estimates that 27 percent of children in the region are living in food insecure households, more than one out of every four children.
Oregon Department of Education data report 38 percent of regional K-12 students were eligible for free or reduced lunch during the 2016-2017 school year. The percentage of students eligible for free or reduced lunch varies significantly from school-to-school, from 18 percent to 69 percent of students attending schools with at least 100 students (Table 4.5). Students whose family incomes are below 130 percent of the federal poverty level ($31,525 annually for a family of four) are eligible for free lunches, and students whose family incomes lie between 130 and 185 percent of the federal poverty level (between $31,525 and $44,863 annually for a family of four) are eligible for reduced-price lunches.

Table 4.5: Percentage of children eligible for free and reduced-price lunch, 2016-2017.

<table>
<thead>
<tr>
<th>School district</th>
<th>Eligible for free lunch</th>
<th>Eligible for reduced-price lunch</th>
<th>Percent of total students eligible for free or reduced lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alsea</td>
<td>73</td>
<td>23</td>
<td>69%</td>
</tr>
<tr>
<td>Corvallis</td>
<td>1,985</td>
<td>355</td>
<td>35%</td>
</tr>
<tr>
<td>Monroe</td>
<td>200</td>
<td>43</td>
<td>55%</td>
</tr>
<tr>
<td>North Albany schools</td>
<td>223</td>
<td>44</td>
<td>18%</td>
</tr>
<tr>
<td>Philomath</td>
<td>521</td>
<td>116</td>
<td>40%</td>
</tr>
<tr>
<td>Benton County</td>
<td>2,779</td>
<td>537</td>
<td>38%</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
<td></td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education

An analysis of factors* determining food insecurity suggests that in 2015, 16 percent of the regional population, or nearly 14,000 individuals, were residing in households that were food insecure. Among those who were food insecure, 28 percent earned incomes above 185 percent of the federal poverty level, making them ineligible to receive government assistance programs (Table 4.7). The childhood food insecurity rate was higher, at 20 percent of the children in the region. Of the children living in food insecure households in the region, it is estimated that 38 percent of these children are likely ineligible for federal nutrition assistance programs as they live in households with incomes above 185 percent of the federal poverty level.

* Factors include indicators of food insecurity such as poverty, unemployment, median income; food budget shortfalls; a cost of food index; and national average meal costs.

[Table 4.5 is displayed on the following page]
### Table 4.6: Food insecurity in the Benton County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of food insecure individuals</th>
<th>Percent of population that is food insecure</th>
<th>Percent of food insecure population ineligible for benefits *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton County</td>
<td>All residents</td>
<td>13,810</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>2,930</td>
<td>20%</td>
</tr>
<tr>
<td>LBL Region</td>
<td>All residents</td>
<td>39,350</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>12,170</td>
<td>24%</td>
</tr>
<tr>
<td>Oregon</td>
<td>All residents</td>
<td></td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td></td>
<td>23%</td>
</tr>
</tbody>
</table>

* indicates that the percent ineligible figure is produced by modeling and is an estimate.

Source: Feeding America

#### Supplemental Nutrition Assistance Program Participation

The Federal Supplemental Nutrition Assistance Program (SNAP) is the largest domestic food and nutrition assistance program for low-income Americans. U.S. households must meet certain eligibility criteria, such as income, to receive benefits. As of 2015, an estimated 13 percent of all households (4,476 of 33,840 households) in Benton County received SNAP benefits, compared to 19 percent in Oregon. Of the households in Benton County that received SNAP benefits, 51 percent (2,269 households) had an income in the past 12 months below poverty level, and 49 percent (2,207 households) had an income in the past 12 months at or above poverty level. Of the remaining 87 percent of households (29,364 households) that did not receive SNAP benefits, 17 percent (4,999 households) were below the poverty level. Furthermore, 37 percent of benefit-receiving households that received Food Stamps/SNAP benefits during this time supported children under the age of 18. This rate is lower than Oregon’s 46 percent.

#### Women, Infants and Children (WIC)

WIC is a public health nutrition program that is vital to the health of women, infants, and children across Oregon. The WIC program provides health and nutrition services to pregnant and breastfeeding women and children ages 0 to 5 that have a household income less than 185 percent of poverty guidelines. Overall in 2016, a total of 1,266 families were served by WIC in Benton County; 70 percent of these were infants and children under five, and 30 percent were pregnant, breastfeeding, and post-partum women. Approximately 32 percent of pregnant women in Benton County were served by WIC, as well as 72 percent of all working families in the county.
Emergency Food Support

Linn Benton Food Share, the regional food bank system, distributes emergency food boxes to 23 food pantries (emergency food box agencies) located in both Linn and Benton counties. In addition to the pantries, Linn Benton Food Share also provides assistance through programs, such as emergency meal sites (soup kitchens), supplemental programs, and gleaners and wood share.¹⁷⁵

Below are the most salient demographic characteristics of the population that is served by the Linn Benton Food Share:

- 36 percent of those receiving emergency food are children;
- 7 percent of those receiving emergency food are 65 years and older;
- 55 percent of households have children;
- 46 percent of households had at least one member working;
- 30 percent of households have one or more member working a full-time job;
- 58 percent of households report delaying medical care;
- 68 percent of households report delaying dental care;
- 47 percent of households delay filling medical prescriptions due to cost;
- 56 percent report medical/hospital debts.¹⁷⁶

Linn Benton Food Share distributed over 47,000 food boxes from July 2015 through June 2016.¹⁷⁷ One food box typically contains enough groceries for a four day supply.¹⁷⁸ In addition, the Food Share served over 272,000 meals in soup kitchens and shelters. Between food boxes and emergency meals, Linn Benton Food Share provided enough meals to feed nearly 2,500 people three meals a day for the whole year.¹⁷⁹

Food Security among Oregon Health Plan Members

As previously mentioned, about 16% of the region’s population is food insecure. Among Medicaid recipients, this number climbs to 50.7%. That value is also slightly higher than the reported 48.6% for Oregon’s state-wide Medicaid population. About 24.7% of the region’s OHP members reported hunger, compared with 22.3% of members across the state.¹⁸⁰

Housing and homelessness

Housing is an important part of the built environment and another key factor contributing to good health. Older housing in particular can present multiple threats to health, including the presence of mold, asbestos, lead-based paint, and lead solder in plumbing and in the soil.

Poor quality and inadequate housing contribute to health problems such as infectious and chronic diseases, injuries, and poor childhood development. Indoor allergens and damp
housing conditions play an important role in respiratory conditions including asthma, which currently affects over 20 million Americans, and is the most common chronic disease among children. Approximately 40 percent of diagnosed asthma among children is believed to be attributable to residential exposures.

Residential exposure to environmental tobacco smoke, pollutants from heating and cooking with gas, volatile organic compounds, and asbestos have been linked with respiratory illness and some types of cancer. People who have difficulty paying rent, mortgage or utility bills are less likely to have an established source of medical care, more likely to postpone treatment, and more likely to use the emergency room for treatment. Families who lack affordable housing are more likely to move frequently. Residential instability is associated with emotional, behavioral and academic problems among children, and with increased risk of teen pregnancy, early drug use, and depression during adolescence.

**Housing Affordability**

Affordable, quality housing provides shelter that is safe and healthy for all people. Figure 4.8 below shows the distribution of Benton County residents who rent and own their homes.

**Figure 4.8: Housing renters and owners in Benton County, 2011-2015**

![Housing renters and owners in Benton County, 2011-2015](image)

Figure notes: There are approximately 33,000 households in Benton County.
Source: U.S. Census Bureau, American Community Survey

Housing that costs more than 30 percent of household income is considered to be "unaffordable." Table 4.7 shows the similarities in housing burden between Benton County, the region, and Oregon. Similar to Oregon, 59 percent of renters in Benton County spend 30 percent or more of household income on housing rent. Of home owners with mortgages, 29 percent spend 30 percent or more of household income on housing, compared to 36 percent in Oregon. Of home owners without mortgages, 12 percent spend 30 percent or more of household income on housing, compared to 15 percent in Oregon.
Table 4.7: Occupants with housing cost burden more than 30 percent of income, 2011-2015

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent with housing cost burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton County</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>37 %</td>
</tr>
<tr>
<td>Renters</td>
<td>59 %</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>29 %</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>13 %</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>67 %</td>
</tr>
<tr>
<td>LBL Region</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>30 %</td>
</tr>
<tr>
<td>Renters</td>
<td>55 %</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>35 %</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15 %</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>62 %</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>32 %</td>
</tr>
<tr>
<td>Renters</td>
<td>54 %</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>36 %</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15 %</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>66 %</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey

Home values

Higher home values can indicate healthier homes, since more expensive homes tend to have design or construction features that support health, such as adequate insulation and weatherproofing. Homes are also a major source of wealth, which helps home owners afford health care and other health promoting activities. However, high median home prices can also signal inequality or housing insecurity in a community. Unaffordable housing has strong negative effects on health for many of the same reasons that stable housing promotes health.

Home values as reported by the U.S. Census Bureau, American Community Survey, tend to be out of date. Currently this means that home values are underestimated by ACS data. Zillow.com, a housing website, tracks home values based on recent sales and other assessments, and produces more contemporary estimates. Zillow.com currently estimates the median Benton County home value to be $323,000 (as of May 2017), compared to the ACS estimate of $270,000. The median list price of houses listed on Zillow in Benton County is $373,000. Figure 4.9 shows the change in home values and list prices in Benton County over the past 8 years.
Homelessness

The Oregon’s Ending Homelessness Advisory Council defines homelessness as being without a decent, safe, stable, and permanent place to live that is fit for human habitation. Understanding homeless populations is a challenge for public health. Even counting the number of people experiencing homelessness is a difficult task, because they tend to lack a fixed address or living location, and many individuals change homeless status over time. Each January, communities conduct a point-in-time count of homeless populations. This snapshot of the homeless population is limited in scope and depth. Canvassers visit shelters, transitional housing, and known homeless encampments. Individuals staying with other people out of economic necessity are not counted, nor are homeless people who are in areas not covered by the canvassing. Furthermore, the one-night count misses any individual who is homeless at other points during the year. Notwithstanding these limitations, the point-in-time estimates have the benefit of being a consistent approach across years and geographies, and therefore may give some insight into the homeless population in Benton County.

In 2015, the Benton County point-in-time survey counted 127 individuals experiencing homelessness (Table 4.8). Sixty-eight percent of the homeless population was male.

The most recent data on homeless populations is from 2017 (Table 4.8). In 2017, there were 287 individuals identified in the January point-in-time survey, an increase of 226 percent in two years.
Table 4.8: One-night count homeless population figures, 2015 and 2017

<table>
<thead>
<tr>
<th></th>
<th>2015 Benton County</th>
<th>2015 LBL Region</th>
<th>2017 Benton County</th>
<th>2017 LBL Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total count</td>
<td>127</td>
<td>403</td>
<td>287</td>
<td>653</td>
</tr>
<tr>
<td>Subcategories</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheltered count</td>
<td>74</td>
<td>255</td>
<td>139</td>
<td>287</td>
</tr>
<tr>
<td>Unsheltered count</td>
<td>53</td>
<td>148</td>
<td>148</td>
<td>266</td>
</tr>
<tr>
<td>Male</td>
<td>86</td>
<td>226</td>
<td>189</td>
<td>411 *</td>
</tr>
<tr>
<td>Female</td>
<td>41</td>
<td>161</td>
<td>97</td>
<td>541 *</td>
</tr>
<tr>
<td>Transgender</td>
<td>0</td>
<td>16</td>
<td>0</td>
<td>0 *</td>
</tr>
<tr>
<td>Children under 18</td>
<td>7</td>
<td>41</td>
<td>68</td>
<td>114</td>
</tr>
<tr>
<td>Unaccompanied children under 18</td>
<td>**</td>
<td>**</td>
<td>39</td>
<td>61</td>
</tr>
<tr>
<td>Veterans</td>
<td>19</td>
<td>22</td>
<td>28</td>
<td>66</td>
</tr>
</tbody>
</table>

Table notes: * indicates that cells do not sum to total. ** indicates that data has been suppressed due to small numbers.

*Source: Oregon Housing and Community Services, 2015, 2017*

Another source for recording the number of homeless individuals is the set of statistics gathered by federally qualified health centers (FQHCs). Among the data that FQHCs are required to collect is housing status, which they report each year to the federal government. According to the Bureau of Primary Health Care, a patient’s status should be recorded as homeless if the patient was residing in a shelter, transitional housing, on the street, if the patient was doubled up or temporarily living with others, had been homeless within the last 12 months, or resided in a housing program targeted to homeless populations.

In 2015, the Community Health Centers of Benton and Linn Counties served approximately 710 homeless patients, or 8% of its total patient population. This number is a decrease from 2014, when 835 homeless patients were served. Compared with the one-night counts, FQHCs may identify homeless individuals who were not staying in shelters or in canvassed encampments or who were homeless at other times throughout the year. However, only those individuals who were able to seek out medical care at an FQHC and chose to do so were identified. Nevertheless, the records provided by the FQHCs indicate a much broader level of homelessness than the one-night counts.

Student homelessness is a recurring problem in Oregon as well. Across the state, an increasing number of Oregon’s K-12 public school students are homeless at some point during the school year. Homelessness among students has more than doubled since the 2003-2004 academic school year. Just over 3 percent of students in grades K-12 experienced homeless during the 2015-2016 school year (Table 4.9).
Table 4.9: Homeless students grades K-12 in Benton County and Oregon, 2015-2016

<table>
<thead>
<tr>
<th>School District</th>
<th>Number of students in grades K-12 experiencing homelessness</th>
<th>Proportion of student body experiencing homelessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alsea</td>
<td>10</td>
<td>6.9 %</td>
</tr>
<tr>
<td>Corvallis</td>
<td>253</td>
<td>3.8 %</td>
</tr>
<tr>
<td>Monroe</td>
<td>10</td>
<td>2.2 %</td>
</tr>
<tr>
<td>Philomath</td>
<td>17</td>
<td>1.1 %</td>
</tr>
<tr>
<td>Benton County *</td>
<td>290</td>
<td>3.3 %</td>
</tr>
<tr>
<td>Oregon</td>
<td>--</td>
<td>3.7 %</td>
</tr>
</tbody>
</table>

Table notes: * Benton County data does not include North Albany Schools.

While these three data sources can broaden the understanding of the homeless population in the region, a major challenge is reconciling their different purposes and methodologies. The Corvallis League of Women Voters developed the Homelessness in Corvallis report, which adopts a transparent process for maximizing the set of sources, while minimizing double counting. Their 2017 report estimates that 855 people in Benton County experienced homelessness during 2016.185

Housing and Homelessness among Oregon Health Plan Members

There is a significant disparity in home ownership between Oregon’s Medicaid and non-Medicaid populations. About 21.5 percent of OHP adults own their home, contrasted with the 64.7 percent reported by the state’s general population. In addition, a little over 1 percent of the state’s OHP members are homeless.186

Local Data

The following descriptions of local data collected by Benton County Health Department and partners are taken in part or in full from existing documents. Sources are cited at the bottom of each section.

Housing Opportunities Action Council Special Population Surveys

In 2016, Benton County Health Department conducted outreach with 147 adult community members in Corvallis and Monroe who were identified as being high-risk for housing instability. Each respondent was asked three questions. Responses are summarized below.

Question 1: What has helped you find housing in the past?
Many respondents said that friends or family have helped them find housing, whether by taking them in or helping them find other housing. Access to shelters, transitional housing, and affordable housing were also frequently mentioned. Other respondents mentioned financial
support such as employment income and rent assistance. Case management, supportive services, and community resources were listed as well.

Question 2: What are the biggest challenges that you have [in your current housing/finding housing]?
Many respondents discussed lack of income, employment and education, which create financial barriers but are also frequently red-flagged on rental applications. Criminal history, lack of rental history, and poor credit were also listed as challenges. Many other respondents said that addictions and mental health were barriers, both to qualifying for housing and to become stable enough to consider housing. Most respondents also discussed the lack of affordable housing as a major challenge.

Question 3: What do you think this community needs to do to prevent and end homelessness?
Respondents mentioned the need for shelters, rental assistance (financial and logistical), and more transitional, supportive, and affordable housing. Respondents also listed the importance of education about accessing services, case management, addictions and mental health treatment, and employment and training. In addition, respondents discussed the role that policy plays in ensuring that everyone has access to affordable housing and that everyone is considered a part of the community.¹⁸⁷

Garfield and Linus Pauling Schools Neighborhood Assessment

In 2016, Benton County Health Department conducted a neighborhood assessment of the neighborhood surrounding Garfield Elementary School and Linus Pauling Middle School. Approximately 30 percent of respondents were primary Spanish speakers. On the topic of socioeconomic determinants of health, respondents were asked the two questions “Are you worried about losing housing?” and “How often do you worry about running out of food?”

In response to the housing question, 12 percent of respondents identified concern over losing housing or being evicted because they could not pay their rent or mortgage. In response to the food security question, 4 percent said they often worry about running out of food and an additional thirty two percent said they sometimes worry about running out of food.¹⁸⁸

Strategic alignment forum on Health and Housing in Linn, Benton, and Lincoln counties

Over 150 stakeholders gathered to share ideas on ways to align and integrate their work across housing, social services, and health to improve the health and vitality of Linn, Benton, and Lincoln County residents. This event was sponsored by the Federal Reserve Bank, Oregon Housing and Community Services, and InterCommunity Health Network Coordinated Care Organization. Regional stakeholders will use input from this forum to guide recommendations for systems alignment and specific health and housing projects.
Two morning panels highlighted issues, challenges, and opportunities for advancing housing and health collaborations at the local, regional, and state levels. Participants subsequently worked in small, facilitated table groups to answer the following four questions regarding the health of their communities:

1. **Core values:** What are the core values that should guide our goal to build healthy communities?
2. **Working together:** How can housing providers, community based organizations, regional collaboratives (Coordinated Care Organization, Early Learning HUB, Workforce Investment Board, etc.) and local governments work together to address local needs and priorities?
3. **Innovation and integration:** What potential innovations and integrations are possible in the region? Do they address local needs and priorities? What agencies should be involved?
4. **Next steps:** What would it take to make the project happen? Who needs to be at the table? Are the necessary resources available to implement?

Facilitators posted responses to each question on the wall and participants prioritized two options from each question. Full results were compiled and organized into general categories by question, ranked according to the number of votes each suggestion received, and are presented following this summary.

Participants identified several **core values** that should guide our communities’ work, including:
- Collaboration
- Equity
- Community
- Accessibility
- Sustainability
- Cultural competence, and
-Strengths-based

When asked how housing providers, community based organizations, regional collaboratives, and local governments can **work together** to address local needs and priorities, participants overwhelmingly stressed the need for cross-sector collaboration, communication, and information sharing. In addition, participants recommended using a collective impact model with strong backbone organizations identified to accomplish the work. Other important components of collaboration included shared and integrated assessment activities, data collection, and flexible funding models.

Looking toward **innovation and integration**, participants stressed the importance of looking beyond the “usual suspects” and creating public/private partnerships, prioritizing planning, ensuring that adequate infrastructure exists to support the plan, identifying concrete actionable goals that can be addressed collaboratively, and sharing information about best practices were also identified as key steps. The group felt that health navigators, universal case management
systems, community empowerment, bringing services closer to the community, and tiny houses also offered promising opportunities for innovation.

Regarding **next steps**, participants felt that our region has the resources and willingness to think outside of the box to create meaningful change with better alignment. Having the right partners at the table will be critical to accomplishing this, including housing, government, health care providers and systems (including IHN-CCO), community organizations, and consumers. Forum participants felt that a core or centralized housing collaboration hub that convened partners would be helpful. Key ingredients for successfully advancing efforts to advance health and housing integration and partnerships include: collaboration, transparency and accountability, flexible funding, measurable outcomes, policy change, and true community engagement.\(^{189}\)

**Housing SWOT**

In January 2016, the Corvallis/Benton County Housing Opportunities Action Council released a 4 question on-line survey to initiate feedback from the public. The Benton County Health Department administered the survey, distributing it widely to community groups and coalitions throughout the county, with 168 community members participating. At the February 2017 HOAC meeting, participants were asked to supplement the results with anything they felt was missing, given the changes in the landscape over the last year.

In November 2016, Benton County Health Department began conducting key informant interviews with organizations, government entities, and individuals. Preliminary themes from 42 interviews were included in March 2017.\(^{190}\)

Summarized results of the Strengths/Weaknesses/Opportunities/Themes (SWOT) analysis are presented in the table below.

**Table 4.10: Corvallis/Benton County Housing Opportunities Action Council SWOT summary, 2016**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civic engagement and community awareness</td>
<td>Housing unaffordability</td>
</tr>
<tr>
<td>Wealth and financial resources of Corvallis</td>
<td>Restrictive zoning, building, and land use codes</td>
</tr>
<tr>
<td>Strong network of service agencies, businesses, housing sector, and faith</td>
<td></td>
</tr>
<tr>
<td>communities.</td>
<td>Lack of low-cost, healthy housing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opportunities</strong></td>
<td><strong>Threats</strong></td>
</tr>
<tr>
<td>Updating codes and policies to promote affordable housing</td>
<td>Poor understanding of the issue</td>
</tr>
<tr>
<td>Redevelopment and investment in existing and new housing</td>
<td>Conflicting values and priorities</td>
</tr>
<tr>
<td></td>
<td>Social services and safety net at capacity</td>
</tr>
<tr>
<td></td>
<td>Poorly coordinated services</td>
</tr>
</tbody>
</table>

*Source: HOAC Scanning the Landscape SWOT analysis*
South Benton County Agricultural Workers

As part of its Monroe Farms Survey, Benton County Health Department asked agricultural workers about their employment relationships, housing, and transportation.

Most agricultural workers are hired by third parties who contract with farms to provide labor. This labor contractor is considered the sole employer of the farmworker. Farms will frequently have multiple contractors, and each contractor may hire workers from many different areas.

Twenty-five percent of the agricultural workers spoken to live in temporary housing. Some farms provide housing during harvest time. In other cases, workers will rent an apartment and often share housing with eight to fifteen people. In most of these cases the agricultural workers leave the area after the harvest season to seek work elsewhere.

The remaining seventy-five percent of the agricultural workers have permanent residences, but not necessarily close to the farms where they work. Some farmworkers travel 2 to 3 hours one way each day between their homes and the farms. Usually the contractor who hires the farmworker provides transportation and charges the worker a fee.

Most of the agricultural workers who have permanent homes are engaged in other industries during the off season, including construction, meat processing, and dairy operations. During their agricultural work, all farmworkers surveyed reported that 100 percent of their work is heavy duty labor. 191

Conclusion

Socioeconomic factors, income and wealth, form the base of Frieden’s Health Impact pyramid (p. 7) 192 and are powerful determinants of health. Socioeconomic factors that are affected by income and wealth, such as education, food security, and housing, in turn have powerful effects on a person’s health. Social determinants of health interact with individual characteristics such as age, and environmental factors such as air quality and proximity to healthy or unhealthy built environments. People with a strong set of social resources are more resilient to challenges to their health, and are better able to navigate the health care system. In the next chapter on access to health services, many of the disparities seen in social determinants of health recur when people try to access health care services.
Chapter 5
Access to Health Services

Access to health care is important to physical, mental, and social health. The Institute of Medicine (IOM) defines access to health care as "the timely use of personal health services to achieve the best health outcomes," with a special focus on the importance of equity of health care usage and health outcomes among and across different groups of people.¹⁹³

The ability to access healthcare can impact other areas of life, including employment, education, family life, nutrition, and emotional outlook, which play major roles in one’s overall health status. Scarcity of health services, rising health care costs, lack of insurance coverage, and other limiting factors create barriers that prevent individuals and families from accessing quality health care. Persistent or cumulative barriers to health care lead to worsening health conditions, preventable hospital visits, limited use of preventive care, and other negative health outcomes.¹⁹⁴

According to the Agency for Healthcare Research and Quality (AHRQ) 2013 National Healthcare Disparities Report (NHDR), there are three steps to attaining adequate access to health care:

- Gaining entry into the health care system,
- Getting access to sites of care where patients can receive needed services, and
- Finding providers who meet the needs of individual patients and with whom patients can develop a relationship based on mutual communication and trust.¹⁹⁵

Healthy People 2020 cites both the IOM and AHRQ documents on access to health care, and divides access into four major components:

- **Insurance Coverage and Affordability** – Health insurance coverage is highly emphasized by current policy in the United States as a means to affordable health care services.
- **Service Availability** – Having a usual and ongoing source of care, especially a primary care provider, leads to better health outcomes. Existence of preventive services and emergency medical services are also key.
- **Workforce** – Health care centers must be staffed with appropriate employees in order for people to access health care. Healthy People 2020 focuses on tracking the number of primary care providers.
- **Timeliness of Care** – Timeliness is defined as receiving care quickly after a need is recognized. This can be measured both in appointment and office wait times as well as the time lag between identifying a needed service (such as a test or course of treatment) and receiving it.¹⁹⁶
This chapter will highlight recent data on the four major components discussed above.

It is important to examine health services access and capacity in the larger context of overall factors that contribute to health. “Health care is necessary but not sufficient for improved health; in fact, health care accounts for only about 10–20 percent of health outcomes, according to some experts.”197 Social determinants of health, the upstream factors listed in Chapter 4, are responsible for a much larger percentage of health outcomes than health services alone. People need a healthy and accessible environment to achieve good health. This includes the broader community context, as well as the characteristics of the local health care system itself. Both a strong health system and good population health are needed, and can be mutually reinforcing to achieve optimal health in a community.

Many of the forces that shape the opportunity for better health in the Linn, Benton, and Lincoln tri-county region – education, employment, and transportation, for instance – can also affect access to health services. Frieden’s Health Impact Pyramid (illustrated in the Introduction on p. 7) provides a helpful model for recognizing some of those larger forces.198 Upstream factors play a large role in any individual’s ability to make healthy choices and decisions, and this holds true for accessing health services. For example, the ratio of providers to patients in a region may be considered excellent, but a prospective patient may work during clinic hours, find transportation difficult to navigate, or be unable to find child care options during the time of the visit. While having access to good doctors and health care facilities are visible indicators of access to health services, there are numerous other factors that influence opportunities for health.

**Demographic Differences in Access to Health services**

Many populations face increased barriers to accessing care and receive poorer quality care when they get it. In its 2011 reports on health care quality and disparities, the Agency for Healthcare Research and Quality (AHRQ) finds that, at a national level, low income individuals and people of color experience more barriers to care and receive poorer quality care. Moreover, other research shows that individuals with limited English proficiency are less likely than those who are English proficient to seek care even when insured. Research also finds differing patient experiences and levels of satisfaction by race, gender, education levels, and language.199

**Health Insurance Coverage**

Lack of adequate health insurance coverage is often a major barrier to health services. People who are uninsured or underinsured receive fewer health services than their insured counterparts.200 Inadequate coverage creates a financial barrier between a patient and needed health services. People without health insurance are less likely to know about or seek out preventive services, and are more likely to have new and worsening health problems, and shorter lifespans.201 In general, even when uninsured or underinsured persons receive health
services, care is often postponed (due, in part, to concerns about cost). These individuals suffer significantly worse health outcomes than those who have adequate medical coverage.\textsuperscript{202}

Recent changes in policy on both the national and state level have altered the landscape of health care and health insurance access in the past five years. The Affordable Care Act (ACA), enacted on a federal level in 2010, made it illegal to deny coverage due to pre-existing medical conditions, mandated health coverage for most individuals, expanded Medicaid funding and coverage, and subsidized health insurance through exchanges\textsuperscript{*} for lower income individuals, among other provisions. Most of these provisions went into effect by 2014.\textsuperscript{203} As part of the ACA, Oregon accepted federal funding to expand Oregon Health Plan (OHP) membership, setting targets for enrollment and expanding the variety of services (e.g. dental services). Statewide, membership in OHP increased 104 percent over seven years, from 469,000 members in January 2010 to 957,000 members in January 2017. Regional enrollment increased from 30,000 members to 61,000 members over the same time period, and Benton County enrollment has swelled from 6,000 to 13,000.\textsuperscript{204,205} In addition to OHP expansion, 80 percent of the consumers registered to the new health care exchange received tax credits or cost-sharing subsidies as of April 2014.\textsuperscript{206}

Insurance coverage rates in the region, and across the nation, have risen recently, largely due to the ACA and other healthcare transformation policies. The regional insurance coverage rate in 2012 was 76 percent, rising to 97 percent in 2014.\textsuperscript{207} As of 2014, 98 percent of Linn County, 95 percent of Benton County, 96 percent of Lincoln County residents have insurance.\textsuperscript{208} These rates include adults age 65 and older. This population has insurance coverage rates of close to 100 percent due to Medicare.

**Uninsured Rates**

Uninsured rates have decreased over the past eight years, with the largest decrease coming after the implementation of the Affordable Care Act. Figure 5.1 displays this trend.

\[\text{Figure 5.1 is displayed on the following page}\]

\textsuperscript{*} Health insurance exchanges are online, state or federally run marketplaces where an individual can compare plans from different insurance companies and purchase individual health insurance. Individuals with a qualifying level of income can receive federal subsidies to help pay premiums on health insurance plans.
Uninsured rates differed greatly between age groups before ACA. The uninsured rate among children across the region was lower than the rate for working-age adults (Table 5.1). Overall, in both age groups, regional uninsured rates were similar to the rest of Oregon. Across the region, less than one percent of individuals 65 and older lack health insurance. The age group with the highest uninsured rates in the region was 25 to 34 year olds, at 22.4 percent, down from 28.7 percent in 2013.

Table 5.1: Uninsured rates in the Benton County and Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18 years old</td>
<td>1.8 %</td>
<td>3.6 %</td>
</tr>
<tr>
<td>18 to 64 years old</td>
<td>7.3 %</td>
<td>10.0 %</td>
</tr>
<tr>
<td>65 years old and older</td>
<td>0.0 %</td>
<td>0.4 %</td>
</tr>
</tbody>
</table>

Insurance coverage rates were also pronounced across racial and ethnic categories, employment status, and citizenship status. Data from 2015 does not have a large enough sample size to be reliable. 2011-2015 five-year average data is older, but may indicate relative differences better. In Benton County, approximately 20 percent of Latino individuals and over 30 percent of American Indian and Alaska Natives were uninsured, compared to 10 percent of Asians and 7 percent of the White population. Black or African American, two or more races, and other races had uninsured rates ranging between 15 and 23 percent. Additionally, over 22 percent of the unemployed are uninsured, compared to 10 percent of those currently employed. The foreign born and non-citizens have high uninsured rates, at 18 percent and 22
percent, respectively.\textsuperscript{210} Insurance coverage data is not available for undocumented immigrants, and undocumented immigrants are excluded from both Medicaid and the health insurance exchange.\textsuperscript{211} However, the Oregon Legislature passed a “Cover All Kids” bill during the 2017 legislative session that guarantees that all individuals under the age of 18 will be eligible to be covered by Medicaid, regardless of immigration status.

Among the employed, those working less than full time year-round were uninsured at a higher rate (12 percent) compared to those working full time year-round (9 percent). Residents earning less than 200 percent of the federal poverty level are more likely to be without insurance coverage than those with higher incomes, 15 percent versus 5 percent.\textsuperscript{212}

The implementation of the Affordable Care Act has had a major impact on insurance coverage rates in the region as Figure 5.1 demonstrates. However, even given the growth in insurance coverage rates over the past 5 years, insurance gaps and inequalities remain, especially for people of color, individuals living in rural areas, and low income workers.\textsuperscript{213} As data for recent years become available, it will be important to measure these disparities.

**Health Insurance Among Children**

Examining insurance coverage rates among children up to age 18 (Figure 5.2) shows a gradual increase of insurance coverage in all three counties in the region from 2006 to 2014. As of 2015, all three counties had an insurance coverage rate of 92 to just over 95 percent for children under the age of 18. During the 2017 Oregon legislative session, the Oregon Legislature passed Cover All Kids, a bill that provides funding for medical assistance for all Oregon residents under age 19, up to 300% of the federal poverty level.

[Figure 5.2 is displayed on the following page]
Figure 5.2. Proportion of children age 0 to 17 without health insurance in Benton County, the LBL Region, and Oregon, 2006-2015

Figure notes: There are currently 14,000 children age 0-17 in Benton County. The data represent children without coverage at the time the data were collected.
Source: Kids Count Data Center

Insurance Types and Sources

People secure insurance from many different sources, including employer-based insurance, private insurance and public insurance. Figure 5.3 illustrates the distribution of the type of health insurance coverage among Benton County residents as of February 2015; with employer-based health insurance constituting the majority of coverage. The Oregon Health Plan provides health care coverage to low-income Oregonians. Medicare is the federal health insurance program for people who are 65 or older, certain younger people with disabilities, and people with end stage renal disease.214

[Figure 5.3 is displayed on the following page]
Figure 5.3: Percent of population covered by different insurance types in Benton County, 2011-2015

Figure notes: Two or more insurers includes individuals with two or more private insurers, two or more public insurers, and other combinations. All other categories represent individuals with only one source of insurance. The population underlying this data is approximately 86,000.
Source: U.S. Census Bureau, American Community Survey 5-year estimates, 2011-2015

**Medicare**

Medicare provides insurance to 13,260 Benton County residents over the age of 65 and 1,600 younger Benton County residents with permanent disabilities (about 17 percent of all Benton County residents). The program helps pay for primary care, prescription drugs, home health care, hospitalization, and other health services. Part of Medicare is funded by a payroll tax, and other parts are funded by premiums paid by Medicare recipients. Medicare does not pay for all services and supplies that are needed by older adults and individuals with disabilities. For example, Medicare does not pay for routine dental care and does not cover long-term care. Most Medicare recipients have additional coverage to make up these gaps, whether private insurance or public insurance such as Medicaid. Seventy-eight percent of Benton County residents who have Medicare have another source of health insurance.

**Oregon Health Plan**

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). Eighty-eight percent of OHP members in Benton County are enrolled with IHN-CCO. The other 13 percent of the county’s OHP membership are enrolled in another CCO, Managed Care, or Fee for Service (Figure 5.4).
The OHP population increased greatly from 2010 to 2015. In 2010, approximately 6,070 Benton County residents were OHP members. In 2017, there were 13,173 members, an increase of over 100 percent from 2010.\textsuperscript{219,220}

**Cost of Health Services**

Insurance coverage is only part of the cost of health services. Additional costs are referred to as cost-sharing and include costs such as copayments, coinsurance, and deductibles. Health reform legislation has reduced financial burdens for many people with a lower income or significant health care needs. Nevertheless, one in three Americans say they have put off getting medical treatment that they or their family members need because of cost.\textsuperscript{221} According to the most recently available data, during the 2006-2012 period, 17 percent of adults in Linn County, 10 percent of adults in Benton County, and 19 percent of adults in Lincoln County reported they did not see a doctor in the past 12 months because of cost.\textsuperscript{222}

**Cost of Health Care Services**

Oregon has one of the highest hospital adjusted expenses per inpatient day when compared with all 50 states. The average cost per inpatient day in Oregon is $3,368, while the average cost across the United States is $2,271.\textsuperscript{223} Data that is specific at the county or tri-county level is not publically available.
Cost of Insurance Premiums

When insurance is purchased through an employer, the cost of the premium may be shared by both the employee and the employer. Premium costs are set by the insurer, but the employer decides how much of the cost to pass on to their employee. Individuals who do not purchase insurance through an employer can purchase insurance through the Marketplace Exchange or directly through a private insurance company. The ACA also provides subsidies to reduce premiums, thus making options more affordable for consumers when bought in the marketplace. Regardless of where insurance is purchased, costs have steadily climbed over time. Since at least as far back as 1970, growth rates of health spending per capita have exceeded the rate of growth for GDP per capita. Within the U.S. between 2002 and 2012, the average annual premium for family coverage through an employer nearly doubled from $8,003 to $15,745. Oregon insurance premiums are slightly below the U.S. average for insurance premiums. In 2015, the average cost of employer-based family insurance premiums in the U.S. was $17,322 annually; the average cost in Oregon was slightly lower at $17,141.

Table 5.2 provides a snapshot of insurance premium costs for Oregon. It includes average monthly health care insurance premium costs paid by employee and employer, as well as the monthly cost for an individual purchasing non-employer provided insurance through the health insurance exchange. Individuals purchasing private, non-employer based coverage in Oregon are paying considerably more than individuals who purchase insurance through an employer.

Table 5.2: Average cost of insurance coverage in Oregon, 2015

<table>
<thead>
<tr>
<th>Source of insurance</th>
<th>Type of coverage</th>
<th>Individual/Employee contribution to annual premium</th>
<th>Employer contribution to annual premium</th>
<th>Total annual premium cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer-purchased insurance</td>
<td>Individual</td>
<td>$ 898</td>
<td>$ 4,924</td>
<td>$ 5,822</td>
</tr>
<tr>
<td>Employer-purchased insurance</td>
<td>Family</td>
<td>$ 4,729</td>
<td>$ 12,412</td>
<td>$ 17,141</td>
</tr>
</tbody>
</table>

Source: Kaiser Family Foundation: State Health Facts

Comparable data for individual or family marketplace plans are not available, but in 2013, an individual marketplace-purchased plan averaged $2,460.

Looking at the average cost for insurance premiums does have limitations due to the number of variables that influence costs for insurance premium (e.g., age, gender, health risk factors, zip code). However, it can give a general picture of the financial burden to both employers and employees for their health insurance coverage.
Health services Hardship Due to Cost

Uninsured Americans are still the most likely to report having put off medical treatment because of cost. However, even among those who have insurance, cost can be a barrier to care. Data from national studies report that families with private, non-employer sponsored insurance and with low income earnings face barriers to accessing services.\textsuperscript{228}

National studies have found a number of challenges to meeting premiums and deductibles for low and middle income families with insurance, including the fact that households with the lowest incomes (100 percent to 249 percent FPL) lack resources to meet health insurance cost sharing demands, such as deductibles, co-pays, and co-insurance.\textsuperscript{229} The majority of these families (68-80 percent) surveyed by the Kaiser Family Foundation in 2013 reported that they could not afford to cover the cost of their insurance deductible.\textsuperscript{230} Similarly, among families earning 250-400 percent of the federal poverty level, between one third and one half reported that they were unable to afford the out-of-pocket deductible limits.\textsuperscript{231}

Findings from the national studies reported above suggest that households in the region with insurance coverage may also experience significant barriers to health care services due to cost of care.

Access Capacity

Primary care, mental health, and oral health are foundational to a comprehensive offering of health services for a population. Table 5.3 can help to provide insight on the number of providers in each of these categories. It is important to remember however, that Benton County is a regional hub for health services. This means that while the number of patients to providers may be lower than the other counties, these same providers serve many patients from outside of the county.

While primary care provided by physicians is an important measure of the quality of the health care system, as the Robert Wood Johnson Foundation writes,

\begin{quote}
Physicians are not the only providers of primary health care. Other professionals can serve as usual sources of routine, preventive care including nurse practitioners (NP), physician assistants (PA), and clinical nurse specialists. The Health Services Research Administration estimates that the primary care NP and PA workforces are projected to grow far more rapidly than the physician supply in the next ten years, and could help alleviate shortages as demand increases.\textsuperscript{232}
\end{quote}

One reason for the expected rapid increase in the supply of NPs and PAs is that those qualifications typically take less time to obtain than a physician’s Doctor of Medicine (MD) or Doctor of Osteopathy (DO) license. Other primary care providers are especially vital in rural areas that may not have the population density to support a full time physician. Many rural
communities in the region have clinics staffed by nurse practitioners and other primary care providers. In the State of Oregon, NPs have independent prescribing authority, while PAs must abide by the practice agreement of a supervising physician.\textsuperscript{233}

Table 5.3 below shows the number of residents per provider for primary care physicians and other types of providers. The numbers assume that the residents would be equally distributed across providers within a given provider type. Therefore, a smaller number of residents to providers indicates more capacity.

Table 5.3: Number of residents per provider in Benton County, the LBL Region, and Oregon, 2016 (physicians) and 2014 (other providers)

<table>
<thead>
<tr>
<th>Provider type</th>
<th>Number of residents per provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benton</td>
</tr>
<tr>
<td>Primary care physicians (2016)</td>
<td>764</td>
</tr>
<tr>
<td>Other primary care providers (non-physicians)</td>
<td>995</td>
</tr>
<tr>
<td>Mental health providers</td>
<td>144</td>
</tr>
<tr>
<td>Dentists</td>
<td>1,460</td>
</tr>
</tbody>
</table>

Table notes: Physician data is available for 2016. Other data is from 2017. Other primary care providers include nurse practitioners, physician assistants, and clinical nurse specialists. A smaller number of residents per provider indicates more capacity.

Sources: 2017 data: County Health Rankings, 2017; 2016 data: American Health Association

Having a usual primary care provider (PCP) is associated with improved health outcomes, increased health equity, and lower healthcare costs. Effective PCPs work to maintain sustainable relationships with patients, connect them with additional health resources in the community, and coordinate their care. Patients with ongoing access to PCPs and other healthcare services have better relationships with their providers and are more likely to receive appropriate care than patients without a regular healthcare provider.\textsuperscript{234}

A 2012 study concluded that a primary care team (PCP and non-PCP staff) could reasonably care for a panel size between 1,387 and 1,947 patients.\textsuperscript{235} The region has a ratio of 1,184 patients for each primary care physician. Using these ratios as benchmarks, the tri-county region has a good ratio of patients per PCP.

Although the region overall has a good ratio of patients to primary care providers, there is significant variation between the counties. Benton County has close to half as many patients per providers as Linn, and less than half as many as Lincoln County (see Table 5.3, above).

Behavioral/mental health services include an array of resources including assessments, individual and group therapy, case management, and other supportive therapies for people
with a mental illness and/or addictions. A continuum of behavioral health services is available in Linn, Benton, and Lincoln counties. Included in these services are acute care inpatient facilities for adult psychiatric patients, specialty mental health services for adult and child mental health and substance use disorders, residential services, and therapeutic services for clients with mild or moderate behavioral health needs. However, many residents have difficulty accessing these services due to limitations in geography, income, cultural competency, or time.

The Benton, Lincoln, Linn Regional Oral Health Coalition has recently completed a needs assessment which provides a more comprehensive look and analysis of oral health needs in the region. Regionally there are about 1,730 residents for each oral health provider. This ratio is worse than the ratio in Oregon, which has about 1,360 residents per provider. Additionally, there is less variation between counties compared to primary care providers. The oral health provider ratios range from 1,600 to 1,850 residents per provider across the counties.

**Oregon Health Plan Access to Care**

According to public data from IHN-CCO, as of 2017 there are 80 providers practicing in Benton County who accept Oregon Health Plan insurance. Of these 80 providers, 62 are physicians and 18 are NPs or PAs.

As mentioned above, patients having an established primary care team is critical for a variety reasons. An important trend among Medicaid participants in the region is the percentage of members that are enrolled in a primary care home. In 2015, IHN was 2\textsuperscript{nd} in the state at 94 percent. This value dropped to just under 85 percent in 2016, the biggest decline of any CCO region in the state.

For oral health, the percentage of OHP members in Benton County receiving any dental service in 2015 was 37.8 percent. This is slightly lower than the regional value of 38.5 percent.

IHN-CCO members were also asked a series of questions in a CAHPS\textsuperscript{*} survey in 2015 to understand the access to care and quality of care they receive. Of those who responded:

- Eighty eight percent of respondents reported that they always or usually received immediate care when they needed it.
- Seventy nine percent of respondents reported that the always or usually got an appointment for routine care as soon as they needed it.
- Ninety percent of respondents reported that their provider always or usually explained things in a way that was easy to understand.
- Ninety percent of respondents reported that their provider always or usually listened carefully to them.

\textsuperscript{*} CAHPS stands for Consumer Assessment of Healthcare Providers and Systems and is developed and maintained by the Centers for Medicare and Medicaid.

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Attachment 10: CHAs and CHPs
• Ninety percent of respondents reported that their provider always or usually showed respect for what they had to say.
• Eighty seven percent of respondents reported that their provider always or usually spent enough time with them.
• Ninety five percent of respondents reported that their health plan’s customer service staff were always or usually courteous and respectful.\textsuperscript{240}

\textbf{Health Services and Workforce}

The health service needs of people who live, learn, work and play in Benton County are met through a variety of medical services, and residents of the county often travel to other counties for the care they need. Private group and individual practices offer primary care, dental, mental health, services for the developmentally disabled, specialty care, and alternative medicine services. Corvallis functions as a center for regional healthcare and enjoys unusually sophisticated health services for a community of its size. The range of services include a 188-bed regional medical center including a Level II trauma center, inpatient mental health care, cancer center, heart institute, outpatient surgery center, and hospice services.\textsuperscript{241} Safety net providers serve a large proportion of low-income, uninsured, and rural populations through community health centers, rural health centers, school-based health centers, public health, and other community service organizations. Traditionally, safety net clinics focus on primary care and may also provide mental health, oral health, and pharmacy services.

\textbf{Safety Net Services & Community Benefits}

The health care “safety net” refers to the component of the health care system serving low-income and uninsured people. Safety net services are complemented by community funding, programs, and activities.\textsuperscript{242}

Federally Qualified Health Centers\textsuperscript{*} (FQHCs) and Free Clinics or “charity” clinics are the most common types of safety net clinics. FQHCs in the region provide primary care, mental/behavioral health, and oral health services. Benton County has four federally qualified health centers: one in Corvallis, a school-based health center in south Corvallis, and a school-based health center in Monroe. An independent rural health clinic has operated for many years in Alsea; the clinic joined the Benton County FQHC network in 2015. Two FQHCs operate in Linn County under the umbrella of the Community Health Centers of Benton and Linn Counties, one in Lebanon and one in Sweet Home. The Community Health Centers of Benton and Linn Counties served just over 9,000 patients in 2015.\textsuperscript{243} Several auxiliary safety net providers also serve the region’s vulnerable populations, such as women and children, persons experiencing homelessness, and people who are HIV-positive.

\footnote{FQHCs have a legal mandate or expressly adopted mission to serve all patients, regardless of ability to pay or legal status.}
Cultural and Linguistic Competency

One measure of workforce competency is quantifying the level of cultural and linguistic ability among providers. The Center for Linguistic and Cultural Competency in Health Care (CLCCHC) has created National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health and Health Care in order to “...improve health care quality and advance health equity by establishing a framework for organizations to serve the nation's increasingly diverse communities.” These standards are used by many health and medical care organizations as a tool in order to improve cultural competency. Cultural competency alone cannot address disparities in health, but is seen as a way to increase access for all patients and promote health equity.

Cultural competency, while often framed in terms of language barriers, includes more than having a provider who is able to speak the same language as the patient. By using the National CLAS Standards as a framework, it is clear that communication must include respect, engagement, and overall health literacy as well. This includes the ability to effectively communicate with and understand diverse patients, including those from at-risk populations such as LGBTQ, developmentally diverse, elderly, and those with chronic mental health issues.

Low-income Latinos, and migrant and seasonal farm workers living in the tri-county region face multiple barriers to accessing culturally and linguistically appropriate health care and other related prevention, treatment, and disease self-management services. Many are employed in agriculture sectors that provide few or no employment benefits, or live in geographically isolated rural areas with limited access to public transportation. Cultural, linguistic, and literacy barriers further reduce access to needed information. Oregon’s Latino population is expected to grow by an anticipated 184 percent from 2010 to 2025, increasing the need for health services by this population.

Oregon Health Plan Race/Ethnicity Perceptions

Medicaid recipients’ perception of treatment when seeking health care is different among races and ethnicities. 6.4 percent of the state’s adult OHP population feel that their health care experience is worse than other races and ethnicities. In the IHN-CCO region, this proportion is 7.8 percent.

Health Care Professional Shortage Areas

Knowing the number of providers and types of services are very important for gauging the capacity and presence of a health care system. However, an understanding of the geographical distribution of these services helps paint a more accurate picture.
While the region enjoys a good ratio of health care providers to overall population, geographic distribution of providers can make it difficult for those with limited transportation to access services. Because rural areas of the region have either no or very few health services providers, portions of the region are designated as geographic Health Care Professional Shortage areas (HPSA). Designation as an HPSA means that there is an increased risk of poor access to health professionals. Linn, Benton, and Lincoln counties all qualify in part as an HPSA for primary care, dental health, and mental health.

In addition to the geographic designation, the region also has population-based HPSAs for migrant seasonal farmworkers and low income individuals. Migrant seasonal farmworkers and their families are a particularly vulnerable subgroup of the Latino/Hispanic population.

Farmworkers have different and more complex health problems than those of the general population. Many of the Latino/Hispanic migrant seasonal farmworkers are documented but have undocumented family members with them. Many are employed in agriculture sectors that provide few or no employment benefits. While most are low income, many immigrants and migrant seasonal farm workers do not qualify for Medicaid due to their residency status or they are unable to access Medicaid due to language, transportation and cultural barriers.

**Emergency Responders**

Emergency Management Services (EMS) responses serve an important role in the community. According to the Oregon Office of Rural Health, the mean travel time to the nearest hospital for rural service areas is 23 minutes. Estimated travel time is calculated from the largest town/city in each of the rural service areas to the nearest town/city with a hospital. This is the protocol unless the city already has a hospital, in which case driving time is defaulted to 10 minutes. Seven areas in the region have a mean travel time to the nearest hospital which is greater than 23 minutes, with the longest mean travel time in eastern Linn County at approximately one hour. With the exception of the Alsea area, which has a mean travel time to the nearest hospital of 34 minutes, most of Benton County has a mean travel time to the nearest hospital under the rural average of 23 minutes.

**Timeliness**

Once a health need is recognized, a health care system must be able to respond to this need in a timely manner. Measures of timeliness include the length of time it takes to get a medical appointment, wait time in doctors' offices and emergency departments, and the interval between identifying a need for specific tests and treatments and actually receiving services.

According to Healthy People 2020, in 2013, 4.9 percent of the U.S. population reported delays in receiving necessary care. For families below 200 percent of the poverty line, the proportion increased to nearly 7 percent. Individuals enrolled in InterCommunity Health Network (IHN-CCO), the Coordinated Care Organization (CCO) for the Linn-Benton-Lincoln region, reported
that they received appointments and care when needed 85.5 percent of the time in 2015, up from approximately 82 percent of the time in 2011.\textsuperscript{253} When looking at Oregon CCOs as a whole, timeliness for children increased from 76.1 percent to 88.7 percent between 2011 and 2015; the percentage of adults reporting timely care increased only 0.8 percentage points, from 79.4 percent to 80.6 percent.\textsuperscript{254}

There is evidence that type of insurance can affect the timeliness of care for an individual. A 2014 study, in which researchers called primary care providers to set up mock appointments, found significant disparities in the ability to successfully set up an appointment by insurance type.\textsuperscript{255} Callers representing themselves as privately insured in Oregon were able to secure a timely appointment 75 percent of the time, while those calling as Medicaid beneficiaries were only able to do so 37 percent of the time. It is possible that this disparity was magnified at the time of the study (calls were made in 2012 and 2013), as the health care transformation plan in Oregon created a new pool of Medicaid patients looking for services without expanding workforce capacity. However, this appears to be a similar trend across the nation.\textsuperscript{256} When the privately insured were turned down, the reason was largely because the doctor was not taking new patients. Conversely, 69 percent of Medicaid callers across multiple states were explicitly told their type of insurance was not accepted. Uninsured patients in Oregon were able to book an appointment 71 percent of the time; however that was with an up-front cash payment that averaged $176. Only 20 percent of uninsured appointments cost less than $75.\textsuperscript{257} In addition to causing economic hardships, expensive medical services can also cause delays in receiving health services, as individuals have to seek alternative, less expensive sources of care, or wait until they have enough money to pay for care.

**Timeliness in Access to Care for the Oregon Health Plan**

Statewide, the percentage of OHP members who thought they received timely care was about 84 percent in 2016. This varies widely by race, ranging from 63 percent (Asian Americans) to 87 percent (American Indians or Alaska Natives) in adults. The IHN-CCO region 2016 results (83 percent) were down from the 2015 results (86 percent).\textsuperscript{258}

**Preventable Hospitalizations**

Preventable hospital stays are another way to measure timely health care. Measurement focuses on hospital admissions for conditions that might otherwise have been controlled in an outpatient setting. Effective management of chronic conditions (e.g. asthma, heart disease and diabetes) on an outpatient basis can help avoid hospitalizations. Likewise, timely outpatient care for conditions such as pneumonia or cellulitis can often prevent deterioration and hospitalization.\textsuperscript{259} Local data is available for Medicare enrollees and preventable hospital stays as of 2014. The three counties show marked differences in rates per 1,000 Medicare enrollees per year. Benton County has the lowest rate in the state at 22 preventable hospital stays per 1,000 Medicare enrollees. Lincoln County has a rate of 38 preventable admissions per 1,000 Medicare enrollees.
Medicare enrollees, slightly higher than Oregon’s average of 33 preventable admissions per 1,000 Medicare enrollees. Linn County has a rate of 40 preventable admissions per 1,000.  

Emergency Services

Emergency services are an important indicator of timely access to health services, as they represent the most time-sensitive and critical medical conditions. Good Samaritan Regional Medical Center in Corvallis had approximately 23,000 emergency room visits (not necessarily unique patients) in 2015. The following table (Table 5.4) provides further statistics for Good Samaritan regarding timely care in the emergency department in 2015-2016.

<table>
<thead>
<tr>
<th></th>
<th>Good Samaritan Regional Medical Center</th>
<th>Oregon average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median wait time patients spent in an emergency department before being seen by a medical professional</td>
<td>39 minutes</td>
<td>32 minutes</td>
</tr>
<tr>
<td>Median wait time for pain medication among emergency department patients with broken bones.</td>
<td>50 minutes</td>
<td>53 minutes</td>
</tr>
<tr>
<td>Percent of emergency department patients who left before being seen</td>
<td>1 %</td>
<td>3 %</td>
</tr>
</tbody>
</table>

Source: Hospital Compare, Medicare.gov

Transportation to Medical Care for Oregon Health Plan Members

Oregon Cascades West Council of Governments coordinates the Cascades West Ride Line, which provides transportation to and from non-emergent medical appointments for Oregon Health Plan and Medicaid members. Beginning from the expansion of Medicaid in 2013, the Ride Line has increased its service from 2,300 clients in the third quarter of 2013 to 3,300 clients in the second quarter of 2015. The total number of trips increased from 25,000 trips to 41,500 trips over the same time period. In 2016, Ride Line provided about 26,000 rides or gas reimbursements to approximately 320 clients in Benton County.

Oral Health Services

Oral health is a key indicator of wellbeing, and, especially among children, access to oral health services is important in creating a foundation of health. There is little county level data on access to oral health care.
The Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) asks new mothers and parents of two-year-olds about their dental care. In 2011, 52 percent of pregnant women visited the dentist during their pregnancy. In 2011, 24 percent of two-year-olds in Oregon had had a dental visit.  

According to the Oregon Smile Survey, in 2012, 38 percent of children age 6-9 had protective sealants on at least one permanent molar, and 3 percent of children age 6-9 were in need of urgent dental care.

Oregon Healthy Teens data indicates that 79 percent of Benton County 8th graders and 84 percent of Benton County 11th graders had seen a dentist for preventive care in the past year. These proportions are higher than among Oregon students (73 percent and 75 percent, respectively).

There is no available county level data on adult oral health access. Sixty-seven percent of all Oregonians had seen a dentist within the past year. The most common reason given for not visiting a dentist was lack of insurance or inability to pay (44 percent of respondents who do not usually visit a dentist).

**Oral Health Services for Oregon Health Plan members**

Among dentists in Oregon, 59 percent report that they do not see Medicaid members. Among dentists who do see OHP members, 46 percent have less than one quarter of their patient panel filled by Medicaid members.

Seventy-seven percent of children and 49 percent of adult OHP members had a regular dentist in 2015.

Thirty-four percent of Oregon OHP members received any dental service in the past year. Thirty-six percent of IHN-CCO members received any dental service in the past year. When examining service rates by race and ethnicity (statewide), Hawaiian and Pacific Islander Medicaid members receive the lowest rates of dental services at 30 percent, while Asian American members have the highest rates at 39 percent.

In 2016, 20 percent of all IHN-CCO members reported receiving a preventive dental service during the previous year. 51 percent of IHN-CCO members who were children had a preventive dental service during the previous year. However, only 16 percent of IHN-CCO members who were children received at least two topical fluoride applications during the past year. And only 6 percent of IHN-CCO children age 6 or below had an oral health assessment in 2016.
Behavioral Health Services

Residents of Benton County with behavioral health illness such as mental illness and substance abuse disorders are served by a number of different types of providers, including the hospital system, private clinics, county behavioral health, residential facilities, and individual practitioners. Many residents with behavioral health issues are also treated within the criminal justice system in Benton County and Oregon.

There are approximately 280 Benton County residents who are being treated at the Oregon State Hospital or in a residential facility. This represents a rate of 313 individuals per 100,000 residents, compared with a rate of 574 individuals per 100,000 residents statewide. This is due to higher statewide institutionalization rates at all facilities, and especially at the OHP Psychiatric Hospital and in supportive housing. ²⁷¹

There are longstanding gaps between the need for behavioral health services and the capacity of these services. The National Survey on Drug Use and Health estimates that 4 percent of youths, 7 percent of young adults, and 2 percent of adults age 26 and up are in need of services but are not receiving treatment for illicit drug use. The gap for alcohol treatment is generally wider, with 13 percent of young adults and 6 percent of other adults needing but not receiving treatment. ²⁷²

Oregon Health Plan members

The Oregon Health Plan covers mental health and substance abuse disorder treatment, and as a result, treatment rates for these conditions are substantial. In Benton County, 2,440 Oregon Health Plan members are receiving mental health services through OHP, and 541 members are receiving substance abuse disorder treatment services. ²⁷³

Table 5.5 shows the percentage of OHP members who receive treatment for mental health conditions and substance abuse disorders. These proportions demonstrate both the burden of disease and also access to care, with the caveat that disease burden is always higher than treatment rates, but by how much is unknown. Young adults are generally less likely to seek treatment, so the treatment rates may underestimate the comparable disease burden.

Table 5.5: Percent of OHP members in Benton County receiving treatment for mental health conditions and substance abuse disorders, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mental health conditions</th>
<th>Substance abuse disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children age 0 – 17</td>
<td>11.2 %</td>
<td>2.2 % *</td>
</tr>
<tr>
<td>Young adults 18 – 25</td>
<td>8.2 %</td>
<td>3.0 %</td>
</tr>
<tr>
<td>Adults 26 and older</td>
<td>10.9 %</td>
<td>3.8 %</td>
</tr>
<tr>
<td>All members</td>
<td>10.3 %</td>
<td>2.6 %</td>
</tr>
</tbody>
</table>

Table notes: * indicates that substance abuse statistics for children under 18 were reported for children age 12-17.  
Source: OHA Benton County Behavioral Health Profile
Local Data

The following descriptions of local data collected by Benton County Health Department and partners are taken in part or in full from existing documents. Sources are cited at the bottom of each section.

Community Health Centers of Benton and Linn Counties Patient Experience of Care

Patients of the Community Health Centers in Benton County completed Experience of Care (CAHPS)* surveys that included information about access to care and experience of care. Their responses are collected and used as part of a quality improvement process to ensure that patients are receiving the best possible care. The following data are from the CAHPS survey results.

- Seventy eight percent of respondents reported that they always or usually received immediate care when they needed it.
- Eighty seven percent of respondents reported that they always or usually got an appointment for routine care as soon as they needed it.
- Seventy two percent of respondents reported that they always or usually spent 15 minutes or less in the waiting room before seeing their provider.
- Ninety six percent of respondents reported that their provider always or usually explained things in a way that was easy to understand.
- Ninety six percent of respondents reported that their provider always or usually listened carefully to them.
- Ninety five percent of respondents reported that their provider always or usually showed respect for what they had to say.
- Ninety three percent of respondents reported that their provider always or usually spent enough time with them.
- Ninety seven percent of respondents reported that the clerks and receptionists were always or usually courteous and respectful.²⁷⁴

Garfield and Linus Pauling Schools Neighborhood Assessment

In 2016, Benton County Health Department conducted a neighborhood assessment of the neighborhood surrounding Garfield Elementary and Linus Pauling Middle Schools. Approximately 30 percent of respondents were primary Spanish speakers. On the topic of access to health care, respondents were asked about visits to the doctor and visits to the dentist.

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* CAHPS stands for Consumer Assessment of Healthcare Providers and Systems and is developed and maintained by the Centers for Medicare and Medicaid.
In response to the questions about doctor visits, 15 percent of respondents said they had not seen a doctor in over a year. The top three reasons for not seeking care were that it was too expensive, that they didn’t have insurance, or that they had not been sick. Among respondents who had visited a doctor, the top three sites were the Community Health Center, the Corvallis Clinic, and Samaritan Health Services.

In response to the questions about dentist visits, 30 percent of respondents said that they had not seen a dentist within the past year. The top two reasons for not seeking dental services were that it was too expensive or that they did not have insurance.

### Linn, Benton, Lincoln Colorectal Cancer Screening Campaign

The Linn Benton Lincoln Colorectal Cancer Screening Program’s Planning and Evaluation Team (PP&E) consisted of public health specialists from each county, employing the principles of evidence-based practice and science for colorectal cancer screening. To address barriers associated with regular screening, the PP&E worked with clinics to promote the fecal immunochemical test (FIT), as well as more traditional methods like colonoscopy, and to create sustainable clinical processes to screen, refer, and follow-up with patients.

The regional campaign also utilized Oregon Health Authority’s social marketing campaign, The Cancer You Can Prevent (thecanceryoucanprevent.org). This campaign recruited local champions to educate the public, to promote regular screening, and to encourage individuals to talk to their friends and family about their own experiences getting screened. Clinics were invested in the process, but the PP&E Team found that the pilot period (three-month implementation period) was too short for clinics to develop and implement a new clinical workflow. The PP&E Team recommends allotting more time, so clinics have an adequate amount of time to use quality improvement processes.

Additionally, the PP&E recommends offering training to clinics on electronic health record (EHR) use, workflow development and implementation, and staffing plan modification. Through interviews with clinic staff, it was apparent that some of the clinics struggled with these skills and reported more training in these areas would have been beneficial. The PP&E Team found that having educational materials, like posters and brochures, in the waiting room and in the exam rooms helped start the conversation between providers and patients. The PP&E Team also recommends having FIT kits in the exam rooms, so providers can show their patients the FIT, can better discuss the process, and can address patients’ barriers to completing the test.

Clinics developed many ways to follow-up and address patient barriers. Examples include sending reminders via birthday cards, sending FIT kits in the mail, sending reminder cards and letters, making phone calls, and sending text messages. The PP&E Team recommends utilizing technology to make these follow-up procedures less cumbersome on staff.
Clinical Health Navigator Evaluation

In collaboration with InterCommunity Health Network, Benton County Health Services has implemented a pilot program with Geary Street Family Medicine, MidValley Children’s Clinic, Samaritan Family Medicine, and Samaritan Internal Medicine. These four clinic sites are the focus of the present evaluation. In those clinics, Clinical Health Navigators help clients navigate an increasingly complex health care and social services system. Using a mixed-methods approach, we conducted a formative evaluation of the Clinical Health Navigator Pilot Program at these sites, capturing the experiences of clients, clinical health navigators, and clinic providers/staff. Touches data was collected for the entire pilot program period (May 2015 through December 2016). During summer and autumn of 2016, one focus group with Spanish-speaking clients (6 participants), six interviews with non-Spanish speaking clients, one focus group with clinical health navigators (10 participants), and thirteen provider interviews were conducted. At the end of each focus group/interview, participants completed an anonymous brief socio-demographic survey.

Clinical health navigators performed 7,162 touches between May 2015 and May 2016. The top three categories for client interactions were Medicaid/OHP assistance (2,824 touches), accessing community resources (1,428 touches), and coordinating care through information (935 touches).

Clients interviewed stressed that clinical health navigators filled needs that would otherwise go unmet. One barrier to access is making appointments that accommodate a client’s schedule. Often clients would have difficulty in completing paperwork because they could not get timely appointments. Clients reported that clinical health navigators were more available, in the case of one client, “If a letter arrives, I call her, and she gets things resolved right away.”

In addition to helping with OHP enrollment and other insurance related issues, clinical health navigators have helped clients with transportation issues, and even other non-clinical resources, such as housing, clothing, and emergency food boxes.

Boys and Girls Club of Corvallis Year End BBQ 2016

The Benton County Health Department partnered with the Boys and Girls Club of Corvallis at an end of year celebration in June 2016. Close to 400 youth attended the event. Three open-ended questions were asked of attendees:

- In response to the question “What do you need to be healthy?,” 121 respondents answered “Healthy food,” 44 answered “Drink water,” 34 answered “Exercise,” and 11 answered “Sleep”.

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In response to the question, “I feel most healthy when I...”, 66 respondents answered “Exercise”, 48 answered “Eat Healthy”, and between 11 and 16 answered “Sleep well”, “Play”, “Drink water”, or “Stay active”.

In response to the question, “Why don’t you see the doctor?” most respondents did not understand the question, answering that they do see the doctor. However, 38 answered “Because I’m healthy”, 13 answered “It’s scary”, and 9 answered “My illness will pass”.

As part of the celebration, Trillium Family Services collected demographic and healthy behaviors data from the attendees. This data is presented in the tables below.

Table 5.6 Age group of respondents. 2016

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percent of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9 years old</td>
<td>28 %</td>
</tr>
<tr>
<td>10-12 years old</td>
<td>23 %</td>
</tr>
<tr>
<td>13-15 years old</td>
<td>4 %</td>
</tr>
<tr>
<td>16-18 years old</td>
<td>1 %</td>
</tr>
<tr>
<td>Did not give age</td>
<td>44 %</td>
</tr>
</tbody>
</table>

Table notes: There were approximately 360 total respondents  
Source: Boys and Girls Club of Corvallis Year End BBQ questionnaire results.

Table 5.7 Percent of respondents who are active at least 3 days a week for 30 minutes, 2016

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percent active at least 3 days a week</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9 years old</td>
<td>65 %</td>
</tr>
<tr>
<td>10-12 years old</td>
<td>87 %</td>
</tr>
<tr>
<td>13-15 years old</td>
<td>68 %</td>
</tr>
<tr>
<td>16-18 years old</td>
<td>100 %</td>
</tr>
<tr>
<td>Did not give age</td>
<td>85 %</td>
</tr>
</tbody>
</table>

Table notes: There were approximately 360 total respondents  
Source: Boys and Girls Club of Corvallis Year End BBQ questionnaire results.

Table 5.8 Percent of respondents who eat some fruits and vegetables every day, 2016

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percent eating fruits and vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9 years old</td>
<td>87 %</td>
</tr>
<tr>
<td>10-12 years old</td>
<td>89 %</td>
</tr>
<tr>
<td>13-15 years old</td>
<td>100 %</td>
</tr>
<tr>
<td>16-18 years old</td>
<td>50 %</td>
</tr>
<tr>
<td>Did not give age</td>
<td>82 %</td>
</tr>
</tbody>
</table>

Table notes: There were approximately 360 total respondents  
Source: Boys and Girls Club of Corvallis Year End BBQ questionnaire results.
Table 5.9 Percent of respondents who have food they can eat in their house every day, 2016

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percent active at least 3 days a week</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9 years old</td>
<td>79 %</td>
</tr>
<tr>
<td>10-12 years old</td>
<td>90 %</td>
</tr>
<tr>
<td>13-15 years old</td>
<td>75 %</td>
</tr>
<tr>
<td>16-18 years old</td>
<td>100 %</td>
</tr>
<tr>
<td>Did not give age</td>
<td>76 %</td>
</tr>
</tbody>
</table>

Table notes: There were approximately 360 total respondents.
Source: Boys and Girls Club of Corvallis Year End BBQ questionnaire results.

South Benton County Agricultural Workers

As part of its Monroe Farms Survey, Benton County Health Department asked agricultural workers about their access to health care.

Lack of health insurance is a very large barrier to health care. 45 percent of the workers surveyed said they will only seek medical help if it is an emergency. In this case they utilize emergency departments. Twenty-two percent of the workers seek health care at community clinics, such as the Monroe School-Based Health Clinic. Eleven percent use private practice, 11 percent use special programs such as health fairs, and 11 percent use other options, such as lay healers. Lay healers may provide patients with teas, herbal remedies and creams. Two reasons commonly given for seeking care from other sources are lack of affordability of conventional health services, and fear of being reported to immigration authorities and being deported.

The most common health services needed by agricultural workers are medical care and dental care, which were each cited by 31 percent of respondents. Most of the agricultural workers have severe gum disease, in part due to never having had a dental cleaning. Many have decayed teeth or other dental needs. The agricultural workers surveyed said that they only seek medical care for conditions that require immediate attention rather than preventive care which could protect them against more serious medical issues.277

Conclusion

Examining the ways in which various populations interact with the health care system is important to help us recognize the barriers that many residents face when obtaining health services. As highlighted throughout this chapter, the data-driven exploration of health services access is still developing, as are the frameworks that act as a guide. We still have little knowledge on a local scale of how factors such as race and ethnicity, education level, disability status, language ability, immigration status, and gender identity influence an individual’s ability and desire to access health services. Finally, closing gaps in quantifying the workforce would provide a better understanding of the co-development of the health care system with those it serves. The data presented in this chapter can support an initial understanding and baseline of access to health services in the region, while calling attention to challenges faced by many in our community when accessing health services.
Chapter 6
Physical Health

Physical health is influenced by a combination of factors, including environment, social and behavioral factors, genetics, nutrition, and exercise. There are large overlaps between physical health and behavioral health (Chapter 7). Many measures listed in this chapter, such as domestic violence, could alternately be organized with behavioral health, and vice versa.

Traditional measures used to evaluate the health of populations are morbidity (incidence of disease) and mortality (deaths). Examining various cancers, heart disease, and other major causes can highlight notable improvement as well as areas in which the region is in need of improvement. The more detailed data available about disparities within particular populations and illnesses, the better communities can address these issues effectively in the region. Many of the conditions that cause illness and death within the region have well-established causes, a number of them rooted in behaviors or risk factors that can be prevented.

Throughout this chapter, many statistics are aggregated over a set of years in order to report reliable data. When incidence or prevalence rates are reported across many years, the statistic is per person per year. For example, the all-cancer incidence rate in Oregon across 2010-2014 was 433 cases per 100,000 people; this means that in each of the five years between 2010 and 2014, 433 cases were diagnosed for every 100,000 people in the population.

Maternal and Infant Health

All fertility and maternal/infant health data is based on the county of residence of the mother, not the county where the infant was born.

Fertility Rates

The total fertility rate is the total number of births per 1,000 women in a given year. The total fertility rate is based on the age-specific fertility rates of women in their “child-bearing years”, which is ages 15 to 44. Figure 6.1 below illustrates the total fertility rates of different racial/ethnic groups within Benton County. Among racial/ethnic groups, women who identify as Hispanic or Latina have the highest total fertility rate in Benton County, equal to about 1.5 times the total fertility rate of women who identify as White.
Figure 6.1: Fertility rate, (births per 1,000 women) by race/ethnicity in Benton County, 2013-2015

Figure notes: These data represent 4,242 births over 3 years. Fertility rate data is based on county of residence, not county of birth.
Source: Oregon Healthy Authority, Center for Health Statistics, Birth Certificate Data

Compared to Oregon, women in Benton County tend to have fewer births per 1,000 women across all age groups, as well as having children at a later age than women in Linn or Lincoln counties. The highest fertility rate in Benton County occurs for women between ages 30 to 34, while in Linn and Lincoln counties the fertility rate is highest for women ages 20 to 29.

[Figure 6.2 is displayed on the following page]
Figure 6.2: Age-specific fertility rates (births per 1,000 women) by maternal age in Benton County, 2013-2015

Figure notes: These data represent 4,242 births over 3 years. 
Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

Prenatal Care and Healthy Pregnancy

Infants born to mothers who receive no prenatal care are three times more likely to have a low birth weight, and five times more likely to die of complications than those whose mothers received prenatal care. Prenatal care with/by a medical professional includes discussing a mother’s healthy choices and body changes; prenatal testing and counseling; identifying and treating medical complications like gestational hypertension, diabetes, and anemia; promoting optimal weight gain; testing for and treating sexually transmitted infections; oral health assessment and treatment; and maternal mental health, tobacco and substance abuse screening.

Across the region from 2013 to 2015, a total of 88 percent of all mothers were able to access adequate prenatal care, only slightly higher than the 87 percent of Oregon mothers during the same time period. Disparities exist among different age groups within Benton County. As shown in Figure 6.3, younger mothers are less likely to access adequate prenatal care than older mothers. Compared with women over the age of 25, women under the age of 25 are nearly twice as likely to receive inadequate or no prenatal health care.
There also exist disparities in prenatal care access among mothers of different race/ethnic groups in Benton County. Overall, mothers who identify as White, non-Hispanic tend to access adequate prenatal care more frequently when compared to all other racial/ethnic groups (Figure 6.4).\textsuperscript{282}

**Figure 6.4: Percent of births for which mothers accessed inadequate or no prenatal care by race/ethnicity in Benton County, 2008-2015**

Figure notes: These data represent 5,894 births over 8 years. Results should be interpreted with caution for the American Indian/Alaska Native, Black, and Pacific Islander groups due to a low number of births.

*Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data*
Smoking during Pregnancy

Smoking during pregnancy is the single most preventable cause of illness and death among infants. Smoking during pregnancy increases the risk of stillbirth, low birth weight, sudden infant death syndrome (SIDS), and preterm birth. It also contributes to cognitive and behavioral problems and respiratory problems in both the mother and the child.283

Children exposed to tobacco before birth are more than twice as likely to become regular smokers themselves later in life, compared with children not exposed to tobacco in utero.284 Women who quit smoking before pregnancy or early in pregnancy also significantly reduce their risks for delays in conception (e.g. infertility) and other complications during birth.285

On average in 2013-2015, 8 percent of mothers smoked during pregnancy in the Benton County. This percentage is higher than both the state average of 11 percent and the Healthy People 2020 target of 1.4 percent.286 The maternal smoking rate in the Benton County is lower than Oregon (10 percent) across all age groups. However, there is a notable difference in smoking rates when comparing age groups, in which the rate of smoking among pregnant women under the age of 25 is over two times the rate of smoking among pregnant women over the age of 25.

The rate of smoking among pregnant women in Benton County is highest among 18 to 19 year women (at almost 1 in 4 pregnant women), followed by 20 to 24 year old women (Figure 6.5).

Figure 6.5: Maternal smoking rates (percentages) among pregnant women in Benton County, 2013-2015

![Maternal smoking rates diagram](image)

Figure notes: These data represent 5,882 births over 8 years.  
Source: Oregon Health Authority, Center for Vital Statistics
Smoking cessation counseling and programs offered during prenatal care can provide effective assistance to encourage pregnant women to quit smoking. There currently are no established smoking cessation programs specifically for mothers in the region, but efforts are being made to make them available at the county level. The standard of care among health professionals providing prenatal care is to determine if the mother smokes and, if so, to discuss the benefits of quitting smoking and offer resources to support the mother if she decides to quit.

**Alcohol Use During Pregnancy**

Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong disorders known as fetal alcohol spectrum disorders (FASDs). Children with FASDs can have a host of problems, including poor coordination, hyperactivity behavior, difficulty paying attention, poor memory, difficulty in school, learning disabilities, speech and language delays, poor reasoning and judgment skills, vision or hearing problems, and complications with the heart, kidney, or bones. There is no known safe amount of alcohol to drink during pregnancy and no known safe time to drink alcohol during pregnancy.\(^{287}\)

The Pregnancy Risk Assessment Monitoring System (PRAMS), a national surveillance system, provides information about women who have had a recent live birth. The most recent data is from 2011. Oregon state-level data indicates that 92 percent of pregnant mothers abstained from alcohol during the last 3 months of their pregnancies. Less than one percent had more than one drink per week during the third trimester.\(^{288}\) There are no regional or county-level data available at present.

**Teen Pregnancy**

Teen mothers face significant social stigma for becoming pregnant while young or before marriage. Becoming pregnant while still a teenager is not a sign of poor health, but teenage pregnancy rates are a commonly reported measure of health because it indicates a social environment that raises the risk of poor health outcomes and because teen mothers face greater barriers to health than older mothers.

Teen mothers are less likely to receive early prenatal care, and are more likely to experience blood-pressure complications and premature birth.\(^{289}\) Children of teenage mothers are also more likely to become teen parents themselves, be incarcerated during adolescence, drop out of school, experience more health problems, and are two times as likely to experience abuse and neglect. Negative effects of early childbearing on teenage fathers include an increased likelihood of partaking in delinquent behaviors, such as alcohol and drug abuse or dealing, and fewer years of completed school in comparison to their childless peers.\(^{290}\) On average in the United States, 50 percent of teen mothers receive a high school diploma by age 22, compared to 90 percent of women who had not given birth as a teenager.\(^{291}\)

The most recent information available indicates that, overall, regional teen pregnancy rates (ages 15 to 19) have decreased between 2008 and 2015 (Figure 6.6). Given the small number
of teen pregnancies each year, three year averages are shown. The three year average in 2008-2010 in Benton County was 9.2 pregnancies per 1,000 women age 15-19. This number declined to 5.6 pregnancies per 1000 women age 15-19 in 2013-2015. Regional teen pregnancy rates were below state teen pregnancy rates in all years.

**Figure 6.6: Pregnancy rate per 1,000 women age 15-19 years in Benton County and the LBL Region, 3 year moving average, 2008-2015**

Despite the overall decline in rates, there are striking differences in teen birth rates for Hispanic and non-Hispanic populations at both the regional and state levels. Between 2013 and 2015, Hispanic teens aged 15 to 19 had a pregnancy rate in Benton County that was 2.3 times higher than that of all teens. Notwithstanding the greater Hispanic teen pregnancy rates, the pregnancy rate among Hispanic teens is declining faster than the pregnancy rate among non-Hispanic teens. More data is presented in Chapter 8.

**Oregon Health Plan effective use of contraception**

The Oregon Health Authority assessed the proportion of female adult members who were not seeking to become pregnant and who used effective contraception. Effective contraception includes intra-uterine devices, implants, sterilization, and hormonal birth control such as pills and patches. Effective contraception does not include condoms. 63 percent of IHN-CCO members in this group used effective contraception in 2014.
**Infant Mortality**

The annual infant mortality occurrence in Benton County was 3.3 deaths per 1,000 births from 2013 to 2015. Infant mortality rates are lower in Benton County than in Oregon (5.1 deaths per 1,000 births). Benton County has surpassed the Healthy People target of 6.0 per 1,000 births. Principal causes of infant mortality over the 10 years between 2004 and 2013 included include congenital malformations, low birthweight and/or premature birth, sudden infant death syndrome, accidents, and complications from birth.

**Premature Birth and Low Birth Weight**

Premature birth and low birth weight among infants are commonly used measures of maternal and infant health. Infants that are born too early and/or with a low birth weight are at higher risk of dying in the first year of life and of having developmental problems and worse health outcomes throughout life. Both conditions are preventable to varying degrees and have been found to be influenced by a variety of factors.

**Premature Birth**

Premature birth (also known as preterm birth) is a measure of births that occur before the projected full term of the pregnancy. Infants are considered premature when they are born before completing 37 weeks (about 8.5 months) of pregnancy.

Many maternal factors can influence premature birth. Established preventable risk factors for premature birth include:

- Chronic health conditions in the mother, such as high blood pressure, and diabetes;
- Certain infections during pregnancy; and
- Cigarette smoking, alcohol use, or illicit drug use during pregnancy.

The percent of preterm births in Benton County is generally below the Healthy People 2020 target of 11.4 percent. However, disparities exist among women when stratified by race/ethnicity, as shown in Figure 6.7.

---

* Infant mortality is defined as the death of a live-born infant before the age of 1.
Figure 6.7: Percent of births that are premature in Benton County, 2008-2015

Figure notes: These data represent 5,893 births over 8 years. Premature birth data is based on county of residence of the mother, not county of birth. Data for American Indian/Alaska Native, Black, and Pacific Islander rely on small numbers and may not be reliable. 

Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

Low Birth Weight

Low birth weight results when an infant fails to grow sufficiently during pregnancy, and can both signal and cause health problems with the infant. Infants are considered to have low birth weight if they weigh less than 2,500 grams (about 5.5 pounds) at birth.

Established risk factors for low birth weight include:

- Premature birth;
- Limited weight gain of the mother during pregnancy;
- The mother being younger than 15 years or older than 35 years;
- Exposure to air pollution or drinking water contaminated with lead;
- Cigarette smoking, alcohol use, or illicit drug use during pregnancy; and
- Socioeconomic factors, such as having a low income, low educational level, or a high level of stress.301

From 2013 to 2015, approximately 5.6 percent of all infants born in Benton County had a low birth weight, which meets the Healthy People 2020 target of 7.8 percent.302 While Benton County and Oregon (6.2 percent) meet the Healthy People 2020 objective for low birth weight infants, differences exist among racial/ethnic groups within the county. Figure 6.7 and Figure 6.8 illustrate the variation across different racial/ethnic groups within the region.
Breastfeeding

Breastfeeding is associated with numerous health benefits for infants, such as boosting immune system response, reducing the risk of Type 2 diabetes, and preventing obesity. Breastfeeding also promotes maternal-child bonding. The American Academy of Pediatrics recommends exclusively breastfeeding for the first six months after birth and further recommends continued breastfeeding for a year or more after birth.\textsuperscript{303}

Barriers to Breastfeeding

Breastfeeding may not always come easily to new mothers, and other barriers to initiation of breastfeeding and continuation of breastfeeding might include:

- lack of support from the child’s other parent,
- lack of support from family and friends,
- hospital practices that interfere with breastfeeding,
- misperceptions about milk supply,
- no timely follow-up to questions or problems that arise after hospital discharge,
- lack of workplace support for breastfeeding,
- lack of acceptance by the community and society in general,
- widespread advertising and promotion of infant formula, and
- the common portrayal of bottle-feeding in the mass media.\textsuperscript{304}
Breastfeeding in the Region

State programs, such as the Nutrition and Health Screening Program for Women, Infants, and Children (WIC), give some insight into the percentage of participating women who breastfeed. Table 6.1 displays the available county data on mothers who participate in the WIC program and the rate of breastfeeding.  

Table 6.1: Breastfeeding rates among WIC mothers in Benton, Lincoln, and Linn counties, 2016

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>Lincoln County</th>
<th>Linn County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of pregnant women served by WIC</td>
<td>32 %</td>
<td>49 %</td>
<td>43 %</td>
</tr>
<tr>
<td>Percent of WIC mothers who started out breastfeeding</td>
<td>94 %</td>
<td>94 %</td>
<td>92 %</td>
</tr>
<tr>
<td>Percent of WIC mothers who breastfed exclusively for 6 months</td>
<td>45 %</td>
<td>36 %</td>
<td>34 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, 2016 WIC Facts

In addition to WIC, most health care providers encourage women to breastfeed their children, and there are many breastfeeding classes and support groups available in the region.

Immunizations

Immunization against communicable disease is one of the greatest advancements in public health. The major causes of premature death and disability before the development of vaccines and antibiotics were communicable disease such as measles, diphtheria, and polio. The current CDC recommendations are for children to be fully vaccinated by age two against:

- Diptheria, Tetanus, Pertussis;
- Polio;
- Measles, Mumps, Rubella;
- Hib (a bacterial infection that can cause meningitis);
- Hepatitis B; and
- Varicella (Chickenpox).
- Pneumococcal disease

This is known as the 4:3:1:3:3:1:4 schedule. In Benton County 67 percent of two-year-olds have met the 4:3:1:3:3:1:4, schedule, compared to 66 percent of children statewide. Benton County WIC children also have an immunization rate of 67 percent.  

The Oregon Health Authority tracks immunization rates among adolescents as well. The following table displays immunization rates among Benton County youth age 13 to 17 and compares them to immunization rates in the LBL Region and in Oregon.
Table 6.2: Immunization rates among youth age 13-17 in Benton County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tdap</td>
<td>93 %</td>
<td>93 %</td>
<td>93 %</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>68 %</td>
<td>65 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Seasonal influenza</td>
<td>26 %</td>
<td>24 %</td>
<td>25 %</td>
</tr>
<tr>
<td>HPV up to date</td>
<td>39 %</td>
<td>37 %</td>
<td>44 %</td>
</tr>
<tr>
<td>MMR (2+ doses)</td>
<td>86 %</td>
<td>87 %</td>
<td>97 %</td>
</tr>
</tbody>
</table>

Table notes: Tdap is the tetanus, diphtheria, and pertussis vaccine; HPV is the human papilloma virus vaccine; MMR is the measles, mumps, and rubella vaccine.

Source: Oregon Health Authority, Adolescent Immunization Rates by County

Immunizations are also an important component of preventive medicine among adults and seniors, especially for seasonal influenza. While data for all Benton County adults is not available, influenza vaccination rates tend to be higher among older adults. Approximately 53 percent of Benton County adults over age 65 are regularly vaccinated against influenza, compared to 56 percent statewide. Research indicates that vaccination rates of 80 percent in healthy persons and 90 percent in high-risk persons are necessary to provide herd immunity from influenza.

Oregon Health Plan Immunizations

Two-year-olds on the Oregon Health Plan in the LBL Region have the same immunization rate as in the rest of Benton County, 65 percent, compared to 68 percent of OHP two-year-olds statewide.

There is no directly comparable data for adolescent immunization rates among OHP adolescents, but the Oregon Health Plan does track the percent of adolescents who received meningococcal and Tdap vaccines before their 13th birthday. In the LBL Region, 58 percent of OHP adolescents received these vaccines, compared to 68 percent statewide.

Physical Activity

Regular physical activity helps improve overall health and wellness, reduces risk for obesity, and lessens the likelihood of developing many chronic diseases including diabetes, cancer, and heart disease. National physical activity guidelines recommend that children engage in at least 60 minutes of physical activity each day, including aerobic, muscle strengthening, and bone strengthening activity.

The Healthy People 2020 objective for physical activity aims to increase the proportion of adolescents who meet current national physical activity guidelines to 32 percent. As shown in Figure 6.9, 8th graders in Benton County exceeded the Healthy People 2020 objective while 11th graders did not. Overall, a larger percentage of youth in Benton County self-report
exercising for the recommended amount of time compared to Oregon youth overall.\textsuperscript{311}

Figure 6.9: Percent of youth meeting CDC recommendations for physical activity (at least 60 minutes per day), by grade, Benton and the LBL Region and Oregon, 2015

Reduction of the amount of time youth spend in front of a screen, such as viewing television, videos, or playing video games is a key strategy to promote physical activity. In 2011, the Academy of Pediatrics recommended limiting television and video time to a maximum of two hours per day for children over the age of two and no exposure to television and or videos (i.e., zero hours) for children younger than two years of age.\textsuperscript{312}

Healthy People 2020 supports increasing the proportion of children and adolescents aged two years through 12\textsuperscript{th} grade who view television, videos, or play video games for no more than two hours a day to the following percentages:

- 83.2 percent of children aged two to five years,
- 78.9 percent of children and adolescents aged 6 to 14 years, and
- 73.9 percent of adolescents in 9\textsuperscript{th} through 12\textsuperscript{th} grade.\textsuperscript{313}

Although data are unavailable for the aforementioned age groups at the county and regional level, the data shown in the following table (Table 6.3) may serve as an indicator of screen time (television and computers) among the child and adolescent population of Benton County. Table 6.3 shows that the majority of youth in 8\textsuperscript{th} and 11\textsuperscript{th} grade in the region do not spend more than two hours per school day watching television. Among 8\textsuperscript{th} and 11\textsuperscript{th} graders, Benton County youth surpass the state average and Healthy People 2020 target.\textsuperscript{314} Table 6.3 shows that about two-thirds of 8\textsuperscript{th} and 11\textsuperscript{th} graders in Benton County spend less than two hours per day on the computer or on their phone. These rates are comparable to the state average, but fall well short of the Healthy People 2020 target of 82.6 percent.\textsuperscript{315}
Table 6.3: Percent of youth who view television or other screens for no more than two hours per school day in Benton County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Limited television exposure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>83 %</td>
<td>77 %</td>
<td>76 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>82 %</td>
<td>79 %</td>
<td>80 %</td>
</tr>
<tr>
<td><strong>Limited screen exposure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>65 %</td>
<td>56 %</td>
<td>54 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>63 %</td>
<td>58 %</td>
<td>58 %</td>
</tr>
</tbody>
</table>

Table notes: Limited television exposure is defined as no more than 2 hours per school day. Limited screen exposure is defined as no more than two hours per day of video/computer games, computer use, social networks, or smartphone use, excepting school work.

Source: Oregon Healthy Teens Survey

**Adult Physical Activity**

Physical activity is important for maintaining health as a person ages. Recommendations for adults include at least an hour and fifteen minutes of vigorous-intensity activity or two-and-a-half hours of moderate-intensity activity every week, in addition to muscle-strengthening activities on two or more days a week.316

Overall, 30 percent of adults in Benton County met the CDC guidelines for physical activity* from 2010-2013, compared to 23 percent of adults in Oregon.317 There is still a significant amount of room for improvement for the county and for the state, as neither geographical region meets the Healthy People 2020 objective of having 48 percent of the population meeting the CDC guidelines for physical activity.318

Table 6.4: Age-adjusted percent of adults who meet CDC recommendations for physical activity and who get any physical activity outside of work in Benton County and Oregon, 2010-2015

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting CDC recommendations for physical activity</td>
<td>30 %</td>
<td>23 %</td>
</tr>
<tr>
<td>Any physical activity outside of work</td>
<td>87 %</td>
<td>82 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System

At the state level, participation in physical activity varies by race/ethnicity, household income, and by level of education. Adults with less than a high school education, those earning less than $25,000, and Latinos are less likely to meet CDC physical activity recommendations than their peers.319 As with children and youth, regional-level data that describe physical activity levels among adults by race/ethnicity or level of household income are not available.

* The CDC recommends 30 minutes of moderate physical activity on five or more days per week.
Recent data are not available at the county level for physical activity among older adults. The CDC recommends that adults 65 years of age or older get two hours and 30 minutes of moderate-intensity exercise (e.g. brisk walking) each week and engage in muscle-strengthening activities at least two days a week. Statewide, older adults have only a small decrease in physical activity compared to younger adults, and there are minor differences between men and women. Table 6.5 below displays physical activity at the state level among older adults.

<table>
<thead>
<tr>
<th>Table 6.5: Physical activity among older adults in Oregon, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meets recommended physical activity</strong></td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td>Men</td>
</tr>
<tr>
<td><strong>Any physical activity outside of work</strong></td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td>Men</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System

**Nutrition**

There is a well-established link between eating a healthy and balanced diet, and an increasing number of health benefits. A healthy and balanced diet involves eating a variety of foods which provide essential nutrients (like dietary fiber and potassium), in the right amount – with negative health consequences from consuming too little or too much food. In addition to promoting health and supporting a healthy weight, mounting evidence links a healthy diet to lowered risks of chronic disease, including several types of cancer, osteoporosis, and cardiovascular disease.

The 2010 recommendations released by the U.S. Department of Health & Human Services and the U.S. Department of Agriculture highlights three major guidelines for Americans:

- balance calories with physical activity to manage weight;
- consume more of certain foods and nutrients such as fruits, vegetables, whole grains, fat-free and low-fat dairy products, and seafood; and
- consume fewer foods with sodium (salt), saturated fats, trans-fats, cholesterol, added sugars, and refined grains.

While research continues to show that healthy eating is a key ingredient to good health, the food environment has been changing in dramatic ways, parallel to increases in obesity rates. Portions, prices, and media messaging encourage consumption of foods high in calories, sugars, and fat. These unhealthy foods are all readily available at fast food restaurants, vending machines, and convenience stores. Meanwhile, work, school, and leisure environments are allowing fewer opportunities to burn the extra calories consumed. These changes include cut-backs in physical education classes, office jobs which include hours of sitting, and television and
computers representing a large portion of leisure activity.\textsuperscript{324} With so many aspects of daily life supporting improper nutrition, it becomes essential to look at both healthy behaviors and environmental factors to improve the nutrition and health of the entire community.

Proper nutrition among children and adolescents is essential in supporting healthy growth and development, academic performance, and well-being, while also preventing obesity and a number of chronic diseases.\textsuperscript{325} Including education about the importance of nutrition early in life helps children and adolescents to develop healthy habits that often continue into adulthood.

As shown in the table below (Table 6.6), more adolescents in Benton County self-report consuming at least five servings of fruits and vegetables per day when compared with Oregon.\textsuperscript{326}

\textbf{Table 6.6: Percent of youth consuming at least 5 servings of fruits and vegetables per day and consuming no sugar sweetened sodas in the past 7 days, Benton County, the LBL Region, and Oregon, 2015}

<table>
<thead>
<tr>
<th></th>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 servings of fruits and vegetables</strong></td>
<td>8\textsuperscript{th} grade</td>
<td>29 %</td>
<td>26 %</td>
<td>23 %</td>
</tr>
<tr>
<td></td>
<td>11\textsuperscript{th} grade</td>
<td>26 %</td>
<td>22 %</td>
<td>20 %</td>
</tr>
<tr>
<td><strong>No sugar-sweetened sodas</strong></td>
<td>8\textsuperscript{th} grade</td>
<td>37 %</td>
<td>29 %</td>
<td>29 %</td>
</tr>
<tr>
<td></td>
<td>11\textsuperscript{th} grade</td>
<td>41 %</td>
<td>33 %</td>
<td>33 %</td>
</tr>
</tbody>
</table>

\textit{Source: Oregon Healthy Teens Survey}

Nutrition and eating habits are frequently set early in life. Good nutrition can delay the physical signs of aging and prevent or slow the development of many chronic diseases, including diabetes and cancer. Approximately one in five adults in the region and in Oregon consumes at least five servings of fruits and vegetables per day (Table 6.7).\textsuperscript{327} This is similar to the percentage of children in the region. Additional assessments of fruit and vegetable intake by race/ethnicity, age group, and income levels are needed for future planning and outreach among adults in the region.

Adults are also at risk of metabolic disease from excessive consumption of sugar, from sugar-sweetened beverages and other sources. There is no data on abstinence from sugar-sweetened beverages, but Table 6.7 below does report the percent of Benton County and Oregon residents who drink 7 or more sodas per week.
Table 6.7: Percent of adults who consumed at least 5 servings of fruits and vegetables per day and who drank 7 or more sodas per week in Benton County and Oregon, 2012-2015.

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings of fruits and vegetables</td>
<td>20 %</td>
<td>20 %</td>
</tr>
<tr>
<td>7 or more sodas per week</td>
<td>13 %</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System

Nutrition among older adults plays an important role in immune function, as well as cognitive changes that take place as part of the aging process. Older adults can also be at increased risk for poor nutrition and dehydration, as taste sensitivity and thirst mechanisms often decline with age. Good nutrition has been shown to decrease inflammatory responses and improve immune function, as well as slow some types of cognitive (brain function) decline associated with aging.\(^{328}\) Data at the county level are not available for older adults on consumption of fruits and vegetables and is a possible area for future surveillance, but statewide data is shown in Table 6.8.

Table 6.8 Nutrition among older adults in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings of fruits and vegetables</td>
<td>Women</td>
<td>19 %</td>
<td>24 %</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>12 %</td>
<td>19 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System

**Obesity**

Being obese or overweight\(^*\) is a complicated health condition. The risk of unhealthy weight is influenced by diet, exercise, and other behaviors, but it also depends strongly on genetic and environmental factors. Obesity is also correlated with socio-economic status and other social determinants of health. In addition to being a poor health outcome, obesity and overweight status can increase the risk of many diseases such as diabetes, heart disease, and possible cancer.

The Oregon Healthy Teens Survey found that 21 percent of all eighth graders in Benton County are overweight or obese (Table 6.9). Rates of being obese or overweight are lower for 11\(^{th}\) graders in Benton County, with 16 percent identifying as overweight or obese.\(^{329}\)

\(^*\) Obesity is defined as having a body mass index (BMI) of 30 or more; Overweight is defined as having a BMI of above 25 and less than 30. Healthy weight is a BMI between 20 and 25.
Table 6.9: Overweight and obesity prevalence in Linn, Benton and Lincoln counties and Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>14 %</td>
<td>16 %</td>
<td>15 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>9 %</td>
<td>14 %</td>
<td>15 %</td>
</tr>
<tr>
<td>Obese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>7 %</td>
<td>11 %</td>
<td>11 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>7 %</td>
<td>12 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

About 20 percent of children in Benton County are overweight or obese, but the prevalence of overweight or obesity among adults more than doubles. An estimated 22 percent of adults in Benton County are obese; an additional 32 percent are overweight (Table 6.10). Therefore, about 54 percent of Benton County adults are either overweight or obese. Since 1990, Oregon’s adult obesity rate has increased 121 percent. Obesity contributes to the death of about 1,400 Oregonians each year, making it second only to tobacco as a preventable cause of death.

Table 6.10: Estimated prevalence of overweight and obesity among adults in the region and Oregon, 2014-2015

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight</td>
<td>32 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Obese</td>
<td>22 %</td>
<td>27 %</td>
</tr>
</tbody>
</table>

Source: Oregon Behavioral Risk Factors Surveillance System, Small Area Estimates

Statewide combined obesity and overweight rates are similar among the elderly population and among adults between 45 and 64 years of age (approximately 63 percent). Specific data is not available at the county level.

Oregon Health Plan Obesity

Among IHN-CCO members, the prevalence of obesity is 39 percent, slightly higher than the prevalence of obesity among all Oregon Medicaid members at 36 percent. Obesity is least prevalent among Asian Medicaid members and most prevalent among Pacific Islander Medicaid members.

Oral Health

Good oral health is essential to overall physical and mental health and encompasses more than just dental check-ups. Oral disease can lead to cavities and gum disease, which can in turn contribute to other diseases or conditions. Conversely, certain chronic mental and physical health conditions can also contribute to declines in oral health. Gum disease is associated with endocarditis (an infection of the inner lining of the heart), cardiovascular disease, premature birth, and low birth weight. Osteoporosis can lead to tooth loss, and individuals with diabetes and immune system disorders are more susceptible to gum and bone infections. Poor
oral health can also affect self-esteem, reduce employment opportunities, and increase absenteeism.\(^{335}\)

Among children in the U.S., dental cavities are the most common childhood disease.\(^{336}\) Cavities are almost completely preventable through optimal water fluoridation, application of dental sealants to children’s teeth, effective oral hygiene (brushing teeth and flossing), and regular preventive visits to the dentist.\(^{337}\) Across the county, the proportion of 8\(^{th}\) grade and 11\(^{th}\) grade youth who have ever had a cavity is higher than the Healthy People 2020 target of no more than 48.3 percent (Table 6.11). The proportions do not change much in the three years between 8\(^{th}\) grade and 11\(^{th}\) grade – this indicates that most tooth decay occurs in children before the 8\(^{th}\) grade.\(^{338}\)

**Table 6.11: Percent of youth who have ever had a cavity in Benton County, the region, and Oregon, 2015**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8(^{th}) grade</td>
<td>65 %</td>
<td>71 %</td>
<td>69 %</td>
</tr>
<tr>
<td>11(^{th}) grade</td>
<td>70 %</td>
<td>73 %</td>
<td>75 %</td>
</tr>
</tbody>
</table>

*Source: Oregon Healthy Teens Survey*

Achieving and maintaining good oral health is a significant challenge for many people in the region, particularly those with lower incomes. This challenge may be exacerbated by the fact that not all cities, districts, or water supplies in the region are fluoridated (see Chapter 3 Environment).

One of the objectives of Healthy People 2020 is to increase the proportion of U.S. communities with fluoridated water to 75 percent.\(^{339}\) Benton County surpasses this percentage (at 96 percent).\(^{340}\) In contrast, approximately 27 percent of Oregon residents have access to fluoridation through community water systems, the second lowest statewide percentage in the country.\(^{341}\)

**Infectious Diseases**

Prevention and control of infectious illnesses rank among the greatest health advances of the 20\(^{th}\) century. The World Health Organization defines infectious diseases as those that are caused by bacteria, viruses, parasites, or fungi; and can be passed from person to person.\(^{342}\) Some are transmitted via ingesting contaminated food or water, many are spread by microorganisms in coughs or sneezes, and others result from exposures in the environment or insect bites. Diseases that spread from animals are called zoonotic infections.

All physicians, health care providers, and laboratories in Oregon are required by law to actively report confirmed or suspect diagnoses of over 50 infectious diseases and conditions to their local health departments.\(^{343}\) These reports are directed through county health departments to the Oregon Public Health Division which collects and distributes data to inform health departments, physicians and the public. Reporting enables appropriate public health follow-
up for patients, helps identify outbreaks, and provides a better understanding of disease transmission patterns. Some diseases are subject to restrictions on school attendance, daycare attendance, patient care, and food handling. Communicable disease nurses in Benton County investigated 642 reports of reportable communicable diseases during 2016, a rate of 12.3 investigations per week.\textsuperscript{344}

**Respiratory Illnesses**

Respiratory illnesses such as the influenza virus, commonly referred to as the flu, spread from person to person when droplets from a cough or sneeze of an infected person move through the air and enter the mouth or nose of people nearby. Some of the microorganisms in these droplets can also live on surfaces for hours, such as desks or doorknobs, and can spread when people touch these surfaces and then touch their eyes, mouth, and nose.

The common cold\textsuperscript{*} and influenza are the most common respiratory illnesses. However, local, state, and national statistics for these diseases are difficult to ascertain because doctors and laboratories are not required to report them to public health authorities. This is because most people experience only mild, short-term illness, and do not seek medical attention. The Oregon Health Authority reports influenza and pneumonia mortality jointly; Benton County rates have been steadily declining, despite a sudden spike in 2011 (Figure 6.10).

**Figure 6.10: Age-adjusted influenza and pneumonia mortality rates in Benton County and the LBL Region, 2008-2015**

\begin{center}
\includegraphics[width=\textwidth]{figure6.10.png}
\end{center}

\textit{Source: Oregon Public Health Assessment Tool}

\textsuperscript{*} More than 200 viruses cause what is typically considered the common cold, including rhinovirus, coronavirus, respiratory syncytial virus, and the parainfluenza virus.
Less common, but more serious respiratory illnesses include pneumonia, pertussis (whooping cough), and tuberculosis. In general, infectious tuberculosis is extremely rare in Benton County. Between 2010 and 2016, an average of 2.5 cases were reported annually. Pertussis cases are actively managed and treatment is overseen by public health nurses.

Pertussis is a very contagious bacterial infection that causes a coughing illness which may last six to ten weeks or longer. It is an endemic disease with epidemic peaks occurring every two to seven years and has proven persistence despite widespread childhood immunization. There was a sharp rise of pertussis in the United States during 2012. Washington State was particularly impacted and declared a pertussis epidemic in April 2012, reporting almost 10 times more cases of pertussis than in 2011. Oregon reported more than twice as many pertussis cases in 2012 as in 2011. The number of cases of pertussis in the region fluctuates annually; an outbreak in 2012 pushed the incidence above the historical average of approximately 14 diagnoses per 100,000 people per year, and it continues to rise. In Benton County in particular, the number of reported cases of pertussis in 2015 were more than three times higher the number of reported cases in 2011 (Figure 6.11).

Figure 6.11: Age-adjusted rate of pertussis infections per 100,000 persons in the Benton County and the LBL Region, 2007-2016

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System

Foodborne Illnesses

The Centers for Disease Control and Prevention (CDC) estimate that each year, one in six Americans (48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. The leading causes of foodborne illness in the United States are due to exposure to norovirus, Salmonella, Campylobacter, and Clostridium perfringens. Norovirus, Salmonella, and Campylobacter are also among the leading causes of death due to foodborne illness.
Figure 6.12 below shows that the incidence of campylobacter in the region has historically ranged between 15 and 32 cases per 100,000 people each year.

**Figure 6.12: Incidence of Campylobacter infection per 100,000 persons in Benton County and the LBL Region, 2007-2016**

![Graph showing incidence of Campylobacter infection per 100,000 persons in Benton County and the LBL Region, 2007-2016.](image)

*Figure notes: Case numbers may be updated as reports are confirmed.*

*Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System*

*Escherichia coli* infections, most commonly 0157:H7 (a specific strain of *E. coli*), is another significant cause of foodborne illness. Around 5 to 10 percent of those who are diagnosed with *E. coli* develop potentially life-threatening complications.\(^3\) Benton County’s rate of *E. coli* per 100,000 persons has remained near the tri-county average of in between five and six cases annually per 100,000 people (Figure 6.13).\(^4\)

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\(^3\) Source: [Oregon Health Authority](https://www.oregon.gov/oha/index.cfm).

\(^4\) Source: [Oregon Health Authority](https://www.oregon.gov/oha/index.cfm).
Sexually Transmitted Infections (STIs)

Sexually transmitted infections (STIs, also sometimes called sexually transmitted diseases, STDs) are infections that can be passed from one person to another through sexual contact. Untreated STIs can have consequences for individuals’ health such as infertility and even death. Testing for STIs is a very effective mechanism for preventing the spread of STIs. Even incurable STIs, like HIV, are much less likely to spread if infected individuals receive proper treatment. However, untested individuals are unable to receive the treatment they need and are also much more likely to pass on the infection to others.

Chlamydia and gonorrhea are the most common STIs in the region. Approximately 80 to 90 percent of chlamydia infections and about 50 percent of gonorrhea infections are asymptomatic in women and may go undiagnosed. If left untreated, these infections may lead to pelvic inflammatory disease, which can cause tubal infertility, ectopic pregnancy and chronic pelvic pain.\(^{350}\)

Chlamydia

Chlamydia is the most common reportable illness in Oregon, with infection rates steadily increasing over the past decade. In both Oregon and the region, reported rates of chlamydia are more than twice as high in women as in men; for every 10 men diagnosed with chlamydia, 25 women are diagnosed. Current guidelines recommend chlamydia screening in women who are not symptomatic, but do not recommend the same screening for men without symptoms. This likely contributes to the higher rate of reported chlamydia cases among women, rather
than a difference in infection rates by gender. Overall, Benton County has had a higher rate of chlamydia than the region, although rates are increasing at both geographic levels (Figure 6.14).

**Figure 6.14: Rate of chlamydia infection per 100,000 persons in Benton County and the LBL Region, 2007-2016**

![Graph showing the rate of chlamydia infection per 100,000 persons in Benton County and the LBL Region from 2007 to 2016.]

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System

**Oregon Health Plan Chlamydia Screening**

Oregon must track and report the percentage of sexually active young women (ages 16-24) on the Oregon Health Plan who are screened for chlamydia. Statewide, 48 percent of young women on OHP underwent screening in 2016, about a half-percent increase from 2015. African American women on OHP are screened at a rate of 56 percent, while Asian American women are screened at a rate of 37 percent. Young women on OHP in the IHN-CCO region are screened at a rate of 45 percent.352

**Gonorrhea**

Another reportable sexually transmitted infection that is present in the region is gonorrhea. In general, women are more likely than men to become infected with gonorrhea after exposure. However, as with chlamydia, women are less likely than men to develop symptoms following infection.353 Gonorrhea infection rates in the region have consistently stayed below the state rate, but rates have recently spiked. Figure 6.15 shows the variation in gonorrhea incidence rates in the region and Benton County for the past ten years.
Figure 6.15: Rate of gonorrhea infection per 100,000 persons in Benton County and the LBL Region, 2007-2016

![Gonorrhea infection rate graph]

Figure notes: Case numbers may be updated as reports are confirmed.

The key risk factor for sexually transmitted infections is age. Regional residents between 15 and 24 years of age contract chlamydia at a rate 4.3 times higher than the infection rate among all ages. This trend holds for state infection rates as well. Gonorrhea infection rates are also influenced by age; 15-24 year olds in the region have infection rates 2.7 times as high as the infection rate among all ages (Table 6.12).

Table 6.12: Age-specific incidence rates of chlamydia and gonorrhea, diagnoses per 100,000 persons in Benton County and Oregon, 2015

<table>
<thead>
<tr>
<th>Age</th>
<th>Chlamydia</th>
<th>Gonorrhea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benton County</td>
<td>Oregon</td>
</tr>
<tr>
<td>15-24</td>
<td>1,283</td>
<td>1,698</td>
</tr>
<tr>
<td>25-44</td>
<td>348</td>
<td>454</td>
</tr>
<tr>
<td>45-64</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>65 and older</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Syphilis
Syphilis is a historically rare but potentially fatal sexually transmitted infection. The number of cases of syphilis grew very quickly between 2011 and 2015, from about one case per year to 15 cases in 2015. It is unclear if the spike in 2015 is transient or if the incidence rate will remain above the historical average. Figure 6.16 shows the increase in syphilis incidence in Benton County and the LBL region over the past 10 years.
HIV/AIDS

HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) remains an important public health problem in Oregon. From 1981 through 2010, 8,753 Oregonians were diagnosed with HIV infection. Of those, 40 percent (3,540) have since died.\(^{354}\) Fortunately, death rates have decreased dramatically since the development of effective antiretroviral therapies. HIV/AIDS is now managed as a serious but not necessarily fatal chronic disease. As a result, the number of Oregonians living with HIV infections has increased from 2,720 to 5,213 from 1997 to 2010. New HIV diagnoses in Oregon are most common among 35–39 year old males. Between 2007 and 2015 the incidence of HIV in Benton County was 3.5 cases per 100,000 persons per year, about two-thirds of the state’s incidence (6.5 cases per 100,000 persons per year) during that time period.\(^{355}\)

HIV Testing among Oregon Health Plan Members

Just under half (49 percent) of OHP members state-wide have ever been tested for HIV as of 2014. There is a wide range in the testing rates among differing races and ethnicities. Asian OHP members were screened the least of all races and ethnicities with a testing rate of 25 percent, while African Americans and American Indians/Alaska Natives were tested at the highest rate (58 percent). In the IHN-CCO region, only 46 percent of Medicaid adults have been tested for HIV. Only three regions in the state reported lower testing rates.\(^{356}\)
**Viral Hepatitis**

Although there is a very low incidence rate, viral Hepatitis, especially Hepatitis A, B, and C, are other infectious diseases affecting residents of the region. Transmission of Hepatitis A can occur person-to-person through an oral-fecal route; through exposure to contaminated water, ice, or shellfish harvested from sewage-contaminated water; or from fruits, vegetables, or other foods that are eaten uncooked and that were contaminated during harvesting or subsequent handling. Hepatitis B and C infection are transmitted by activities that involve contact with blood, blood products, and other bodily fluids, such as unprotected sexual contact, injection drug use, and transfusions with blood that has not been screened for viral hepatitis.357

| Table 6.13: Annual hepatitis infection rate per 100,000 people, Benton County, the LBL Region, and Oregon, 2007-2015 |
|---------------------------------|-----------------|-----------------|-----------------|
|                                | Benton County   | LBL Region      | Oregon          |
| Hepatitis A                    | **              | 0.2             | 0.5             |
| Hepatitis B (acute)            | 0.5             | 1.2             | 1.0             |
| Hepatitis B (chronic)          | 10.3            | 6.7             | 12.0            |
| Hepatitis C (acute)            | **              | 0.3             | 0.6             |
| Hepatitis C (chronic)          | 70              | 128             | 130             |

Table notes: ** indicates a rate based on fewer than 5 reported infections. Infection rates are based on 9 years of data, from 2007 to 2015 but represent infections per 100,000 people per year.

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Benton County recorded four Hepatitis A cases from 2007 to 2013. Between 2007 and 2013, there were 19 new recorded cases of acute Hepatitis B and seven recorded cases of acute Hepatitis C (past or present case, unspecified).358 Current estimates suggest that 65 percent of people infected with Hepatitis B and 75 percent of people infected with Hepatitis C are unaware of their infections.359 Overall, males experience higher rates of Hepatitis B and C infection than females.

**Zoonotic Illnesses**

Zoonotic illnesses are infectious diseases that can be spread from animals to humans. There are many zoonotic diseases, and their threat to human health is growing. This is due to increasing global movement of people and animals, and the effects of human populations expanding into previously undeveloped wildlife habitats.

Some zoonotic diseases are transmitted directly from animals to people, some result from contamination of the environment by animals, and others require a vector such as a tick or mosquito. Examples of zoonotic diseases include:

- Bacterial - *Salmonella*, *E. coli*, leptospirosis;
- Viral - Rabies, avian influenza;
- Fungal - Ringworm, sporotrichosis;
• Parasitic - Toxoplasmosis, larval migraines due to roundworms;
• Vector-borne - West Nile virus, spread by mosquitoes, and Lyme disease, spread by ticks.

Climate change may also lead to greater zoonotic disease threats. Zoonotic diseases can cause symptoms such as diarrhea, muscle aches, and fever. Some diseases cause only mild illness while others can be life threatening. One such disease is rabies, which is virtually always fatal if left untreated. Rabies is endemic in the Oregon bat population.

Injury and Violence

Child Abuse

In 2016, there were a total of 359 reports of child abuse or neglect in Benton County, of which 110 (31 percent) were founded (determined to be abuse). The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94 percent of reports in Oregon); parents account for 78 percent of all perpetrators. Child abuse rates in Benton County have remained lower than Oregon and have been fairly stable over the years.

Figure 6.17: Founded abuse rate per 1,000 for children under 18 years of age in Benton County, the LBL Region, and Oregon, 2011-2015

Figure notes: Rates include neglect, physical abuse, and sexual abuse. 2012 data is from the Portland State University Population Research Center. Starting in 2013, the population data is one year behind the year shown and is from Puzzanchera, C., Sladky, A. and Kang, W. (2014). "Easy Access to Juvenile Populations: 1990-2013." Source: Oregon Department of Human Services, Child Welfare Data Book
Not all reported cases of child abuse result in a foster care placement. Children are placed in foster care for a variety of reasons. Some are placed in foster care because their families cannot provide them with basic safety and protection, while others have had negative experiences such as parental substance abuse, sexual or physical abuse, and abandonment. In Oregon, many children are in foster care due to a history of abuse or neglect.\textsuperscript{366} The rates of foster care (Figure 6.18) parallel the rates of child abuse (Figure 6.17).

**Figure 6.18: Children in foster care, rate per 1,000 children Benton County, the LBL Region, and Oregon, 2011-2015**

![Graph showing the rates of foster care from 2011 to 2015 for Benton County, the LBL Region, and Oregon.]

Figure notes: State totals do not include Title IV-E eligible children served by tribes.
*Source: Oregon Department of Human Services: Children, Adults and Families Division. Child Welfare Data Books*

Family stress is a major underlying factor associated with families of abused and neglected children. Major sources of family stress often include drug and/or alcohol abuse, domestic violence, parental involvement with law enforcement agencies (LEA), and financial distress within the family. Many families also have significant child care responsibilities, and some parents may even have a history of abuse as children. Often, families experience multiple sources of stress. Nearly half of documented child abuse in Oregon is linked to parent or caregiver alcohol or drug use. Other common sources of stress are domestic violence, involvement with law enforcement, and financial distress.\textsuperscript{367}

The Oregon Healthy Teens Survey asks 11\textsuperscript{th} graders if they had been hit or hurt by an adult in the past year. One in five 11\textsuperscript{th} graders in Benton County reported being hit or hurt by an adult (Figure 6.19).
Figure 6.19: 11th graders hit or physically hurt by an adult within the past year in Benton County, the LBL Region, and Oregon, 2015

Source: Oregon Health Teens Survey

Domestic Violence

Domestic violence, which includes many forms of abuse, affects children and adults. Physical abuse, sexual abuse or assault, intimidation, verbal abuse and emotional abuse, or threats of such harm are all forms of domestic violence. Domestic violence can include abuse from a household member (including roommates or caregivers), intimate partners (including dating partners), or a family member (whether or not they live with the victim).\(^{368}\)

The Center Against Rape and Domestic Violence (CARDV) is a non-profit organization serving Linn and Benton counties that provides supportive services to victims of domestic violence, sexual assault, and dating abuse.\(^{369}\) Services include crisis intervention, emergency shelter, 24-hour crisis line, safety planning, advocacy, court information and support, agency and resource referrals, education, peer counseling, and outreach activities.

In their 2016-2017 fiscal year, CARDV responded to a total 6,297 calls on its 24-hour crisis line and provided emergency shelter to 116 adults and 85 children for a total of 3,092 bed nights. CARDV also provided legal system support to 860 adults and 30 teens and provided medical advocacy to 190 adults and 25 teens in Benton and Linn Counties.\(^{370}\)

Domestic violence not only has an effect on the victim, but can also have an effect on children; domestic violence poses a threat to children’s emotional, psychological, and physical well-being. Children who live with domestic violence are also at an increased risk to become direct victims of child abuse.\(^{371}\)
**Abuse of Vulnerable Adults**

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse, caregiver neglect, and financial exploitation. The information in this section includes adults and seniors.

In 2015, the Oregon Department of Human Services Office of Adult Abuse Prevention and Investigations received almost 43,000 reports of potential abuse. Of those:
- 4,215 Oregon seniors and adults with physical disabilities experienced abuse or self-neglect, up sharply from 2,608 in 2010,
- Physical abuse had the highest rate of substantiation (35.6 percent) from reports,
- The category of abuse with the greatest number of substantiated cases was financial exploitation (1,188 substantiations),
- 25 percent of substantiated abuse claims occurred in facilities, while the other 75 percent occurred in community settings.

Within Linn and Benton counties (reported together by the Department of Human Services Office of Adult Abuse Prevention and Investigations), there were 532 investigated allegations of abuse against adults with intellectual and/or developmental disabilities, of which 115 were substantiated. Of the substantiated claims in Linn and Benton counties, 21 occurred in care facilities and 94 took place in community settings.

**Violent Crime**

Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery, and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. Crime rates can also deter residents from pursuing healthy behaviors such as exercising outdoors. Additionally, exposure to crime and violence has been shown to increase stress, which may exacerbate hypertension and other stress-related disorders and contribute to obesity prevalence. Exposure to chronic stress also contributes to the increased prevalence of certain illnesses such as upper respiratory illness and asthma in neighborhoods with high levels of violence.

Violent crime rates varied widely between counties. Benton County had a violent crime rate of 116 crimes per 100,000 people from 2010-2012. This was well below the Oregon rate of 249 crimes per 100,000 people. In 2013, the tri-county region recorded 55 violent deaths, including suicide, homicide, and undetermined causes. This was a rate of 22 violent deaths per 100,000 residents, equal to the rate in Oregon.
Adverse Childhood Experiences and Intimate Partner Violence among Oregon Health Plan Members

There are two sets of results from the 2014 MBRFSS survey that are related to this section. First is a topic called “adverse childhood experiences” (ACEs). Adult Medicaid members were asked a series of 11 questions regarding whether they or a parent/adult in the home experienced depression or mental illness, alcoholism, drug abuse, incarceration, separation or divorce, physical or verbal abuse, or sexual abuse. Any 4 or more “yes” responses would qualify the responder as having had an adverse childhood experience.

A little over one-third (35 percent) of adult Medicaid members in the state of Oregon reported ACEs (compared to 23 percent for the general Oregon adult population). This value ranged from 8 percent among Asians to 51 percent among American Indians / Alaska Natives. The IHN-CCO region reported 36 percent of members as having adverse childhood experiences.

The other topic is intimate partner violence. The survey measured the number of adult Medicaid members who were physically assaulted or harmed by an intimate partner in the past 12 months. Across the state, 5 percent of members reported being victims of this violence. Only 1.4 percent of Asians, and as much as 9 percent of African Americans reported being victims. The IHN-CCO region values were similar to that of the state, with 4 percent of members stating they had experienced intimate partner violence.380

Occupational Safety and Health

With the large majority of the population engaged in some form of employment for some portion of their lives, the workplace represents an important opportunity to improve health. Occupational Safety and Health is concerned with all aspects of health and safety in the workplace, and focuses mostly on primary prevention of hazards. On a global scale, the World Health Organization (WHO) is currently addressing a wide scope of determinants of workers’ health, which includes risks for disease and injury, social factors, and access to health services. In the United States, one of the primary organizations leading the way towards health and safety in the workplace is the Occupational Safety and Health Administration (OSHA) through the United States Department of Labor.

Despite established legislation, like the Occupational Safety and Health Act of 1970, requiring employers to provide workplaces “free from recognized hazards that are causing or likely to cause death or serious physical harm”381 to their workers, the toll of workplace fatalities, injuries and illness continues to exact a large toll on society. Impacts of these injuries, both social and financial, usually fall to workers and their families, as well as taxpayer-supported programs. Examining the data around particular industries can help illustrate the various workplaces and their relative rates of injury, illness, or fatality, ultimately painting a picture of the working conditions present in the community as a whole.
Injuries

County-specific data on workplace injuries are not available, but trends in state level data can be applied to major industries in the region to get a sense of the regional risk of workplace injury and illness. Statewide, the worker injury rate was approximately 41 injuries per 1,000 workers in 2013. Worker injury rates can be broken down first by industry, and then by category (a subset of industry).

The natural resources and mining industry has the highest incidence of non-fatal workplace injuries, with approximately 69 injuries per 1,000 workers in 2013. At a finer level of detail, certain specific workplace categories (not necessarily within the natural resources or mining industry) have high incidences of injury, including structural and motor vehicle manufacturing, fire protection, and wood preservation, which all had over 120 injuries per 1,000 workers. Surpassing all other workplace categories was local government nursing and residential care, with approximately 210 injuries per 1,000 workers in 2013. Industries with low workplace injury rates are concentrated in services such as educational and social services, business services, and private health care.

The variety of industries that constitute the bulk of Benton County’s economy means that the risks of workplace injury are widely distributed. Benton County has a large natural resource industry, as well as large educational and health care sectors. As shown in Figure 6.20, natural resources and education and health services have relatively high workplace injury and illness rates in Oregon.

Figure 6.20: Oregon workplace injury and illness rates by industry, 2015

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of Injuries per 1,000 Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural resources and mining</td>
<td>67</td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>63</td>
</tr>
<tr>
<td>Education and health services</td>
<td>52</td>
</tr>
<tr>
<td>Construction</td>
<td>43</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>43</td>
</tr>
<tr>
<td>Retail trade</td>
<td>39</td>
</tr>
<tr>
<td>Leisure and hospitality</td>
<td>37</td>
</tr>
<tr>
<td>Other services</td>
<td>26</td>
</tr>
<tr>
<td>Professional and business services</td>
<td>17</td>
</tr>
<tr>
<td>Information</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Consumer and Business Services
Leading Causes of Death in the Region

In 2015, the leading causes of death (for all ages combined) in Benton County were cancer, heart disease, lung disease, stroke, and accidents. Compared with the LBL region, Benton County has fewer deaths per 100,000 residents for each of its top ten causes of death (Figure 6.21).

Preventable risk factors, such as tobacco use, diet, activity, and alcohol use, contribute substantially to these deaths. For example, in 2014, it is estimated that 17 percent of deaths in Benton County were tobacco-related deaths. This is slightly lower than the 21 percent of tobacco-related deaths in Oregon during the same time period.382

Figure 6.21: Top 10 causes of death per 100,000 persons, age-adjusted, Benton County and region, 2015

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Chronic Diseases and Conditions

Chronic diseases, such as cancer, heart disease, stroke, and diabetes are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles, such as avoiding tobacco, being physically active, and eating well, greatly reduce a person’s risk for developing chronic illnesses. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention
measures (including screening and appropriate follow-up) saves lives, reduces disability, and lowers medical costs.\textsuperscript{383}

\section*{Cancer}

Cancer is the leading cause of death in Benton County and in Oregon.\textsuperscript{384} Five types of cancer are discussed in the section: lung, colorectal, breast, prostate, and pancreatic. Lung cancer is the most common cause of cancer death for Oregonians, followed by colorectal cancer and pancreatic cancer.\textsuperscript{385} Pancreatic cancer has a very high mortality rate, in part due to the likelihood of a late diagnosis after the cancer has already progressed. Prostate cancer is a common cancer among men.

The region’s annual rate of newly diagnosed cancer cases is similar to the rate in Oregon, with the three counties ranging between 427 and 460 diagnoses per 100,000 individuals each year (Figure 6.22).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure6.22.png}
\caption{Annual age-adjusted incidence for all cancers, Benton, Lincoln, and Linn counties and Oregon, 2010-2014}
\end{figure}

As shown in Figure 6.3, age-adjusted incidence of tobacco-related cancer in the three counties varies greatly. Benton County’s age-adjusted incidence of tobacco related cancer is significantly lower than Oregon’s incidence, while Linn and Lincoln counties’ incidences are significantly higher.\textsuperscript{386} Data for all cancer and tobacco related cancer incidence are from different years and are therefore not directly comparable.
Figure 6.23: Age-adjusted tobacco related cancer incidence (per 100,000) in Benton, Lincoln, and Linn counties and Oregon, 2006-2010

Cancer rates also vary between different racial and ethnic groups. In Oregon, prevalence of cancer (the proportion of the population living with cancer) varies from a low of 3.6 percent among Asians and Pacific Islanders, to a high of 11.4 percent among American Indians and Alaska Natives. Figure 6.24 below displays data for cancer prevalence in Oregon by race and ethnicity.

Figure 6.24: Prevalence of cancer in Oregon by race and ethnicity, 2010-2011

Figure notes: Prevalence of cancer is the percent of the population that have cancer. 
Source: Oregon Health Authority, 2010-2011
Between 2013 and 2015, the mortality rate from all cancers in Benton County was 135 deaths per 100,000 people per year. Mortality rates, while lower in Benton County, were similar between the counties and close to the state rate of 161 deaths per 100,000 people, as shown in Figure 6.25, below.

**Figure 6.25: Age adjusted cancer deaths from all causes, Benton, Lincoln, and Linn counties and Oregon. 2013-2015**

![Figure 6.25](image)

Source: Oregon Public Health Assessment Tool, 2013-2015

Tobacco contributed to 21 percent of cancer deaths in Benton County between 2013 and 2015, as shown in Figure 6.26, below. This percentage is lower than the state’s percentage (29 percent).

**Figure 6.26: Age adjusted tobacco related and non-tobacco related cancer mortality in Benton County, 2013-2015**

![Figure 6.26](image)

Source: Oregon Public Health Assessment Tool, 2013-2015
Lung and Bronchial Cancer

Because lung and bronchial cancers are closely related, this section will combine them both as lung cancer. Lung cancer incidence in men is steadily declining as a result of decreasing smoking rates, but the incidence in women remains relatively flat.\textsuperscript{387} Lung cancer is the deadliest cancer in Oregon, accounting for 27 percent of cancer deaths in the state in 2013; a number which includes tobacco and non-tobacco caused lung cancers.\textsuperscript{388} The rate of lung cancer has remained fairly constant in Oregon and the United States over time.

Across the region, the decline in smoking from 2004 to 2011 reflects major implication for cancer rates, since smoking is the leading cause of lung cancers.\textsuperscript{389} The lung and bronchial cancer incidence rate for the state was 58 per 100,000 from 2010-2014, higher than the Benton County rate of 45 per 100,000.\textsuperscript{390} Oregon has a mortality rate of 44 per 100,000, while Benton County has a rate of 36 per 100,000 (Figure 6.27). Only Benton County achieves the Healthy People 2020 goal of 45.5 or fewer deaths per 100,000 people.\textsuperscript{391}

\textbf{Figure 6.27: Age-adjusted incidence and death rate of lung and bronchial cancer per 100,000 persons in Benton, Lincoln counties, and Oregon, 2010-2014}

![Graph showing age-adjusted incidence and death rate of lung and bronchial cancer per 100,000 persons in Benton, Lincoln counties, and Oregon, 2010-2014.]

\textit{Source: National Cancer Institute, State Cancer Profiles, 2016}

Breast Cancer

Oregon has the 11\textsuperscript{th} highest incidence rate for breast cancer in the United States.\textsuperscript{392} Although significant improvements have occurred in early detection and treatment, breast cancer is still a leading cause of death for women in Oregon. Only a small fraction of breast cancer cases can be linked to genetics.\textsuperscript{393}

The 2010-2014 age-adjusted incidence of breast cancer among women in Benton County was 127 diagnoses per 100,000 women, compared to 126 diagnoses per 100,000 women in Oregon.
In 2010-2014, the female breast cancer mortality rates in all three counties were close to the Oregon mortality rate, as shown in Figure 6.28. Benton County had mortality rates above the Healthy People 2020 target of 20.7 deaths per 100,000 females.

Figure 6.28: Age-adjusted breast cancer incidence and mortality rates per 100,000 women in Benton, Lincoln counties, and Oregon, 2010-2014

State trends in breast cancer are summarized as follows:

- Women are at highest risk for breast cancer.
- Women age 40 and older are at greatest risk for being diagnosed with breast cancer.
- A small percentage of women under the age of 40 develop breast cancer.
- About 85 percent of all women diagnosed with breast cancer do not have a family history of breast cancer.
- Only about 10-15 percent of breast cancers occur as a result of inherited genetic traits.
- Breast cancer in men is rare, but it does occur and should be recognized as an important area for screening and treatment.
- Race is not considered a factor for increased risk of breast cancer. However, rates of death from the disease differ among ethnic groups. In Oregon, breast cancer is the leading cause of cancer associated deaths among Latino and Asian Pacific Islander women.
- Some women may be at risk for a later stage diagnosis due to lack of access or referral to cancer screening services. Women with disabilities and African American women are more likely to be diagnosed at later stages for breast, cervical, and colorectal cancer.
**Prostate Cancer**

The 2010-2014 incidence of prostate cancer in Benton County was 98 per 100,000, slightly lower than that of Oregon’s incidence of 101 per 100,000 men (Figure 6.29). Benton County’s mortality rate for prostate cancer was also lower than that of the state, at 19 per 100,000 men compared to the state mortality rate of 21 per 100,000 men. Both Benton County and Oregon’s rates meet the Healthy People 2020 objective to reduce the mortality rate due to prostate cancer to 22 deaths per 100,000 men.

**Figure 6.29: Age-adjusted incidence and death rate of prostate cancer per 100,000 men in Benton, Lincoln counties, and Oregon, 2010-2014**

<table>
<thead>
<tr>
<th></th>
<th>Benton Incidence</th>
<th>Benton Mortality</th>
<th>Lincoln Incidence</th>
<th>Lincoln Mortality</th>
<th>Linn Incidence</th>
<th>Linn Mortality</th>
<th>Oregon Incidence</th>
<th>Oregon Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>98</td>
<td>19</td>
<td>98</td>
<td>26</td>
<td>103</td>
<td>25</td>
<td>101</td>
<td>21</td>
</tr>
</tbody>
</table>

*Source: National Cancer Institute, State Cancer Profiles, 2014*

**Colorectal Cancer**

The age-adjusted incidence of colorectal cancer in Benton County is similar to the state incidence, as Figure 6.30 demonstrates. Mortality rates of colorectal cancer in Benton County, at 13 deaths per 100,000, are slightly lower than the state rate of 14 deaths per 100,000. Both Oregon and Benton County have achieved the Healthy People 2020 target to reduce the mortality rate due to colorectal cancer to 14.5 deaths per 100,000 people.
Pancreatic Cancer

Pancreatic cancer is a disease in which cancer cells form in the tissue of the pancreas. Risk factors for pancreatic cancer include smoking, long-standing diabetes, chronic pancreatitis, and certain conditions such as hereditary pancreatitis.\(^{401}\)

The incidence rate for pancreatic cancer in Benton County from 2010-2014 was just under 12 cases per 100,000 persons, very similar to the incidence rate in all of Oregon which was just over 12 cases per 100,000.\(^{402}\) In contrast with the other cancers discussed in this section, pancreatic cancer mortality rates are close to incidence rates, with rates of 12.7 per 100,000 in Benton County and 10.9 per 100,000 in Oregon. Pancreatic cancer is difficult to diagnose before it has advanced, so survival rates tend to be lower than for other common cancers. One consequence of similarities in incidence and mortality rates is the potential for mortality rates in a given year or set of years to exceed incidence rates, as is the case for Benton County, shown in Figure 6.31. This is because the cancer may be diagnosed in a year prior to the year of death.
Cancer Screening

Research shows that screening for cancer is effective in reducing serious consequences of the disease, which is generally more treatable when detected early. Breast and cervical cancer screening rates in the region are fairly consistent with state-level screening rates (Table 6.14). Additional data are needed to identify rates of screening among race/ethnic populations, age group and income level, as risk factors differ among different populations.

Table 6.14: Age-adjusted percent of cancer screening in Benton County and Oregon, 2012-2015

<table>
<thead>
<tr>
<th>Cancer screening practice</th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammogram within past 2 years (women 50-74 years old)</td>
<td>79 %</td>
<td>77 %</td>
</tr>
<tr>
<td>Cervical cancer screening within past 3 years (women 21-65 years old)</td>
<td>83 %</td>
<td>81 %</td>
</tr>
<tr>
<td>Current on colorectal cancer screening (50-75 years old)</td>
<td>71 %</td>
<td>69 %</td>
</tr>
</tbody>
</table>

Table notes: Current on colorectal cancer screening includes the following: having a fecal occult blood test (FOBT) in the past year; a colonoscopy within the past 10 years; or, a sigmoidoscopy within the past 5 years as well as an FOBT within the past 3 years.

Source: Oregon Health Authority, Oregon Public Health Assessment Tool
**Cancer among Oregon Health Plan Members**

When surveyed about whether they had ever been told they had cancer by a health care professional, 6 percent of Oregon Medicaid members reported they had (against 8 percent of the state’s general adult population). The lowest rate was among Pacific Islanders at 2.5 percent, with the highest rate among American Indians / Alaska natives at 8 percent. The three counties served by IHN-CCO report a slightly higher rate than the state at 6.4 percent.403

**Heart Disease and Stroke**

After cancer, heart disease is the largest contributor to the mortality rate in the region and in Oregon. When combined with stroke and adjusted for age, diseases of the circulatory system are the leading causes of death in the region and Oregon.

**Cardiovascular Disease and Stroke**

The incidence of both heart attack and stroke are lower in Benton County than in Oregon, as demonstrated in Figure 6.32.

**Figure 6.32: Age-adjusted incidence of heart attack and stroke per 100,000 persons in Linn, Benton, and Lincoln counties, and Oregon, 2010-2003**

Numerous health conditions and behaviors contribute to the potential for heart disease and stroke. These include:

- High blood pressure,
- High blood cholesterol,
- Diabetes,
• Obesity,
• Lack of exercise, and
• Smoking.\textsuperscript{404}

Figure 6.33 illustrates that these contributing factors tend to be similar in prevalence in both Benton County and the state.

\textbf{Figure 6.33 Age-adjusted percent of residents with lifestyle behaviors of heart disease and stroke in Benton County and Oregon, 2010-2013}

\begin{itemize}
\item High cholesterol
  - Benton: 29.9%
  - Oregon: 31.8%
\item High blood pressure
  - Benton: 21.5%
  - Oregon: 27.7%
\item Diabetes
  - Benton: 7%
  - Oregon: 8.2%
\end{itemize}

\textit{Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System, 2010-2013}

Many of the effects of heart disease can be reversed with healthy eating, exercise, avoidance of tobacco, and stress reduction. In addition to high blood pressure, high cholesterol, and diabetes being critical health factors of heart disease and stroke, social and economic factors are also important. For example, in the U.S., low-income adults are 50 percent more likely to suffer heart disease than top wage earners, even when other risk factors such as cholesterol or smoking, are taken into account.\textsuperscript{405}
Heart Disease Mortality

After cancer, cardiovascular disease is the second leading cause of death in Benton County. Across Oregon, the death rate for heart disease is higher in rural areas than urban areas. Mortality rates are very different across the region (Figure 6.34), but the rate is lower in Benton County than in the Linn-Benton-Lincoln region and the state.

Figure 6.34: Age-adjusted heart disease mortality rate per 100,000 individuals in Benton County, the LBL Region, and Oregon, 2013-2015

Source: Oregon Health Authority: Oregon Public Health Assessment Tool, 2013-2015

Stroke Mortality

Stroke mortality rates in the region and in Oregon have not achieved the Healthy People 2020 target of a reduction to 34.8 deaths per 100,000 persons (Figure 6.35). However, Benton County’s mortality rate is the lowest in the region at 36 deaths per 100,000 people, as opposed to Oregon’s rate of 37 deaths per 100,000 people, and the Linn-Benton-Lincoln regional rate of 41 deaths per 100,000 people.
Heart Attack and Stroke among Oregon Health Plan Members

Adult Medicaid members in Oregon were also surveyed about whether they had ever had a heart attack. A little over 4 percent of members responded that they had (a value slightly lower than the general state adult population). The range in race and ethnicity included 2.4 percent among Hispanics to 6.2 percent among American Indians/Alaska Natives. Across the IHN-CCO region, the 5 percent heart attack report rate was a little higher than the state.\textsuperscript{410}

Four percent of Oregon’s Medicaid population reported having had a stroke. This is higher than the state’s population in general (3 percent). Only 1.3 percent of Hispanic OHP members reported they have had a stroke, with just over 5 percent of American Indians / Alaska Natives reporting the same. Stroke rates for the IHN region are worse than the state at 4.5 percent.\textsuperscript{411}

Diabetes

Diabetes in Adults

There are two types of diabetes identified by the medical community. Type 1 diabetes is a hormonal condition in which the body does not produce enough insulin to regulate the conversion of sugar and starches into energy. Type 1 diabetes is caused by genetic and unknown factors and is usually diagnosed in children. Fewer than five percent of diabetics are diagnosed with Type 1 diabetes.
Most diabetics are diagnosed with Type 2 diabetes. In Type 2 diabetes, the body develops resistance to insulin, so that dietary sugar absorbed into the bloodstream is not converted into glycogen at a healthy rate. There are both genetic risk factors and behavioral risk factors for developing Type 2 diabetes. Because diabetes can cause serious health complications, it is important to prevent Type 2 diabetes through healthy life choices and also catch diabetes early through health screenings.\textsuperscript{412}

Hereafter, Type 2 diabetes will be referred to as diabetes.

Risk factors for diabetes include the following:

- Being overweight or obese,
- having a parent or sibling with diabetes,
- having high blood pressure,
- having high cholesterol,
- being physically inactive,\textsuperscript{413} and
- smoking.\textsuperscript{414}

Prevalence of diabetes among adults in Benton County was 7 percent from 2010-2013.\textsuperscript{415} This estimate may be conservative, however, as many people are unaware of their status. Diabetes often develops gradually as symptoms and complications can take years to manifest.

The growing burden of diabetes affects everyone in Oregon, but rates vary by age, race/ethnicity, and household income:

- Diabetes prevalence increases with age. Oregonians under 45 have the lowest rates of diabetes (2.6 percent), while 21.1 percent of adults aged 65 to 74 years of age and 18.9 percent of adults 75 years and older have been diagnosed with diabetes.
- Oregon’s Hispanic/Latino, African American, and American Indian/Alaska Native communities have significantly higher rates of diabetes than do non-Latino Whites and Asian/Pacific Islanders.
- In 2011, the prevalence of diabetes among adults with an annual household income of less than $20,000 was nearly three times that of those with an annual household income of $75,000 or more (13.8 percent versus 4.9 percent, respectively).\textsuperscript{416}

**Diabetes Mortality**

Overall, 2013-2015 age-adjusted annual diabetes mortality rates have been consistently lower in Benton County than in the region or the state. All of these rates, however, are lower than the national diabetes mortality rate and meet the Healthy People 2020 objective of no more than 66.6 deaths per 100,000 persons.\textsuperscript{417}
Early detection and prompt treatment can reduce the burden of diabetes and its complications. Table 6.15 below shows that of the three counties in the region, a higher percentage of Lincoln County residents have had their blood sugar and cholesterol tested compared to the rest of the region and Oregon. The rate of screening in Benton and Linn counties are more similar to that of the state.

Table 6.15: Age-adjusted percent of adults with diabetes-related health screenings in Benton County and Oregon, 2010-2013

<table>
<thead>
<tr>
<th>Health screening practice</th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood sugar test within the past 3 years (45 years or older)</td>
<td>68 %</td>
<td>63 %</td>
</tr>
<tr>
<td>Cholesterol checked within the past 5 years</td>
<td>72 %</td>
<td>71 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Health screenings among Oregon adults, 2010-2013

Diabetes among Oregon Health Plan Members

Medicaid members in Oregon report having diabetes at a rate of 12 percent, whereas the general adult population report a rate of 9 percent. The highest rate in the survey came from Pacific Islanders (22 percent), while other races and ethnicities were more closely bunched around 13 percent. The three county region served by IHN had a rate that was similar to the state (12 percent).418
Asthma

Over the past 20 years, asthma has become one of the most common chronic diseases in the United States. Oregon has one of the highest asthma rates in the nation. Asthma results in direct health care costs (e.g., hospitalizations and emergency department visits) and indirect costs (e.g., missed school and work days and days of restricted activity) that affect the quality of life for people with asthma and their families.

Common asthma triggers include:

- tobacco smoke and other smoke;
- animals with fur or feathers;
- dust mites and cockroaches;
- mold or mildew;
- pollen from trees, flowers, and plants;
- being physically active;
- air pollution;
- breathing cold air;
- strong smells and sprays; and
- illnesses, such as influenza and colds.

Prevalence of Asthma in Adults

For the past 10 years, the percent of Oregonians with a current asthma diagnosis has been rising slowly. Oregon ranked among the top six states for the highest percentage of adults with current asthma diagnoses in 2011.

Two important risk factors contribute to the likelihood of an asthma diagnosis, tobacco use and obesity. Consequently, Oregon counties with asthma levels higher than the state average also tend to be counties with high smoking rates. Likewise, counties with high levels of obesity also tend to have increased prevalence and incidence of asthma.

Asthma rates are self-reported on the Oregon Healthy Teens survey. In 2015, 10 percent of Benton County 8th graders and 13 percent of 11th graders reported having asthma (Table 6.16).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>10 %</td>
<td>12 %</td>
<td>12 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>13 %</td>
<td>14 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey, 2015

Just under 10 percent of Benton County adults have an asthma diagnosis. This is similar to the rate in Oregon, which is just over 10 percent.
Detailed information on the prevalence of asthma among other sub-populations in the region is not currently available. Even so, results from statewide surveillance suggest that prevalence varies by race/ethnicity, level of education, sexual orientation, and household income (Table 6.17).

**Table 6.17: Age-adjusted prevalence of asthma in at-risk groups in Oregon, 2011**

<table>
<thead>
<tr>
<th>Population characteristic</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>11 %</td>
</tr>
<tr>
<td>African American</td>
<td>12 %</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>18 %</td>
</tr>
<tr>
<td>No high school diploma</td>
<td>17 %</td>
</tr>
<tr>
<td>Gay or Lesbian</td>
<td>12 %</td>
</tr>
<tr>
<td>Bisexual</td>
<td>16 %</td>
</tr>
<tr>
<td>Household income below $15,000</td>
<td>18 %</td>
</tr>
<tr>
<td>No health insurance</td>
<td>12 %</td>
</tr>
<tr>
<td>Oregon Health Plan</td>
<td>20 %</td>
</tr>
<tr>
<td>Rural</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: African American and American Indian and Alaska Native data from 2010-2011; Gay or Lesbian and Bisexual data from 2007 – 2011 combined.

*Source: Oregon BRFSS 2011*

**Asthma among Oregon Health Plan Members**

Among adult Medicaid members, 17 percent reported having been diagnosed with asthma. There is a wide range among different races and ethnicities, with 7 percent of Asian members diagnosed and 25 percent of American Indians/Alaska Natives diagnosed. Among the local region served by IHN-CCO, 18 percent of OHP members report an asthma diagnosis.424,425

**Arthritis**

Arthritis continues to be the most common cause of disability in the United States, affecting one in five Americans. Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues and other connective tissues. The two most common types are osteoarthritis and rheumatoid arthritis.

The prevalence of arthritis in Benton County is similar to the state-wide prevalence, at 24 percent in Benton County, compared to Oregon’s 25 percent.426

Older adults in Oregon are disproportionately affected by arthritis. Prevalence of arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men because they live longer than men. The growth of the aging population in
the region will add to the high prevalence of arthritis in the coming decades. Other risk factors include sedentary lifestyle, obesity/overweight, joint injury, and work-related joint trauma.\textsuperscript{427}

**Arthritis among Oregon Health Plan members**

Among adult Medicaid members across the state, 27 percent report being diagnosed with arthritis. In terms of race and ethnicity, both Whites and American Indian/Alaska Native members have rates above 30 percent. Across the region served by IHN, 29 percent of members have been diagnosed with arthritis.\textsuperscript{428}

**Alzheimer’s Disease**

Alzheimer’s disease is the most common form of dementia, which is a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life. Alzheimer’s disease accounts for 60 to 80 percent of all cases of dementia. Alzheimer’s disease is terminal and is the 6\textsuperscript{th} most common cause of death in Benton County. From 2013-2015, Benton County’s mortality rate for Alzheimer’s disease was 25 deaths per 100,000 people (Figure 6.37). The Alzheimer’s disease mortality rate in Oregon was much higher than in Benton County.

**Figure 6.37: Age-adjusted Alzheimer’s disease mortality rate per 100,000 individuals in Benton County, the LBL Region, and Oregon, 2015**

![Graph showing Alzheimer's disease mortality rates](image)

Source: Oregon Health Authority: Oregon Public Health Assessment Tool, 2015

It is anticipated that the number of Oregonians with Alzheimer’s disease and related dementia will increase significantly in the next two decades, mostly due to an increase in the elderly population. Currently, about 76,000 Oregonians live with Alzheimer’s disease and this number is expected to increase to 110,000 by 2025.\textsuperscript{429}
Unintentional Injury Mortality

Injuries are the number one cause of death among people under the age of 44 in Oregon and the fifth leading cause of death overall. Injury is also the number one cause of disability at all ages. Most of the events resulting in injury, disability, or death are preventable. According to Healthy People 2020, injuries and violence have an impact on the well-being of people by contributing to premature death, disability, poor mental health, high medical costs, and high unproductivity.

Nationally, the leading causes of death from injury are a result of motor vehicle traffic accidents, unintentional poisoning, and falls. Overall, these are the same leading causes of death resulting from unintentional injury in Oregon. However, falls is the number one cause, followed by poisoning and motor vehicle accidents. Risky behaviors, such as drinking and driving and the use of a hand-held cell phone while driving can be contributing factors to motor-vehicle traffic accidents. About three percent of Oregon adults report driving after having too much to drink on at least one occasion in the past month. About 15 percent of Oregon youth rode with a parent or other adult who had been drinking on at least one occasion in the past month.

Regional injury deaths follow the same pattern as the state (see Figure 6.38 below). Falls contributed to 32 percent of accidental deaths between 2009 and 2013, followed by poisoning and motor vehicle accidents. Together, these three causes comprise 82 percent of accidental deaths in the region.

Figure 6.38: Causes of unintentional injury deaths in Benton County, 2011-2015

Figure notes: These data represent 139 deaths among all Benton County residents between 2011 and 2015; a death rate of 32.1 deaths per 100,000 people per year.
Source: Oregon Public Health Assessment Tool, 2011-2015

Injury mortality is higher among males than females in all age groups in Oregon. Injury mortality rates increase with age for both sexes, starting at age five. The risks of different
major types of injury fluctuate through a person’s life. These include, among other types, falls, unintentional poisonings, motor vehicle accidents, and self-harm.

Out of the 34,160 Oregon deaths in 2014, approximately 1,796 (5 percent) were due to unintentional injuries. Of those, 33 were in Benton County. The top causes of unintentional injury deaths in the region in 2014 included falls (11 total deaths), poisoning (including overdoses of drugs and medications; 9 total deaths), and motor vehicle accidents (8 total deaths). These deaths are recorded by county of residence, not county of death. The Healthy People 2020 target for unintentional injury deaths is 36 per 100,000 persons, slightly lower than Benton County’s death rate of 38 per 100,000 persons.

**Preventing Falls**

Falls are a major cause of injury and hospitalization, and the 10th leading cause of death among older Oregonians. Nearly one in three older adults experiences a fall each year, and 20-30 percent of those who fall suffer injuries. As commonly as they occur, injuries and deaths due to falls are not an inevitable consequence of aging; they can be prevented. Muscle weakness is a significant contributing factor in falls, so physical activity is widely viewed as among the most important interventions for preventing injuries related to falls among older adults.

Hospitalization rates for falls increase drastically as adults age; the rate of hospitalizations due to a fall for adults 75 years and older is more than six times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly six times more likely to be discharged into long term care compared to older adults hospitalized for other conditions. In 2013, the cost for fall injury hospitalization among adults 65 years and older in Oregon totaled to more than $219 million. Between 2011 and 2015, the mortality rate from falls in the region was 388 deaths per 100,000 residents age 85 and older. Figure 6.39, below, highlights the difference in mortality rates for different age groups among the elderly in the region and Oregon. Regional data is presented here as the numbers are too small for publication at the county level.

[Figure 6.39 is displayed on the following page]
Conclusion

It is important to be aware of and understand the conditions and outcomes that can affect how well our bodies function, improving our quality of life and preventing loss of life. While leading causes of death in Benton County mirror those of the state, examining various physical ailments reveals areas of vast improvement, as well as areas in which the county is doing more poorly than the state average. Data on many sub-populations are noticeably absent throughout this chapter.

While we know that factors such as access to health care, mental health status, and other demographics are closely linked to particular conditions at a state or national level, without more robust data we can only guess at local trends. The more detailed data we have about disparities within particular populations and illnesses, the more ability we have to address these issues effectively in the region. As discussed throughout the chapter, many of the conditions that cause illness and death within the region have well-established causes, with a number of them linked with preventable mental health illnesses and socioeconomic situations. The following chapter takes a closer look at mental health and behavioral risk factors that affect and interplay with a person’s health and well-being.
Chapter 7
Behavioral Health

Mental health disorders are experienced by people of all ages, from early childhood through old age. Research suggests that only about 17 percent of U.S. adults are considered to be in a state of optimal mental health. An estimated 26 percent of Americans age 18 years and older are living with a mental health disorder in any given year and 46 percent will have a mental health disorder during their lifetime. These disorders include, among others, anxiety, depression, behavior disorders, persistent suicidal thoughts, schizophrenia, and Alzheimer’s disease. County Health Rankings reports the number of poor mental health days each month, both as a proxy for mental health diagnoses and as an indicator of overall mental wellness. Residents of Benton County reported an average of 4.2 poor mental health days over the previous month. This measure is based on survey responses to the question: “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” The average of 4.2 poor mental health days in Benton County is the highest number of poor mental health days reported by the County Health Rankings for Benton County since 2011. Oregonians across the state reported an average of 4.6 poor mental health days. The Healthy People 2020 benchmark is 2.3, placing the region and the state in the worst 10 percent nationwide for this measure, with clear room for improvement. From 2008 to 2011, 60 to 64 percent of regional residents reported zero poor mental health in the past 30 days. These rates are statistically equivalent to the statewide rate of 65 percent. From 2010 to 2013, self-reported depression rates in Benton County was 23 percent, close to the state rate of 25 percent.

There is a strong link between chronic disease, injury and mental illness. Tobacco use among people diagnosed with mental health conditions is twice that of the general population. Other associations between mental illness and chronic disease include cardiovascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer. Injury rates for both intentional and unintentional injuries are 26 times higher among people with a history of mental health conditions than for the general population. National research indicates that people with serious mental illness die on average 25 years earlier than the general population. Sixty percent of those deaths are due to medical conditions such as cardiovascular disease, diabetes, respiratory diseases, and infectious illnesses; 40 percent are due to suicide and injury.

Many mental health disorders can be treated effectively, and prevention of mental health disorders is a growing area of research and practice. Early diagnosis and treatment can decrease the disease burden of mental health disorders as well as associated chronic diseases. Assessing and addressing mental health remains important to ensure that all Americans lead longer, healthier lives.
One group of particular concern regarding mental health is the incarcerated population. In Oregon, the provision of effective mental health service has been shown to lead to positive outcomes. These outcomes include a dramatic drop in arrests, reduction in the likelihood and duration of incarceration, and fostering of self-sufficiency and well-being as a result of improved social, emotional, and vocational functioning.\footnote{446} Approximately 3,400 adults with mental illnesses were incarcerated in prisons in Oregon in 2010.\footnote{447} This was a prevalence of approximately 24 individuals with mental illness for every 100 incarcerated individuals.\footnote{448}

**Substance Abuse and Mental Health Services Administration**

The Substance Abuse and Mental Health Services Administration (SAMHSA) is a part of the U.S. Department of Health and Human Services that deals with “reducing the impact of substance abuse and mental illness on America’s communities.”\footnote{449} SAMHSA defines any mental illness among adults over 18 as:

\footnote{450}“....currently or at any time in the past year having had a diagnosable mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) of sufficient duration to meet diagnostic criteria specified within the DSM-IV.”

SAMSHA conducts an annual survey, called the National Survey on Drug Use and Health (NSDUH), which provides sub-state estimates of a variety of mental health and substance abuse topics. However, SAMHSA does not evaluate individual counties but instead divides the state into regions. Region 3 includes Benton, Linn, Lincoln, Clatsop, Columbia, Polk, Tillamook, Lane, Marion, and Yamhill counties. Therefore the statistics from SAMHSA should be interpreted in the correct context.

**Suicide**

There are more deaths in Oregon due to suicide than due to car crashes. Benton County recorded 14 suicides per 100,000 residents in 2013. The statewide rate in 2013 was 18 per 100,000 persons.\footnote{451} Suicide is a death resulting from an intentional injury against oneself with an intent to die.\footnote{452} As a public health concern, it relates to both injury and violence and mental health. However, while many unintentional injuries can be prevented by making one’s environment safer, suicide can also be effectively prevented by providing treatment to those with mental health disorders. Therefore, suicide is discussed in the context of mental health. Suicide is an important public health problem in Oregon. It is also the leading cause of injury-related death in the state and is the 9th leading cause of death for Oregonians.

**Depression, Suicide, and Suicidal Ideation**

Depression is the most common type of mental illness and it is estimated to affect more than 26 percent of the U.S. adult population.\footnote{453} Depression is characterized by a depressed or sad mood, diminished interest in activities which used to be pleasurable, weight loss or gain, fatigue, psychomotor agitation or retardation, inappropriate guilt, difficulties concentrating, and recurrent thoughts of death.\footnote{454} Depression has many degrees of severity, including
dysthymia (a chronic, persistent mild depression)\textsuperscript{455} to major depressive disorder (clinical depression).\textsuperscript{456} Depression is also the most common underlying cause of suicide, and many individuals who die by suicide have a diagnosable mental or substance abuse disorder, and most have more than one disorder.\textsuperscript{457}

In Oregon, suicide rates are higher than the national average and about 70 percent of people who died by suicide from 2003 to 2012 also had depression. Among all age groups, the suicide rate in 2011-2015 was 13 per 100,000 people in Benton County.\textsuperscript{458}

Factors associated with an increased risk of suicide include:

- having a family history of suicide;
- having a family history of child maltreatment;
- having previously attempted suicide;
- having a history of mental disorders, particularly clinical depression;
- having a history of alcohol and substance abuse;
- living in an area where there is a local epidemic of suicide;
- isolation or feeling cut off from other people;
- encountering barriers to accessing mental health treatment;
- encountering loss (relational, social, work, or financial);
- having a physical illness;
- having easy access to lethal methods; and
- an unwillingness to seek help due to the stigma attached to mental health and substance abuse disorders or to suicidal thoughts.\textsuperscript{459}

While protective factors against suicide have not been studied as extensively as risk factors, they are equally important. Factors that have been found to buffer individuals from suicidal thoughts or behavior include:

- Effective clinical care for mental, physical, and substance abuse disorders;
- Easy access to a variety of clinical interventions and support for help seeking;
- Family and community support (connectedness);
- Support from ongoing medical and mental health care relationships; and
- Skills in problem solving, conflict resolution, and nonviolent ways of handling disputes.\textsuperscript{460}

Table 7.1 highlights the percentage of 8\textsuperscript{th} and 11\textsuperscript{th} grade students in the region that exhibited signs of depression, thought about suicide, or attempted suicide during 2015. The rate of attempted suicide is higher among 8\textsuperscript{th} graders in the region than among 11\textsuperscript{th} graders in the region.\textsuperscript{461}
Table 7.1: Percent of 8th and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months, Linn, Benton, and Lincoln counties, and Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major depressive episode</strong></td>
<td>8th grade</td>
<td>26 %</td>
<td>29 %</td>
<td>27 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>28 %</td>
<td>29 %</td>
<td>29 %</td>
</tr>
<tr>
<td><strong>Suicidal ideation</strong></td>
<td>8th grade</td>
<td>18 %</td>
<td>18 %</td>
<td>16 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>14 %</td>
<td>14 %</td>
<td>16 %</td>
</tr>
<tr>
<td><strong>Suicide attempt</strong></td>
<td>8th grade</td>
<td>7 %</td>
<td>9 %</td>
<td>8 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>5 %</td>
<td>5 %</td>
<td>6 %</td>
</tr>
</tbody>
</table>

Table notes: Major depressive episode was asked as: feeling so sad or hopeless for two weeks that the youth stopped doing most normal activities.

Source: Oregon Healthy Teens Survey, 2015

SAMHSA estimated suicidal ideation among adults (Figure 7.1). Young adults ages 18-25 consider or think about suicide at more than twice the rate as adults 26 and higher, and this is consistent in both Region 3 and at the state level.

**Figure 7.1: Young adults (ages 18-25) and adults (26+) that experienced serious thoughts of suicide in the past year in Region 3 and Oregon, 2012-2014**

Source: Substance Abuse and Mental Health Services Administration, 2014

Overall, the suicide rate among Benton County adult males is 2.6 times the rate among adult females. The total suicide rate increases with age, but this is due primarily to the outsize effect of male suicide rates, which increase with age. Among males of all age groups in the region from 2011 to 2015, males over the age of 65 had the highest suicide rate, at 38.6 deaths per 100,000 men (Figure 7.2). Females had a much lower rate of suicide, averaging 9.3...
deaths per 100,000 women, and this rate does not increase with age. The suicide rate among women peaks at 13.7 deaths per 100,000 women between the ages of 45 and 64.⁴⁶⁴

Due to the small numbers of suicides in a given year, the age-specific data presented here is aggregated across the LBL Region for confidentiality and more accurate estimates.

**Figure 7.2: Suicide rates per 100,000 men, per 100,000 women, and per 100,000 individuals, with regional age adjusted averages, 2011-2015**

![Suicide rates chart](image)

**Source:** Oregon Health Authority, Oregon Public Health Assessment Tool

**Race/Ethnicity**

Due to small populations of racial and ethnic groups, suicide events among non-white individuals are rare in the region, therefore race/ethnicity data cannot be reported at the regional level for confidentiality and reliability reasons. However, state suicide rates in the following figure may be used to understand trends in suicide deaths by race and ethnicity among all age groups (Figure 7.3).
Suicide among Veterans

Veterans are twice as likely as nonveterans to die by suicide. Approximately 23 percent of suicides that occurred in Oregon between 2008 and 2013 were among veterans, but less than 9 percent of Oregonians were veterans during that time. Ninety-seven percent of veteran suicides were male. Overall, male veterans had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male non-veterans). However, the ratio between female veterans and female non-veterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female non-veterans). Between 2008 and 2012, 9 veterans in Benton County died by suicide.

Suicide among older adults

Regional suicide rates are also higher among older adults, with 23 suicides per 100,000 adults age 65 and older between 2011 and 2015. This rate is 39 percent higher than the age adjusted rate for all regional residents. This increased rate conceals the difference between older men and women, however. The suicide rate among older men was 56 percent higher than among all men. The suicide rate among older women was 12 percent higher than among all women, and was lower than the suicide rate among women age 45-64. See Figure 7.2 for a visual representation of these data.
Mental Health

Perinatal Depression

In Oregon, nearly 1 in 5 mothers report symptoms of depression during and/or after pregnancy. This rate has been relatively constant since 2009. Maternal depression, or perinatal depression, is a depressive disorder characterized by feelings of sadness or hopelessness, reduced interest or pleasure in activities, changes in weight/appetite, sleeping disruption or too much sleep, restlessness or irritability, or diminished ability to think or concentrate during pregnancy and/or soon after giving birth. Mothers with maternal depression are less likely to engage in healthy parenting behaviors. As a result, mother-infant bonding and attachment can be compromised. In extreme cases, mothers with maternal depression have harmed themselves or their babies.

Regional and county-level data depicting maternal depression is currently limited; however, state level data can provide some insight into the experiences of mothers in the region.

The most recent detailed data on maternal depression and disparities among women in Oregon is from 2004 to 2008:

- Low income women are twice as likely to report depressive symptoms as high income women (36 percent versus 177 percent).
- Current smokers are more likely to report depressive symptoms than non-smokers (34 percent versus 22 percent).
- Women who experienced partner stress are twice as likely to report depressive symptoms (42 percent versus 16 percent).
- Racial/ethnic minority mothers are more likely to report depressive symptoms than white mothers (Hispanic 31 percent versus white 21 percent).
- Teen mothers are more likely to report depressive symptoms than older mothers (36 percent of mothers less than 20 year olds versus 17 percent of mothers 35 years and older).

Mental Illness

The Substance Abuse and Mental Health Services Administration (SAMHSA) and their definition of mental illness was discussed earlier in this chapter. Again, their regional data also includes additional counties in addition to the Linn, Benton, and Lincoln county region mentioned throughout this report. It is important to consider this when making interpretations or conclusions about Region 3 data.

A major depressive episode (MDE) is defined by SAMHSA as experiencing a depressed mood or loss of interest or pleasure in daily activities and a majority of specified depression symptoms lasting over 2 weeks within the last year. A serious mental illness among adults aged 18 and over meets the same criteria as any mental illness provided that the symptoms resulted in serious functional impairment.
In all categories measured (Any Mental Illness, Serious Mental Illness, Major Depressive Episodes, Suicidal Ideation) there is little difference between state and Region 3 numbers, but there are differences between age groups.

As seen in Figure 7.4, one quarter of individuals surveyed age 18-25 in Oregon and Region 3 report experiencing any mental illness within the last year. Nearly one in five people in Oregon and one in four people in Region 3 age 26 and older reported the same.

**Figure 7.4: Adults with any mental illness in the past year in Oregon and Region 3, 2012-2014**

![Bar chart](image)

*Source: Substance Abuse and Mental Health Services Administration, 2014*

Populations of adults ages 18-25 and 26 and older experience relatively the same rate of severe mental illness in Oregon and Region 3 (Figure 7.5). This is consistent with the National Alliance on Mental Illness’s findings that 1 in 25 adults experience severe mental illness.⁴⁷¹

[Figure 7.5 is displayed on the following page]
A correlation appears in the data that suggests the probability of experiencing a major depressive episode decreases with age (Figure 7.6). Children ages 12-17 have the highest rate of major depressive episodes with 15% in Oregon and 14% in Region 3. Twelve percent of adults 18-25 and 8% of adults 26 and older reported experiencing major depressive episodes; a marginally lower rate than adolescents.

Less serious mental health conditions also have an impact on wellbeing. The Oregon Health Authority produces annual county behavioral health profiles for Oregon Health Plan members. The most recent...
publically available profile was produced in 2015. These data provide information about the population receiving the Oregon Health Plan (OHP) and that population’s mental health and demographics.

The following data represents only identified mental health conditions. These data indicate access to mental health services or treatment, so actual prevalence is likely underestimated. As seen in Figure 7.7, a little over 1 in 3 OHP members aged 12-17 have received some type of service(s) for a mental health condition. These results are consistent from Linn County to the state level. Children under age 12 are also consistently lower, with a 5 to 6 percent difference from their older counterparts.

Figure 7.7: OHP members age 0-17 with a mental health condition in Oregon, Benton, Lincoln, and Linn counties, 2015

![Figure 7.7: OHP members age 0-17 with a mental health condition in Oregon, Benton, Lincoln, and Linn counties, 2015]

Source: Oregon Health Authority Behavioral Health Profiles, 2015

In OHP adults aged 18 and older, mild or moderate mental health disorders are more prevalent in the population than severe mental health disorders (Table 7.2). Though the prevalence remains the same in both age groups for mild or moderate disorders, the prevalence of severe disorders increases in the 26 and older population. This may be explained by the later onset of certain serious disorders including schizophrenia.

Table 7.2: Percent of OHP members, age 18-25 and age 26+, with a mild, moderate, or severe mental health disorder in Benton County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Severity of mental health disorder</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>Mild or moderate</td>
<td>23 %</td>
<td>24 %</td>
<td>27 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>8 %</td>
<td>9 %</td>
<td>8 %</td>
</tr>
<tr>
<td>26+</td>
<td>Mild or moderate</td>
<td>24 %</td>
<td>27 %</td>
<td>28 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>17 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority Behavioral Health Profiles, 2015
Bullying among youth

Childhood and adolescence are formative times in a person’s life. The number and severity of adverse experiences during childhood affects an individuals’ risk for alcoholism, depression, heart disease, liver disease, intimate partner violence, sexually transmitted infections, smoking, and suicide. Adverse events include emotional, physical, and sexual abuse and neglect, and various types of household dysfunctions such as violence against mothers, substance abuse, mental illness, parental separation or divorce, or an incarcerated household member.\textsuperscript{472,473}

Gender Identity and Sexual Orientation

Most state and national surveys do not ask questions related to sexual orientation or gender identity, so it is difficult to estimate the health needs of lesbian, gay, bisexual, transgender, or queer children, youth, and adults in the region and Oregon.

Available data include survey responses on harassment among adolescents in our public schools. Across the county during the 2014-2015 school year, 8\textsuperscript{th} graders reported having been harassed by a peer who thought they were gay, lesbian, bisexual, or transgender more frequently than 11\textsuperscript{th} graders (Figure 7.10). Overall, harassment based on perceptions about sexual orientation declines with age.\textsuperscript{474,475,476}

Figure 7.8: Percent of students who were harassed in the last 30 days by peers who derisively called them gay, lesbian, bisexual, or transgender in Benton County, the LBL Region, and Oregon 2015

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure7_8.png}
\caption{Percent of students who were harassed in the last 30 days by peers who derisively called them gay, lesbian, bisexual, or transgender in Benton County, the LBL Region, and Oregon 2015}
\end{figure}

Source: Oregon Healthy Teens Survey, 2015

Bullying and Peer Abuse

Violence in schools can affect the learning environment and contribute to absenteeism. Students who are bullied, harassed, and feel unsafe or otherwise victimized, are more likely to
miss classes, skip school, feel depressed, or exhibit problem behaviors. Research shows that comprehensive discipline, positive behavioral support, and anti-bullying programs in schools can reduce the incidence of harassment among primary and secondary school students.477

Figure 7.9 shows the percent of students in 2015 that did not go to school at least once in the past 30 days due to feeling unsafe at school or on their way to school. Both 8th and 11th graders in Benton County reported missing fewer days of school than their peers statewide.478

Figure 7.9: Percent of students, 8th and 11th grade, that did not go to school one or more times in the past 30 days due to feeling unsafe at school or on their way to or from school in Linn, Benton, and Lincoln counties and Oregon, 2015

Figure 7.10 shows that reasons for harassment at school differ among age groups at the regional level, and that the overall incidence of harassment among regional students is common. While the percent of students who report having been harassed at school in the past month tends to decrease with age, reasons for and severity of harassment vary among age groups. Aside from all or other reasons, harassment for physical characteristics is the most reported reason for harassment across all age groups.479
Figure 7.10: Percent of students in 8th and 11th grade, who experienced bullying in the past 30 days by reason in Benton County, 2015

Source: Oregon Healthy Teens Survey, 2015

Sexual violence against youth

The Oregon Healthy Teens Survey also asks 11th graders if they experienced pressure to have sex in the past year. Eleven percent of Benton County 11th graders reported having been pressured to have sex, which was lower than the regional proportion of 14 percent, but equal to the proportion statewide.

Figure 7.11: 11th graders pressured to have sex in Benton County, the LBL Region, and Oregon, 2015

Source: Oregon Health Teens Survey, 2015
Hate crimes

Accurate data on hate crimes is difficult to obtain for a variety of reasons. First, at least half of hate crimes go unreported. Second, there is an evidentiary standard that must be met for a crime to be considered motivated by hate. Third, only offenses for which an arrest is made are included in crime data. The most accurate data on hate crimes in Benton County would come from personal stories and accounts, but this data is not currently collected.

The Federal Bureau of Investigation collects statistics on crimes that manifest evidence of prejudice based on race, ethnicity, ancestry, religion, sexual orientation, gender, gender identity, or disability. This data comes from the Uniform Crime Reporting (UCR) program. The FBI cautions that “data users should not rank locales because there are many factors that cause the nature and type of crime to vary from place to place...Rankings ignore the uniqueness of each locale.” Furthermore, this data represents arrests, not criminal complaints or convictions.

In 2015, law enforcement jurisdictions designated 66 crimes in Oregon as hate crimes. Crimes with a hate crime designation represented 0.05 percent of all crimes reported in Oregon (i.e. one out of every 2,000 crimes were motivated by hate). However, not all the jurisdictions that reported overall crime data also reported hate crime data, including the Portland Police Department. In terms of population, this is 3.9 recorded hate crimes for every 100,000 people under the jurisdiction of reporting agencies.

Five hate crimes in Benton County were reported by the UCR program in 2015. There were 22 violent crimes and 187 property crimes reported in Benton County during the same time period. Therefore, 2.4 percent of crimes reported in Benton County were recorded as including a hate motivation. In terms of population, this is 5.6 recorded hate crimes per every 100,000 people in Benton County. Between 2011 and 2015, there have been thirteen hate crimes in Benton County reported to the Uniform Crime Reporting program. These included bias against race, ethnicity, religion, sexual orientation, or disability.

The difference in hate crime rates between Benton County and Oregon could be due to many factors, including, but not limited to, more reporting of hate crimes, more investigations of hate crime allegations, or more hate crimes in Benton County.

The Bureau of Justice Statistics is another source of hate crime data. It conducts an annual, national survey to determine how many people are victims of hate crimes, whether they report to the police or not. Nationally, in 2015, there were an estimated 70 hate crimes for every 100,000 people over the age of 11. This is compared to 1.9 hate crimes per 100,000 people that were reported by law enforcement jurisdictions in the UCR program.
Forty-six percent of the hate crimes listed in the survey were reported to the police. This represents 32 reported hate crimes per 100,000 people, over 16 times higher than the rate of hate crimes reported by law enforcement jurisdictions. One reason for this difference is that hate crimes are not included in UCR data unless the offender is arrested. 70 percent of hate crime reports were not signed, meaning the police would not make an arrest. Police made arrests in eleven percent of reported hate crimes. There are other differences in between the Bureau of Justice Statistics survey and the Uniform Crime Reporting program data that make direct comparisons difficult, including the definitions each program relies on to classify a crime as a hate crime. What is clear is that tabulating hate crime data by the number of arrests significantly underestimates actual hate crime occurrence.

Alcohol, Tobacco, and Drug Abuse

Alcohol and prescription medications are consumed appropriately and responsibly by most of the population. However, problems frequently occur when these substances are over-consumed, used inappropriately, combined with other substances, or consumed while engaging in risky activities such as driving or unsafe sexual activity. The costs to society of the misuse of alcohol, prescription medications, and other drugs include injury and death due to overdose; effects on unborn children of drug users; impacts on family, crime and homelessness; spread of infectious disease, through sexual transmission and needle sharing; and financial costs associated with lost productivity, healthcare, and legal expenses for individuals and the wider community.

Research has shown that people are most likely to try drugs for the first time—including tobacco, alcohol, and illegal and prescription drugs—during adolescence and young adulthood. Misuse of substances at an early age (particularly before age 18) is shown to be an important predictor of substance use disorders later in life, making this period an important focus for prevention efforts.

Some of the primary factors related to whether an adolescent tries drugs include the availability of drugs in the home, neighborhood, and community, as well as the home environment. Adolescents who experience violence, emotional or physical abuse, mental illness, or drug use in the home are at increased risk of using drugs. In addition, certain genetic factors and mental health conditions (including depression, anxiety, and poor impulse control) increase the likelihood that an adolescent will use drugs. Table 7.3 depicts adolescent alcohol and drug use in the region.

Alcohol Use

The younger a person begins drinking regularly, the greater the chance that person will develop a clinically defined alcohol disorder. Youth who start drinking before age 15, compared to those who start at age 21, are far more likely to be injured while under the influence of alcohol, to be in a motor vehicle crash after drinking, or to become involved in a physical fight after
drinking. Overall, alcohol use among Benton County youth tends to increase with age, reflecting the state trend displayed in Table 7.3.

**Binge Drinking**

Binge drinking, in which a person consumes a significant amount of alcohol in a short period of time, is associated with the same serious health problems as other forms of alcohol abuse. Middle and high school youth in the region and Oregon report binge drinking at similar rates. Approximately 3 percent of Benton County 8th graders reported binge drinking in 2015 (Table 7.3). This rate increases 15 percent among 11th graders. The region likely meets the Healthy People 2020 objective of reducing the percent of high school seniors (12th graders) who binge drink to below 23 percent, but it is not possible to directly compare the rates between 11th graders and 12th graders.

**Table 7.3: Percent of youth who reported consuming alcohol in the past 30 days in Benton County, the LBL Region, and Oregon, 2015**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumed at least one alcoholic beverages</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>7 %</td>
<td>12 %</td>
<td>12 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>13 %</td>
<td>29 %</td>
<td>30 %</td>
</tr>
<tr>
<td><strong>Consumed at least 5 alcoholic beverages on one occasion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>3 %</td>
<td>6 %</td>
<td>5 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>15 %</td>
<td>16 %</td>
<td>17 %</td>
</tr>
</tbody>
</table>

*Source: Oregon Healthy Teens Survey, 2015*

**Alcohol accessibility**

Thirty-six percent of Benton County 8th graders said it would be “very easy” or “sort of easy” to obtain alcohol. This proportion doubles to 72 percent of 11th graders, and is similar to the rest of the LBL region and to Oregon.

**Alcohol abuse among adults**

Excessive drinking is a risk factor for many adverse health outcomes, such as hypertension, alcohol poisoning, unintended pregnancy, fetal alcohol syndrome, inter-personal violence, and motor vehicle crashes. It can also contribute to a number of health issues including heart disease and stroke, high blood pressure, cirrhosis, coma, and even death. The following data includes adults ages 18 and older.
Excessive drinking is defined differently for men and women, due to different metabolic rates and average body weights. Among men, excessive drinking is defined as two or more alcoholic drinks per day for a period of 30 days. In Benton County about 7 percent of men reported excessive drinking. For women, excessive drinking is defined as one or more alcoholic drinks per day for a period of 30 days. 9 percent of women reported excessive drinking (Table 7.4).

### Binge Drinking Among Adults

For adults over the age of 18, binge drinking is defined as consuming five or more drinks at one time for men and four or more drinks at one time for women. Binge drinking is more common across the region and in the state than drinking every day. Nineteen percent of Benton County men and 15 percent of Benton County women reported binge drinking (Table 7.4).

### Table 7.4: Alcohol abuse among adults who drink, 18 years and older in Benton County and Oregon, 2012-2015

<table>
<thead>
<tr>
<th>Sex</th>
<th>Benton County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumed at least two alcoholic beverages per day for the past 30 days Male</td>
<td>6 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Consumed at least one alcoholic beverage per day for the past 30 days Female</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Consumed at least 5 alcoholic beverages on one occasion in the past 30 days Male</td>
<td>16 %</td>
<td>22 %</td>
</tr>
<tr>
<td>Consumed at least 4 alcoholic beverages on one occasion in the past 30 days Female</td>
<td>18 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS 2012-2015

State data indicates that older adults are much less likely to engage in excessive or binge drinking. Table 7.5 compares rates among elderly adults to adults age 45 to 64.
Table 7.5: Excessive drinking and binge drinking among older adults who drink in Oregon, 2015

<table>
<thead>
<tr>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive drinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>7 %</td>
<td>6 %</td>
<td>6 %</td>
</tr>
<tr>
<td>Women</td>
<td>7 %</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Binge drinking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>21 %</td>
<td>13 %</td>
<td>8 %</td>
</tr>
<tr>
<td>Women</td>
<td>13 %</td>
<td>8 %</td>
<td>3 %</td>
</tr>
</tbody>
</table>

Table notes: Excessive drinking is defined as more than two drinks (men) or one drink (women) per day for the past 30 days. Binge drinking is defined as more than five drinks (men) or four drinks (women) on one occasion within the past 30 days. Denominators are all survey respondents who reported having at least one drink in the past 30 days.

Source: Oregon Health Authority, Oregon BRFSS, 2015

Binge Drinking among Oregon Health Plan Members

About 10 percent of IHN-CCO members reported binge drinking in the previous 30 days. This is slightly lower than the proportion of all adult Oregon Medicaid members (12 percent). Binge drinking varied among different population groups, from 4.5 percent among Asians OHP members to 16 percent among American Indian and Alaska Native OHP members.503

Tobacco Use

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Tobacco use in any form can cause serious diseases and health problems, including cancers of the lung, bladder, kidney, pancreas, mouth, and throat; heart disease and stroke; lung diseases (i.e., emphysema, bronchitis, and chronic obstructive pulmonary disease); pregnancy complications; gum disease; and vision problems.504

Smoking patterns are predictive of increased rates of future disease and early death. Smokers die, on average, 10 years earlier than nonsmokers.505 Health impacts are more severe among those with lower socio-economic status as well. In the United States, low-income smokers are more likely to become ill and die sooner from tobacco-related diseases than smokers who have a higher income.506

Tobacco Use among Adolescents

Tobacco products are designed to deliver nicotine, an addictive drug that causes tobacco users to crave repeated doses. Youth are especially sensitive to nicotine and can become dependent more quickly than adults. Because of their dependency, nearly three out of four teen smokers continue using tobacco products into adulthood.507 Tobacco use has been decreasing over time among Benton County youth, with a nearly 50 percent decrease among 11th graders from 2008 to 2015.508,509
Due to the growing popularity of electronic cigarettes, in 2015 the Oregon Healthy Teens Survey asked students about electronic cigarette use. Among both 8th and 11th graders, and in all three counties, electronic cigarette use was significantly higher than smoking cigarettes (Table 7.6). One percent of Benton County 8th graders reported smoking cigarettes, but 5 percent reported using e-cigarettes. That difference is consistent with 11th graders, as they were also much more likely to use e-cigarettes than smoke (12 percent e-cigarette use versus 7 percent smoking).

Table 7.6: Percent of youth who reported consuming alcohol, tobacco, or drugs in the past 30 days in Benton County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked cigarettes</td>
<td>8th grade</td>
<td>0.8 %</td>
<td>5 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>7.2 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Used e-cigarettes</td>
<td>8th grade</td>
<td>5 %</td>
<td>10 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>12 %</td>
<td>16 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey, 2015

Cigarette smoking among youth in Benton County has historically had lower rates than other counties in Oregon. Nevertheless, cigarette smoking has decreased even further over the past 7 years.

Figure 7.12: Percent of students that smoked cigarettes in the past 30 days, Benton County, 2008 and 2015

Source: Oregon Healthy Teens Survey, 2008 and 2015
Tobacco Use among Adults

Overall, the smoking rate among adults has been slowly decreasing in the region. Benton County has consistently maintained a smoking rate lower than that of the state. Eleven percent of Benton County adults report smoking cigarettes, compared to 18 percent of all Oregonians. The current Healthy People 2020 objective is to reduce the percent of adults who currently smoke to 12 percent or below.

Alternative forms of tobacco use, especially e-cigarettes, are becoming more popular. An additional 8 percent of Oregonians report using tobacco in a form other than smoking cigarettes on a regular basis.

Statewide, far fewer older adults are current smokers than are adults between the ages of 45 and 64. Furthermore, there is a greater proportion of former smokers among the elderly than among younger adults. The data suggest that older adults are both more likely to quit and are more likely to have smoked when they were younger than adults age 45 to 64. Table 7.7 displays these data.

Table 7.7: Current and former smoking status in Oregon, 2015

<table>
<thead>
<tr>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current smoker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>20 %</td>
<td>21 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Women</td>
<td>18 %</td>
<td>17 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Former smoker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>23 %</td>
<td>36 %</td>
<td>53 %</td>
</tr>
<tr>
<td>Women</td>
<td>20 %</td>
<td>32 %</td>
<td>35 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon BRFSS, 2015

Tobacco’s toll on the health and economy of Benton County each year is significant. For example, in 2014:

- 9,900 adults regularly smoked cigarettes,
- 1,857 people suffered from a serious illness caused by tobacco use,
- 95 people died from tobacco use,
- $18.9 million were spent on medical care for tobacco-related illnesses, and
- $15.2 million in productivity were lost due to tobacco-related deaths.

Secondhand Smoke Exposure

Secondhand smoke is a mixture of the smoke exhaled by a person smoking, and the smoke from burning tobacco in a cigarette, pipe, or cigar. Secondhand smoke contains the same toxic chemicals and carcinogens as inhaled tobacco smoke, and even brief exposure has been found to put a nonsmoker’s health at risk. In adults, secondhand smoke exposure has been found to cause lung cancer and heart disease. Children exposed to secondhand smoke are more at risk...
for ear infections, asthma attacks, respiratory symptoms and infections, and at greater risk for sudden infant death syndrome (SIDS).\textsuperscript{514}

According to the Oregon Healthy Teens survey, approximately 20 percent of Benton County 8th and 11th graders live with someone who smokes. This rate is lower than the state proportion of 30 percent.\textsuperscript{515} Measures to reduce the amount of secondhand smoke exposure to others include, but are not limited to, quitting smoking, forbidding smoking in the home, and forbidding smoking in a shared car. Measures to reduce the amount of secondhand smoke exposure to others include, but are not limited to, quitting smoking, forbidding smoking in the home, and forbidding smoking in a shared car. 83 percent of Benton County residents have rules against smoking in the home.\textsuperscript{516}

**Tobacco Use among Oregon Health Plan Members**

There is a tremendous difference in tobacco use between Medicaid members and the general population among adults in Oregon. Approximately 31 percent of OHP adult participants either smoke or chew tobacco, compared to 18 percent of all Oregon adults. Only 10 percent of Hispanic members use tobacco, but 41 percent of American Indians and Alaska Natives do, although the data do not distinguish between ceremonial and recreational use. IHN-CCO members have higher tobacco use rates than state, with 35 percent of members using tobacco.\textsuperscript{517}

**Marijuana, Prescription Drug, and Illicit Drug Use**

Recreational marijuana is still illegal for all individuals under 21 years of age. The effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. Another major public health concern is the abuse of prescription drugs. When these drugs are misused or taken without a doctor’s prescription they can be just as harmful as illegal street drugs. This section focuses on adolescents who choose to abuse prescription drugs as opposed to accidental poisonings. Discussed in this section, illicit drugs include cocaine, methamphetamine, and heroin.

Among youths in the region, marijuana use was generally more than twice as prevalent as cigarette smoking as shown in Table 7.8. Benton County rates were lower than the rest of the region and the state among 8\textsuperscript{th} graders, but marijuana use increased across geographies from 8\textsuperscript{th} grade to 11\textsuperscript{th} grade. In the region, one out of every five 11\textsuperscript{th} graders surveyed reported using marijuana in the past 30 days. Adolescents in the region abuse prescription drugs at rates higher than the state, particularly among 11\textsuperscript{th} graders in Benton County and youth in Lincoln County.\textsuperscript{518} There are no reliable data on other illicit drug use among adolescents in the region.
Table 7.8: Percent of youth who reported consuming alcohol, tobacco, or drugs in the past 30 days in Benton County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used marijuana</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>4 %</td>
<td>11 %</td>
<td>9 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>21 %</td>
<td>21 %</td>
<td>19 %</td>
</tr>
<tr>
<td>Used prescription drugs without a doctor's orders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>3 %</td>
<td>5 %</td>
<td>4 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>10 %</td>
<td>8 %</td>
<td>7 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey, 2015

Marijuana use among adults

While marijuana use is now legal for individuals 21 years and older, the effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. Another major public health concern is the abuse of prescription drugs. When these drugs are misused or taken without a doctor’s prescription they can be just as harmful as illegal street drugs. In this section, illicit drugs include cocaine, methamphetamine, and heroin.

County data is not available for marijuana use among adults. However, state data demonstrates some patterns that may hold for local populations. Statewide, two third of BRFSS survey respondents under the age of 65 who reported every using marijuana said that they were 17 or younger the first time they tried it. The 65 and older age group is an outlier, which is probably because marijuana was not culturally widespread in the United States until the late 1960s. A 65 year old in 2014 was 20 in 1969, older than the average age of first use.

Additional data from Oregon BRFSS in 2014 is displayed on the next page.

Table 7.9: Proportion of respondents in Oregon who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>49 %</td>
<td>54 %</td>
<td>67 %</td>
<td>27 %</td>
</tr>
<tr>
<td>Women</td>
<td>48 %</td>
<td>50 %</td>
<td>55 %</td>
<td>18 %</td>
</tr>
<tr>
<td>Both</td>
<td>49 %</td>
<td>52 %</td>
<td>62 %</td>
<td>22 %</td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS 2014

Table 7.10. Proportion of respondents reporting marijuana use in the past 30 days in Oregon among those who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>52 %</td>
<td>35 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Women</td>
<td>23 %</td>
<td>19 %</td>
<td>15 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Both</td>
<td>48 %</td>
<td>23 %</td>
<td>16 %</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: These percentages only reflect usage among people who have ever used marijuana. Source: Oregon BRFSS 2014
Taken together, these two tables indicate that young adults (age 18-24) are actually less likely to have ever used marijuana than older generations (ages 45-64). However, young adults are much more likely than older adults to be active users of marijuana, suggesting that historically many adults have stopped using marijuana as they aged. There is no data available yet to indicate whether this pattern will hold after marijuana legalization, or if current young adult marijuana users will continue to use marijuana as they age.

Marijuana Use among Oregon Health Plan Members

About 18 percent of adult Oregon Medicaid members surveyed reported using marijuana in the previous 30 days, compared to 23 percent of all Oregon adults. There is a wide range of rates between different races and ethnicities, with Asian Medicaid members having the lowest rate (3 percent) and both African American and American Indian / Alaska Native members having the highest rate (23 percent). The proportion of IHN-CCO members who use marijuana is the same as the state’s (18 percent).

Prescription drugs, opioids, and illicit drugs

Another particular area for concern is the misuse of prescription drugs. Misuse of these drugs is highest among young adults (aged 18 to 25). As the most commonly abused type of prescription drugs, painkillers provide a useful marker for prescription drug misuse trends. While data shows little change in the self-reported pain experienced by Americans, the amount of painkillers dispensed in the U.S. has quadrupled since 1999, as have the deaths resulting from prescription painkillers. While this epidemic represents an enormous burden to society, 2012 saw a national drop in both prescribing rates and prescription overdose deaths. This is the first decrease since the 1990s, offering promise for further progress in reversing the epidemic. Oregon (along with the majority of states) has implemented a system to track and improve prescribing practices around certain types of controlled substances, including painkillers. The Oregon Prescription Drug Dashboard uses information provided by Oregon-licensed retail pharmacies to help track prescription drug use, hospitalizations, and deaths.

Opioids are a common drug class, representing half of the prescriptions tracked by the Oregon Health Authority. In the 4th quarter of 2016, there were 224 opioid prescriptions per 1,000 Oregon residents, out of 395 total prescriptions per 1,000 residents. As a comparison, Benton County had 141 opioid prescriptions per 1,000 residents and 292 total prescriptions per 1,000 residents during the same time period. Table 7.11 displays these data in more detail.
Table 7.11  Annual prescription rates per 1,000 residents by drug class in Benton County, the LBL Region, and Oregon, 2016.

<table>
<thead>
<tr>
<th></th>
<th>Benton County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total prescriptions</td>
<td>292</td>
<td>430</td>
<td>395</td>
</tr>
<tr>
<td>All opioids</td>
<td>141</td>
<td>244</td>
<td>224</td>
</tr>
<tr>
<td>Sedatives (including Benzodiazepine)</td>
<td>86</td>
<td>115</td>
<td>101</td>
</tr>
<tr>
<td>Stimulants and pseudoephedrine</td>
<td>62</td>
<td>64</td>
<td>63</td>
</tr>
<tr>
<td>Methadone and muscle relaxants</td>
<td>3</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Oregon Prescription Drug Dashboard, 2016

In Benton County, the LBL Region, and Oregon, high prescription rates are associated with higher rates of hospitalization and death due to drug overdose. Benton County had an annual rate of 17 hospitalizations per 100,000 residents due to drug overdose between 2012 and 2014 and a rate of 6.6 deaths per 100,000 residents due to drug overdose between 2013 and 2015. This equates to one hospitalization for every 1,400 prescriptions and one death for every 4,800 prescriptions. A comparison of hospitalizations and deaths in Benton County, the LBL Region, and Oregon is shown in figure 7.13, below.

Figure 7.13: Drug overdose hospitalizations and deaths in Benton County, the LBL region, and Oregon, 2011-2014.

![Graph showing hospitalizations and deaths in Benton County, LBL Region, and Oregon, 2011-2014.]

Figure notes: Data are 3-year averages of annual rates for both drug overdose hospitalizations (2012-2014) and deaths (2013-2015). Source: Oregon Prescription Drug Dashboard, 2016

In Benton County, approximately one quarter of the hospitalizations and two-thirds of deaths were due to opioids. Most of the others were due to other prescription drugs, with a very
limited number due to illegal, street drugs. Given that about half of prescriptions are for opioids, this is means that opioid hospitalization rates are smaller than hospitalization rates for other drugs, but death rates are higher for opioid overdoses.

**Age differences in drug overdose**

Drug use is more prevalent among young adults. National Survey on Drug Use and Health (NSDUH) data indicate that approximately ten percent of Oregonians age 18-25 have used prescription drugs for non-medical purposes within the last 30 days. This is about twice the rate of both children age 12-17 (5 percent) and adults 25 and older (4 percent).

According to the Oregon Prescription Drug Dashboard, drug overdoses are more common among older adults than children or young adults. In the LBL Region, the hospitalization rate was higher among adults age 45-64 than among young adults. This pattern is the same in Oregon; the rate of hospitalization in Oregon among adults age 45 to 64 is nearly twice the rate of adults age 18-44. Additionally, there is a high rate of hospitalizations among older adults in Oregon (age 65 and up). In contrast, there were few hospitalizations of adults over the age of 65 in the LBL region.

Deaths from drug overdose in the LBL Region are more likely in middle age adults (22 deaths per 100,000 people age 45-64) than in young or older adults. The death rate among middle age adults in the LBL Region is much lower than in Oregon (56 deaths per 100,000 middle age adults). The full data is given in table 7.12, below.

**Table 7.12: Hospitalization and death rates per 100,000 people due to drug overdose among adults in the LBL Region and Oregon, by age, 2011-2014**

<table>
<thead>
<tr>
<th>Age group</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospitalization rate per 100,000 people</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>0</td>
<td>15.1</td>
</tr>
<tr>
<td>18 – 44</td>
<td>13.2</td>
<td>33.6</td>
</tr>
<tr>
<td>45 – 64</td>
<td>22.0</td>
<td>56.4</td>
</tr>
<tr>
<td>65 – 74</td>
<td>5.0</td>
<td>53.5</td>
</tr>
<tr>
<td>75 and older</td>
<td>0</td>
<td>61.3</td>
</tr>
<tr>
<td><strong>Death rate per 100,000 people</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>18 – 44</td>
<td>13.5</td>
<td>13.5</td>
</tr>
<tr>
<td>45 – 64</td>
<td>21.1</td>
<td>16.4</td>
</tr>
<tr>
<td>65 – 74</td>
<td>6.4</td>
<td>4.4</td>
</tr>
<tr>
<td>75 and older</td>
<td>0</td>
<td>2.9</td>
</tr>
</tbody>
</table>

*Source: Oregon Prescription Drug Dashboard, 2016*
Illicit Drug Use and Prescription Drug Misuse among Oregon Health Plan Members

A very small percentage (1 percent) of adult OHP members report having used meth, heroin, cocaine, crack, or ecstasy in the previous 30 days, and there are no equivalent data for the state in general. Similarly low values across races and regions for Medicaid members make it difficult to conclude any significant differences.

Similarly, about 1.4 percent of adult OHP members report misusing prescription pain relievers in the previous 30 days. There is no data for the general state population. Hispanic members had the lowest percentage at 0.7 percent, while African Americans had the highest at 3 percent. The region served by IHN reports a rate of 1.8 percent for misusing prescription pain relievers.\textsuperscript{526}

Local Data

The following descriptions of local data collected by Benton County Health Department and partners are taken in part or in full from existing documents. Sources are cited at the bottom of each section.

Garfield and Linus Pauling Schools Neighborhood Assessment

In 2016, Benton County Health Department conducted a neighborhood assessment of the neighborhood surrounding Garfield Elementary and Linus Pauling Middle Schools. Approximately 30 percent of respondents were primary Spanish speakers. On the topic of behavioral health, respondents were asked the two questions “What causes stress” and “What reduces stress”.

Twenty eight percent of respondents said that employment instability and/or income insecurity caused stress. Twenty percent said that racism or discrimination causes stress. Other common responses were lack of health services, immigration status, education, lack of connection, and trauma.

Twenty six percent respondents said that family was the biggest reducer of stress. Another 26 percent said that exercise was the biggest reducer of stress. Other common responses were friendships and healthy and affordable food.\textsuperscript{527}

Mental Health Promotion and Prevention

In 2015, InterCommunity Health Network and Benton County partnered to assess readiness and capacity to address mental health promotion in Linn, Benton, and Lincoln counties. They
conducted a series of key informant interviews with 25 interviewees that represented a diverse cadre of perspectives.

Key informants identified a long list of contributing factors to mental health in the LBL Region.
- Lack of effective parenting skills
- Poverty
- Trauma
- Stress on family systems
- Lack of family support networks
- Lack of family structure
- Foster care
- Access to care

These, along with other responses, formed three overarching themes in the key informant interviews.

- A primary barrier for families voluntarily accessing, or following through with referrals to, mental health services is the stigma associated with mental health and mental illnesses or the lack of buy-in (acceptance) of the presence of a problem. This encompasses youth behavioral issues that are also avoided due to the stigma of poor parenting.
- The “service delivery system,” especially for the working poor and disenfranchised is extremely complex and fragmented; and, for the most part, requires a professional navigator, or mentor, to access.
- Additional barriers to families and youth accessing mental health services consist of a cluster of elements including proximity and lack of transportation; service hours; and chaotic life styles that inhibit follow-through with services identified for example.528

**Conclusion**

Mental health disorders and illnesses can be addressed and treated effectively, with prevention and early diagnosis and treatment the surest method to reduce the disease burden of mental health illnesses and any of their associated chronic physical illnesses. A number of social, environmental, and economic circumstances, such as those described in previous chapters, can influence an individual’s mental health as well as their physical health. These multifaceted inputs to poor mental health make it necessary to take a thoughtful, informed approach to address the root causes of mental illness.
Chapter 8
Health through an Equity Lens

This summary, taken from Healthy People 2020, is a good introduction to the concept of health equity:

Healthy People 2020 defines *health equity* as the “attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.”

Healthy People 2020 defines a *health disparity* as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.”

There are many challenges in describing the key health equity issues in Benton County and its communities. First and foremost, to describe inequities, we need data that both encompasses populations facing inequities and the health inputs or outcomes that embody those inequities. Populations and communities experiencing inequities tend to be small, marginalized, or underrepresented. In contrast, data collection efforts tend to focus on large, privileged, and well-represented groups. Therefore, health equity data frequently suffers from large margins of error, poor specificity, and sometimes the complete absence of information that truly reflects marginalized communities. These factors greatly restrict which health equities can be presented from a data perspective.

Another challenge to describing health inequities is the interconnected nature of health equity. As an example, experiencing homelessness is a major inequity. It arises from “historical and contemporary injustices”, lack of access to services, and marginalization. In addition, being homeless is a major cause of health inequities. People who experience homelessness have much worse health outcomes as a direct result of not having a home.

Different groups and communities often define health in different ways. This can make it challenging both to measure and to describe health inequities in different populations. As an example, if one community’s measure of health is to have a large household with many generations, while another community’s measure is the ability to live independently, the same question asked of people sixty-five and older (“Do you live alone?”) could provide evidence of a
healthy or an unhealthy community. Even more straightforward measures of health, such as
disparate cancer diagnosis rates, could represent either an inequity in outcomes or better
access to care. If cancer diagnosis rates in a community rise, it could be because cancer is an
inequitable burden on that community, or it could be because access to cancer screening has
improved.

The standard approach to health equity (listing distinct groups or topics), is also limited by the
intersectionality of individuals and communities. Lisa Bowleg of Drexel University describes
intersectionality as “… a theoretical framework that posits that multiple social categories (e.g.,
race, ethnicity, gender, sexual orientation, socioeconomic status) intersect at the micro level of
individual experience to reflect multiple interlocking systems of privilege and oppression at the
macro, social-structural level (e.g., racism, sexism, heterosexism)...[P]ublic health studies that
reflect intersectionality in their theoretical frameworks, designs, analyses, or interpretations
are rare.” Every topic presented in this chapter is a part of the health equity landscape of
Benton County and cannot be considered alone.

Regardless of the challenges of describing health equity in Benton County, it is a critical
measure of our community’s health. In this chapter, different populations are described that
have historically faced inequities in their health.

**Race and Ethnicity**

Eighty-two percent of Benton County residents are white, non-Hispanic, according to the U.S.
Census Bureau. It should be noted that residents without fixed addresses are frequently
excluded from Census Bureau surveys. These populations include migrant farmworkers and
people experiencing homelessness. The long history of Oregon and Benton County as
communities that excluded or discouraged non-white immigration has led to many historical
and contemporary injustices that contribute to inequities in health factors and outcomes.

**Poverty and Income**

Poverty rates in Benton County are much higher for non-white populations. The poverty rate
among white, non-Hispanic Benton County residents is approximately 19 percent. All other
races and ethnicities have higher rates of poverty, as is shown in Figure 8.1, below. It should be
noted that due to very small populations of American Indian or Alaska Native, Black or African
American, and Native Hawaiian or Pacific Islander groups, the error in those estimates are quite
large and the data should be interpreted with caution.
Figure 8.1. Poverty rates, stratified by race and ethnicity. Benton County, 2011-2015

Figure notes: Due to very small populations of American Indian or Alaska Native, Black or African American, and Native Hawaiian or Pacific Islander groups, the error in those estimates are quite large and the data should be interpreted with caution.

Source: U.S. Census Bureau American Community Survey. 2011-2015

Median incomes in Benton County tend to be lower for non-white populations, with the exception of the American Indian or Alaska Native population. The median income among white, non-Hispanic Benton County residents is approximately $54,000. American Indian and Alaska Native residents have an estimated median income of $59,000. Compared to the higher poverty rate among American Indian and Alaska Native residents, this indicates that income inequality may be much higher in this population than in Benton County as a whole. Asians, Hispanics and Latinos, other races, and people who report multiple races all have a much lower median income, between $20,000 and $36,000. Due to small representative populations, data for Black or African Americans and Native Hawaiian and Pacific Islander populations is unavailable.

[Figure 8.2 is displayed on the following page]
Figure 8.2. Median income, stratified by race and ethnicity. Benton County, 2015

Figure notes: Due to very small populations of American Indians or Alaska Natives, the error is large and the data should be interpreted with caution. Data for Black or African American and Native Hawaiian or Pacific Islander groups have been suppressed.

Source: U.S. Census Bureau American Community Survey, 2011-2015

Home Ownership

Home ownership is the most reliable way to build wealth in the United States. Furthermore, home ownership usually creates stability for families if they don’t have to worry about rents rising, evictions, or inability to maintain the health of their living space since they are renters, not owners.

Data on home ownership in Benton County is difficult to stratify by race due to small numbers of non-white households, but it is possible to draw a comparison between home ownership among white, non-Hispanic households and Hispanic households. Overall, about 57 percent of households in Benton County are occupied by owners, as opposed to renters. Among white, non-Hispanic households, that number rises to 62 percent. However, only 26 percent of Hispanic or Latino households own the home they live in.
Healthy Environments

Environments that contribute to health are not equally accessible to all people, and marginalized communities Benton County are disproportionately likely to live in neighborhoods or communities that with higher health risks.

Clear data on neighborhood-level environmental health risks is difficult to capture, as most environmental data is available at the county or city level. However, as an example of the increased exposure to unhealthy environments experience by non-white communities, the map below shows the location of tobacco retail outlets in Corvallis, overlaid onto the proportion of Black, Native American or Alaska Native, Native Hawaiian or Pacific Islander, or Hispanic residents. All but five of the 33 retail outlets are located in neighborhoods with a higher proportion of these historically marginalized groups than the overall proportion in Corvallis.
Map 8.1. Tobacco Retailer Outlets and historically underserved racial and ethnic communities in Corvallis, 2017

Map notes: 9 percent of all Corvallis residents identify as Black or African American, Native American or Alaska Native, Native Hawaiian or Pacific Islander, or Hispanic or Latino.

Early learning
A good education and opportunities to learn are key components of building a healthy life. Learning and development begins before school. The Oregon Department of Education produces a report each year on kindergarten readiness in Oregon counties and CCO regions. The Early Learning Hub of Linn, Benton, and Lincoln counties analyzed the data and identified disparities in readiness among non-white children. Children who identify as a minority were 24 percent more likely to score below average readiness in early literacy and 13 percent more likely to score below average readiness in early math. The largest non-white race or ethnicity represented among kindergartners in Benton County and the LBL region are Hispanic or Latino children. They had a 50 percent increased risk of scoring below average on early reading and a 26 percent increased risk for scoring below average on early math.\(^{531}\)

**High school completion rates**

Inequities persist throughout formal education. For high school students, the risk of dropping out or not completing high school is higher among non-white students. In Benton County, Native American or Alaska Native, Asian or Pacific Islander, Black or African American, and Hispanic or Latino students made up 25 percent of the high school student body in 2016 but comprised 37 percent of the students who dropped out. The drop-out rate among white students was 7.7 students dropping out per 1,000 students, while among the aforementioned groups, the drop-out rate was 13.3 per 1,000 students.\(^{532}\)

**Maternal health and teen pregnancy**

Access to health care during and following pregnancy is an area where significant health equity issues exist. In Benton County, 11 percent of white, non-Hispanic pregnant women had inadequate medical care or did not have any medical care during their pregnancies. In contrast, 19 percent of Hispanic or Latino pregnant women lacked adequate care, and 39 percent of Pacific Islander pregnant women lacked adequate care.

[Figure 8.4 is displayed on the following page]
A number of birth risk factors also display racial inequities. These data are presented in the table below.

### Table 8.1. Percent of births where the mother had a birth risk factor, by race and ethnicity. Benton County, 2008-2015

<table>
<thead>
<tr>
<th>Race or ethnicity</th>
<th>Maternal smoking</th>
<th>Gestational diabetes</th>
<th>Unhealthy weight gain during pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>21 %</td>
<td>8 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Asian</td>
<td>0 %</td>
<td>12 %</td>
<td>52 %</td>
</tr>
<tr>
<td>Black or African American</td>
<td>3 %</td>
<td>10 %</td>
<td>74 %</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3 %</td>
<td>13 %</td>
<td>70 %</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>17 %</td>
<td>6 %</td>
<td>90 %</td>
</tr>
<tr>
<td>Two or more races</td>
<td>12 %</td>
<td>11 %</td>
<td>71 %</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>9 %</td>
<td>7 %</td>
<td>67 %</td>
</tr>
</tbody>
</table>

Teen pregnancy is another area where racial and ethnic inequities exist. While the teen pregnancy rate among Hispanics and Latinas has decreased in Benton County, it still remains among the pregnancy rate for all teens. Between 2013 and 2015, the teen pregnancy rate
among Hispanic and Latina women was 13.1 births per 1,000 women, compared to 5.6 births per 1,000 teenage women in general.

Figure 8.5. Pregnancy rates among teenagers age 15-19, Benton County and the LBL Region, 2008 - 2015

![Figure showing pregnancy rates among teenagers in Benton County and the LBL Region from 2008 to 2015. The graph shows a decreasing trend in births per 1,000 women, with a noticeable drop in 2013-2015.]

Figure notes: pregnancy rates are aggregated across 3 years.

Hate crimes

In Benton County, between 2011 and 2015, there were eight hate crimes with a racial or ethnic bias reported by law enforcement jurisdictions, an annual rate of 1.9 racially or ethnically motivated hate crimes per 100,000 people per year, based on Uniform Crime Reporting data. Nationally, in 2015, there were 35 racially motivated hate crimes per 100,000 people, and Hispanics experienced 130 hate crimes per 100,000 people (these rates may represent some of the same hate crimes), based on Bureau of Justice Statistics data.

Oregon Health Plan members and racial and ethnic inequities

When surveyed by the Oregon Health Authority, close to eight percent of IHN-CCO members said that they feel their experiences with health care are worse than other races and ethnicities (this data includes respondents who identified as white). Statewide, Black or African American respondents were most likely to feel this way (16 percent), compared to an average of 6.4 percent of all respondents. Statewide, non-white Oregon Health Plan members were much more likely to experience physical or emotional symptoms due to treatment based on race, compared white Oregon Health Plan members.
Sex and gender

There are many health disparities that exist between men and women based on biology. Women are much more likely to be diagnosed with breast cancer than men, while other cancers, like prostate cancer, only occur in men. Maternal health risks such as preeclampsia only affect women. However, other health disparities that exist between men and women are not due to intrinsic difference, but to inequities. One challenge in reporting equity issues at the county level is the scarcity of county-level data that both addresses equity and stratifies by sex. Count Her In, a report of the Women’s Foundation of Oregon, identifies 8 major topics that affect women’s health and wellbeing. These are:

1. Violence against women,
2. Cost of caregiving,
3. Gaps in reproductive health access,
4. Wage/wealth gap,
5. Economic fragility,
6. Mental health challenges,
7. Public/private glass ceiling, and
8. Systemic racism.  

Sexual and domestic violence

As discussed in the Injury and Violence section of The Health of Our Bodies chapter, the Center Against Rape and Domestic Violence (CARDV) responded to a total 6,297 calls on its 24-hour crisis line and provided emergency shelter to 116 adults and 85 children for a total of 3,092 bed nights. CARDV also provided legal system support to 860 adults and 30 teens and provided medical advocacy to 190 adults and 25 teens in Benton and Linn Counties. CARDV does not report the sex of the individuals it serves.

In Benton County, approximately 2.3 percent of 11th grade girls reported being physically forced to have sexual intercourse. While this percent is lower than statewide (9 percent), it does indicate that an estimated 90 current female high school students in Benton County have been forced to have sexual intercourse. Approximately 8 percent of 11th grade girls reported having given in to unwanted sexual activity because of pressure, or approximately 300 girls in Benton County. Sexual violence against any children is a major concern, but these rates are approximately four times higher among girls than among boys.

Poverty and economic instability

Single women with children are at a much higher risk of poverty and economic instability compared to married women or single men with children. The median household income for a married couple with children is $85,300. The median household income for a single man with
children is just over half that total: $43,500. However, single women with children make on average only $24,600, slightly over half of what single men with children make. The federal poverty level for a single parent with two children is $19,337. This corresponds to 44 percent of single women with children living below the federal poverty line in Benton County, compared to 2 percent of single men with children.\textsuperscript{540}

**Figure 8.6. Median incomes of family with children, stratified by head of household, Benton County, 2015.**

![Bar chart showing median incomes of family with children, stratified by head of household.](chart)

Figure notes: There are 5,900 married couples with children, 390 single men with children, and 1,300 single women with children in Benton County.  

For single women with children, the cost of child care can be completely out of reach. The median annual cost of child care in Benton County is $13,000, more than half of the median single mother’s income.\textsuperscript{541} This may in fact be one of the reasons that the median income of single mothers is low – child care may be too expensive for them to afford it in order to work. However, it doesn’t explain the gap between single men and single women. Median annual rent in Benton County is $9,300, more than one third of median income among single mothers.\textsuperscript{542}

Fifty-four percent of households headed by single women receive SNAP benefits (food stamps), compared with 9 percent of households with children headed by single men and 14 percent of married couple families with children.

**Disability status**

Individuals with disabilities are not inherently less healthy than able individuals. However, many individuals with disabilities encounter barriers to achieving health that create inequities. As with many groups, specific data on health equity issues facing individuals with disabilities is
scarcely. According to the American Community Survey, 10 percent of Benton County residents have disabilities. This figure may underestimate the true proportion; other sources, such as the Behavioral Risk Factors Surveillance System, estimate that closer to 30 percent of individuals report a disability.

Special Olympics conducts screening of their athletes, and this data can shed some light on health inequities. In Oregon, 48 percent of Special Olympics athletes who answered a health promotion survey were obese, and 31 percent were overweight. This is compared to 34 percent and 27 percent, respectively, among all Oregonians. Twenty-two percent of athletes use tobacco products, thirty-five percent of athletes had untreated tooth decay, and 63 percent had signs of gum disease.

Employment is the major source of income for most individuals in the United States, especially for individuals who do not have significant wealth. Therefore the ability to find and hold a job is a powerful socioeconomic determinant of health. In addition, steady work generally contributes to an increased sense of self-worth, independence, and integration with the community. Individuals with disabilities are far less likely to work than individuals without disabilities. Only forty percent of individuals with disabilities in Benton County are employed, compared with 65 percent of residents without disabilities.

**Figure 8.7. Labor force participation, stratified by disability status, Benton County, 2015**

The Oregon Department of Human Services tracts reports of abuse against vulnerable adults, including adults with self-care and cognitive disabilities. There is no comparable data to definitively point to an increased rate of abuses against these vulnerable adults compared to the general population. Within Linn and Benton counties (reported together by the Department of Human Services Office of Adult Abuse Prevention and Investigations), there were 532 investigated allegations of abuse against adults with intellectual and/or
developmental disabilities, of which 115 were substantiated. Of the substantiated claims in Linn and Benton counties, 21 occurred in care facilities and 94 took place in community settings.\(^ {544}\)

### Age

Everyone has different health issues and health needs at different ages. Age is an intrinsic quality as opposed to a social construct, and everyone experiences different ages throughout their lifetimes. However, the society in which we live privileges some age groups and disadvantages others. In general, adults age 18 to 50 experience fewer health equity issues due to age because they are young enough to avoid age-associated illness and old enough to work, drive, and make their own healthy decisions.

### Children

#### Socioeconomic determinants of health

Children are at increased risk of food insecurity compared to the general population. According to the Oregon Department of Education, 36 percent of Benton County children in public schools qualify for free or reduced-price lunches.\(^ {545}\) Another measure produced by Feeding America estimates that 20 percent of children under 18 in Benton County are estimated to be food insecure, compared to 16 percent of the general population.\(^ {546}\)

While it is difficult to accurately measure the number of residents who experience homelessness, the data suggest that Benton County children are at increased risk for housing instability compared to the general population. According to the Oregon Department of Education, 3.3 percent of Benton County children in public schools were homeless at some point in the 2015-2016 academic school year.\(^ {547}\) The best estimate of homelessness in the general population suggests that approximately 1 percent of the general population experienced homelessness in 2016.\(^ {548}\)

### Abuse

In 2016, there were a total of 359 reports of child abuse or neglect in Benton County, of which 110 (31 percent) were founded (determined to be abuse). This amounts to 8 founded abuses reports per 1,000 children.\(^ {549}\) The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94 percent of reports in Oregon); parents account for 78 percent of all perpetrators.\(^ {550}\) There is no comparable data for abuse rates among the general population.
**Behavioral health**

Data on suicidal ideation suggests that teenagers are nearly twice as likely to seriously consider suicide as young adults and more than four times as likely as other adults. Eighteen percent of eighth graders reported suicidal ideation, compared to 9 percent of young adults age 18-25 and less than 4 percent of adults age 26 and older.\(^{551}\)

**Older adults**

Many health equity issues for older adults are related to an environment that is not supportive of older adults with mobility limitations. Older adults who do not drive and do not live near public transport systems are at risk for poorer access to health care, food insecurity, and social isolation. The driving time to a primary care medical clinic in Benton County can be upwards of an hour for rural Benton County, and there are no public transportation systems that serve the outlying part of the county. Benton County Special Transportation Fund provided over 65,300 trips within Benton County for adults age 60 and older and individuals of all ages with disabilities in 2016 through the Dial-a-Bus program. Dial-a-Bus also provided 3,500 rides on the Coast to Valley route and 5,800 rides on the 99 Express route.\(^{552}\)

Food insecurity is a major concern among older adults. The SNAP utilization rate among Benton County residents age 65 and older is 8 percent, compared to 13 percent of all residents.\(^{553}\)

Suicide rates among men age 65 and older are the highest of any other age group in the LBL region; there were 39 suicides per 100,000 men age 65 and older between 2011 and 2015, compared to 25 suicides per 100,000 men overall and 17 suicides per 100,000 residents (men and women).

**Immigration and documentation status**

**Access to health care**

Immigrants without documentation are excluded from receiving insurance through the Affordable Care Act.\(^{554}\) This means they cannot get Medicaid insurance through the Oregon Health Plan or Medicare if they are over 65. Historically, undocumented children were ineligible for insurance through the Children’s Health Insurance Plan (CHIP). Furthermore, undocumented immigrants are not able to enter into formal employment, preventing them from having employer-provided health insurance. In order to seek medical care, most undocumented immigrants turn to safety net clinics, emergency rooms, and social service agencies.

In 2014, the Community Health Centers of Linn and Benton counties provided care to 363 patients who were classified as agricultural workers. There is no data specifically about immigrants without documentation.\(^{555}\)
Since immigrants without documentation do not have legal access to most government services, there is very little data collected about their health. This is a major challenge in describing their health inequities.

Other potential sources of health inequities are supported by state or national data but lack local data:

- Many immigrants without documentation work in agricultural industries, which have higher rates of injury and exposures to pesticides than other industries, or construction, which has higher rates of injury than many other industries.\(^5\)
- Immigrants without documentation are excluded from government services such as Medicaid and housing vouchers. This exacerbates poverty among this group.\(^6\)
- Immigrants frequently have limited English ability, raising barriers to accessing care and services if those services are not provided in the immigrants’ languages.
- Many immigrants without documentation are at risk of deportation if they encounter immigration authorities. As a result, many immigrants avoid seeking services, and many immigrants are at higher risk of abuse due to fear of reporting abuse to authorities.

**Cover All Kids**

One major step to improving access to care for immigrants without documentation was taken by the Oregon Legislature when it passed the “Cover All Kids” legislation, which extends eligibility for the Oregon Health Plan to all children in Oregon living in households up to 300 percent of the Federal Poverty Level, regardless of residency status.\(^5\) It is expected that the Governor will sign the bill into law. Cover All Kids will take effect on January 1\(^{st}\), 2018.

**Veteran status**

There are 5,300 veterans who live in Benton County, approximately 7.5 percent of the civilian population over age 18.

**Mental health**

There are no available local data detailing disparities in mental health status between veterans and non-veterans. National data indicate that combat veterans are two to four times as likely to have post-traumatic stress disorder (PTSD) as non-veterans. Reported PTSD rates among combat veterans at Veterans Affairs primary care clinics average 12 percent, compared to an estimated 6 percent among non-veterans.\(^5\) Another study found that the diagnosis rate of PTSD in veterans was 36 per 100,000 veterans each year between 2001 and 2014. Veterans were diagnosed with major depressive disorder at a rate of 9 diagnoses per 100,000 veterans over the same time period.\(^5\)
Suicide among veterans

Veterans are twice as likely as nonveterans to die by suicide. Male veterans had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male non-veterans).\textsuperscript{561} The ratio between female veterans and female non-veterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female non-veterans). Between 2008 and 2012, 9 veterans in Benton County died by suicide.\textsuperscript{562}

Disability status

In Benton County, veterans are nearly three times as likely to have a disability as non-veterans. According to American Community Survey data, 29 percent of Benton County veterans have a disability, compared to 11 percent of Benton County non-veterans. There is no data for National Guard members who served in combat roles.

Lesbian, Gay, Bisexual, and Transgender populations

There is a scarcity of data indicating health inequities among the lesbian, gay, bisexual, and transgender (LGBT) population in Benton County and in Oregon.

National data indicates that LGBT adults are more likely to smoke cigarettes or binge drink than straight adults. Bisexual adults are much more likely to report experienced psychological distress than either straight, gay, or lesbian adults.\textsuperscript{563}

The Centers for Disease Control reports that “gay, bisexual, and other men who have sex with men made up an estimated 2% of the population but 55% of people living with HIV in the United States in 2013”\textsuperscript{564} Men who have sex with men are also more likely to contract other sexually transmitted infections such as gonorrhea. Approximately 5 percent of Oregon men are gay, but 42 percent of men who have been diagnosed with gonorrhea report sex with other men.\textsuperscript{565}

Income and poverty

Income is the largest single determinant of health in the United States. Individuals in poverty or with low incomes are more likely to have unstable housing, have unreliable transportation, food insecurity, poor access to health care, and live in less healthy environments. All of these trends hold in Benton County to various degrees.

In addition to social determinants of health, income is closely linked with health behaviors and health outcomes. A comparison of the Oregon Behavioral Risk Factors Surveillance System and its Medicaid counterpart demonstrate this very clearly:

- Out of fourteen healthy and risky behaviors, IHN-CCO (Medicaid) members scored worse on ten of them than Benton County as a whole (IHN-CCO members scored better
on consumption of fruits and vegetables, attempting to quit smoking, smokeless tobacco usage, and binge drinking).

- Out of ten chronic diseases, IHN-CCO (Medicaid) members scored worse on nine of them than Benton County as a whole (IHN-CCO members scored better on cancer).
- IHN-CCO (Medicaid) members scored better on all of seven measures of health care access than Benton County as a whole.\textsuperscript{566}

### Rural communities

The Office of Rural Health, located at Oregon Health and Sciences University identifies unmet health care needs in rural Oregon. The Alsea area (southwest Benton County) and the Blodgett-Eddyville area (which includes some of northwest Benton County) are identified as having unmet needs.

There are a great many health disparities that are evident between rural and urban populations. However, it is not always clear whether these disparities are due to inequitable conditions or underlying differences in the population. Benton County Health Department has produced maps that illustrate differences between urban and rural parts of Benton County and between different areas of Corvallis. These maps are collected in Appendix A, which is available on the Benton County Health Department website, https://www.co.benton.or.us/health.
Conclusion
Meeting Challenges Together

As highlighted throughout this Community Health Assessment (CHA) report, there are many factors that influence and affect health outcomes both positively and negatively in Benton County. The CHA provides an opportunity to identify the many health concerns, disparities and impacts that residents face in their daily lives.

A health assessment is truly important to help identify needs and opportunities for improvement. At the same time, it is important to highlight the various strengths and assets that are alive and well within our communities. These strengths and assets refer to the many types of human, social, and economic resources that our region can offer to address problems. Organizations, agencies, and partners within and across the three counties can collaborate to improve the health and quality of life for residents. Together we can build a road to better health for the region.

General Health Status

In 2017, the Robert Wood Johnson Foundation ranked Benton County 3 out of 36 counties in Oregon for health outcomes and 1 out of 36 for health factors. These rankings look at the different factors and conditions that affect the health and well-being of county residents, and are made up of four categories: health behavior, clinical care, social and economic factors, and physical environment. Despite these positive rankings, there are many opportunities to work on improving the health for all of the people who live, work, and play in Benton County, particularly for those who experience difficulty achieving optimal health.

Benton County has many quality community resources that can help meet the identified challenges and needs in the region. A few highlights of the many resources are summarized here.

Knowledge and Skills in Caring for and Promoting Health

The three-county region of Linn, Benton, and Lincoln counties shares a long history of collaboration and partnership among various organizations and agencies to improve and promote health.

- Across the three counties, a unified Tobacco Prevention & Education Program aims to reduce tobacco-related illness and death. There also exist other population-based prevention and chronic disease programs that reduce the onset and incidence of many chronic conditions and help residents in the region take control of their health.
• The county is home to a variety of medical care, dental care, vision care, elder care, medical clinics, doctors, nurse practitioners, and alternative medicine which can be expanded upon to meet the needs of all residents.
• The county is part of a single Coordinated Care Organization (InterCommunity Health Network CCO) which unifies services and systems for Oregon Health Plan (Medicaid) patients within the Linn-Benton-Lincoln region. This includes a broad partnership and a number of collective projects, committees, and initiatives.
• The Benton County health department works in close collaboration with the Linn and Lincoln County health departments. Information and surveillance is shared, resources are pooled, and expertise is lent as needed between the counties.

Social Support Networks

• Benton County shares a comprehensive network of social support and opportunity for the aging population with Lincoln and Linn counties.
• The region offers specialized support for people with mental illness, addictions, disabilities, and children with behavioral or emotional problems.
• The region shares a strong commitment to the health and wellbeing of children and youth. This commitment includes a focus on issues such as increasing family stability, kindergarten readiness, and equitable service coordination. Numerous organizations exist to address education, nutrition, and social support for children and families.

Without being able to call out every organization and project that supports the health of the region, what is shown above only highlights a few examples; each example is the result of efforts by countless community partners. A wealth of collective action and resources exists within and across the Linn, Benton, and Lincoln County region. Overcoming the many health challenges facing residents depends on this collective action and the vitally important part that each of our community partners play.
Acronyms used throughout the Regional Health Assessment document

ACA  Affordable Care Act  
ACS  American Community Survey  
AHRQ  Agency for healthcare Research and Quality  
AIDS  Acquired Immune Deficiency Syndrome  
BMI  Body Mass Index  
BRFSS  Behavioral Risk Factor Surveillance System  
CARDV  Center Against Rape and Domestic Violence  
CCO  Coordinated Care Organization  
CDC  Centers for Disease Control and Prevention  
CHA  Community Health Assessments  
CHIP  Community Health Improvement Plan  
CLAS  Culturally and Linguistically Appropriate Services  
CLCCCHC  Cultural Competency in Health Care  
DEQ  Department of Environmental Quality  
DMAP  Division of Medical Assistance Programs  
DSM  Diagnostic and Statistical Manual  
ECD  Early Childhood Development  
EDs  Emergency Departments  
EHS  Early Head Start  
EMS  Emergency Medical Services  
EPA  Environmental Protection Agency  
FASDs  Fetal Alcohol Spectrum Disorders  
FPL  Federal Poverty Level  
FOBT  Fecal Occult Blood Test  
FQHC  Federally Qualified Health Centers  
GED  General Education Development  
GFR  General Fertility Rate  
HIV  Human Immuno-Deficiency Virus  
HPSA  Health Professional Shortage Areas  
IOM  Institute of Medicine  
LBCC  Linn-Benton Community College  
LEA  Law Enforcement Agencies  
LGBTQ  Lesbian, Gay, Bi-sexual, Transgender, Queer  
MDE  Major Depressive Episode  
MSFW  Migrant Seasonal Farmworkers  
MSP  My Sister’s Place  
NHDR  National Healthcare Disparities Report  
NOAA  National Oceanic and Atmospheric Administration  
OCCC  Oregon Coast Community College
<table>
<thead>
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<tr>
<td>ODF</td>
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<tr>
<td>OHP</td>
<td>Oregon Health Plan</td>
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<td>OHS</td>
<td>Oregon Head Start</td>
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<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
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<td>Oregon State University</td>
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<tr>
<td>PCP</td>
<td>Primary Care Provider</td>
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<td>Prescription Drug Monitoring Program</td>
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<td>Postpartum Depression</td>
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<td>PRAMS</td>
<td>Pregnancy Risk Assessment Monitoring System</td>
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<td>RHA</td>
<td>Regional Health Assessment</td>
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<td>SIDS</td>
<td>Sudden Infant Death Syndrome</td>
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<td>SNAP</td>
<td>Supplemental Nutrition Assistance Program</td>
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<td>Sexually Transmitted Diseases</td>
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<td>Sexually Transmitted Infections</td>
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<td>Total Fertility Rate</td>
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<td>US Department of Agriculture</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WIC</td>
<td>Women, infants, and children</td>
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</tbody>
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Attachment 10: CHAs and CHPs

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Attachment 10: CHAs and CHPs


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Attachment 10: CHAs and CHPs
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Oregon department of education, 2015-2016 academic year, McKinney-Vento Act data tables.

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OHT 2015, SAMHSA 2014


Oregon BRFSS 2010-2013 County tables; Oregon Medicaid BRFSS 2014.

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Chapter 1
Introduction and Overview

The 2018 Lincoln County Community Health Assessment (CHA) is the result of many dedicated hours of research, working in collaboration with community partners and agencies, leaders, and local residents across the county.

The World Health Organization defines health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”¹ Health is not just about individuals, but includes families, communities, and systems, and is a result of the interaction of complex networks of conditions and factors. Health starts long before illness occurs and is impacted by where and how we live, learn, work, play, worship, and age.

The Lincoln County CHA incorporates this definition of health by describing a wide array of information about the conditions and factors affecting people’s health across the county as well as indicators of health status.

Assessment Goals and Objectives

The Lincoln County CHA:
- identifies and gathers health status indicators in order to determine the current health status of the community;
- describes areas for potential future health improvement while building upon ongoing community knowledge and efforts;
- identifies strengths and challenges facing the county in regard to health status;
- recognizes and highlights the need for more detailed local data; and
- is a collaborative process that incorporates a broad range of community voices.

CHA data informs:
- community, organizational, and local coordinated care organization decision-making;
- the prioritization of health problems;
- reporting requirements and funding opportunities for community partners; and
- the development, implementation, and evaluation of a range of plans, policies, and interventions to improve community health.

Report Organization

The Lincoln County CHA is presented in nine chapters:

Chapter 1: Introduction and Overview, including methodology and limitations.
Chapter 2: *Who We Are*, describing the people of Lincoln County (and sometimes others in the region and state), including population demographics as well as a look at how the community has changed over time.

Chapter 3: *Environmental Health*, which includes information about the physical spaces in which we live, work, and play.

Chapter 4: *Social Determinants of Health*, which includes the social, economic, and community factors that influence health.

Chapter 5: *Access to Health Services*, exploring how we define and measure the ability of those in our community to get the medical care they need.

Chapter 6: *Physical Health*, which covers a number of related health outcomes, from chronic conditions to violence and injury throughout the life course.

Chapter 7: *Behavioral Health*, a look at the indicators and measurements of mental health and substance abuse throughout the community.

Chapter 8: *Health through an Equity Lens*, examining the disadvantages and barriers some populations face more than others regarding improving and maintaining their health status.

Chapter 9: *Conclusion—Meeting Challenges Together*, discussing how these data can be used to understand the health of Lincoln County and recognize opportunities for positive changes to improve the health of the entire community.

**Collaboration and Partnerships**

The Lincoln County CHA is the result of a community committed to improving health for all in Lincoln County. The document was developed through a variety of community partnerships. These partners included the Lincoln, Benton, and Linn County Regional Health Assessment and Alignment (RHA) team. The RHA is a partnership formed by Lincoln, Benton, and Linn counties and the local Coordinated Care Organization (CCO), InterCommunity Health Network (IHN-CCO). The four partners collaborate on a series of assessments with the understanding that a regional approach to population health data allows them to identify wider health trends and pool their resources to efficiently address the issues that their individual Community Health Assessments and group Regional Health Assessment identify. The RHA engages a wide representation of key individuals in the community who shared their personal and professional knowledge while committing to help develop health improvement strategies suitable for the region.

In addition to the RHA, Lincoln County Public Health opened their Public Health Advisory Committee meetings to a wide array of community partners to serve as a steering committee to help shape this CHA. This group represented communities and organizations that represent a
variety of populations across Lincoln County committed to providing ongoing input and oversight of the community health improvement process. This includes the development of the CHA and planning and participation in the community health improvement plan (CHIP). The committee strives to create a CHA that is a comprehensive and considerate portrayal of our community and continues to ensure a process that is inclusive and represents the diversity of our county population as we move into the future and develop the CHIP.

**Methodology**

The Regional Health Assessment team reviewed county, regional, and state health assessments as well as current literature to better understand how best to conduct and design a community health assessment. The team also built on its experience from having previously produced a Regional Community Health Assessment for the Lincoln, Benton, and Linn County region. Staff examined access indicators that have strong evidence for correlation with health status and outcomes. Data from secondary sources were identified through meeting with community partners, and through preexisting publications (e.g., community health assessments and hospital community health needs assessments). In addition, data sources were identified through literature research to include data ranging from local, regional, state, and national levels. A variety of community partners were involved throughout this process. Staff conducted both in-person and phone presentations and consultations with members of regional and county-level governmental, nonprofit, and health system organizations. In addition, members of state and local research communities were contacted.

This process has included:

- engaging county stakeholders and partners in the process of issue identification, data collection, data interpretation, editing, and dissemination of results;
- obtaining updated secondary data for the county;
- synthesizing existing data reports; identifying areas in which more information is needed, and including data from other sources which address these gaps;
- identifying health needs and assets that will inform additional local and regional planning processes, including county-level Community Health Improvement Plans, Public Health Division strategic planning, public health accreditation, and health care transformation initiatives, among others; and
- consulting state and national resources for guidance in the development of this community health assessment, including the following: Oregon Health Authority technical reports (e.g., health equity, asthma, chronic disease prevention); the Centers for Disease Control and Prevention’s data set directory of social determinants of health at the local level; King County’s Equity and Social Justice Annual Report; and the Statewide Health Assessment of Minnesota.
Limitations

While the Lincoln County CHA identifies many critical issues pertaining to community health, it is not inclusive of all health-related issues. As a result, it should not be considered a formal study or research document investigating the causes of each issue raised or providing a detailed analysis of the data. In many cases, data are not available at the regional or county level, nor are all data stratified by race/ethnicity, income, education level, zip code, etc.

When considering the many factors that contribute to health, data are lacking in part because respective theoretical models are still being developed. In addition, conclusions, hypotheses, and interpretations of the interactions between the many factors that contribute to health may not be included, in part because the underlying structures of these interactions are still not fully understood.

Gaps in Data

Recognizing and highlighting the need for more detailed local data was a key objective of this assessment. As mentioned above (and throughout the document), data for Lincoln County were often not available for particular demographics, such as age, income, education-level, race/ethnicity, or zip code. This greatly limited the ability to explore differences or disparities within particular sub-populations.

When race/ethnicity data are gathered, analysis may be further limited due to a lack of data stratification by more specific racial categories, such as U.S.-born versus foreign-born for the Latino population, or the many ethnicities and cultures represented in the category of Asian-Pacific Islander. There are limited data on disparate populations in the region, however, as highlighted in later chapters, and their needs and barriers to health and health care are likely to be greater than those of the population at large.

Throughout the document, national or Oregon state-wide data are provided to illustrate trends, especially among vulnerable populations, when county-level or regional data are not available. It is important to note, however, that national or state-wide rates, trends, and patterns may not necessarily reflect the reality of particular communities, counties, or regional rates and trends. As regional partners continue to gather information to inform their practices and services, it is important to collect demographic data (e.g., zip codes, level of education, etc.) so that more accurate information can be used to inform future health improvement planning and other public health initiatives.

The Role of Public Health Data and the Cycle of Assessment

Health assessment is a cyclical, data-informed process. Many organizations in Lincoln, Benton, and Linn counties are conducting assessments of some kind, on different timelines, and focused on diverse populations. Documents relating to this process are often called Community Health Assessments (CHA) and Community Health Improvement Plans (CHIP).
Shown below is a simplified “cycle of assessment”, which helps to demonstrate the role that data (like the data included in this report) can play in the assessment process. Data can illustrate the health status and disparities within communities (needed for the CHA), and inform health priorities and measure progress (for the CHIP). In addition, data can be used to measure progress on projects and activities aimed at improving the health of the community.

A Framework for Public Health Action: The Health Impact Pyramid

Health is made up of many conditions and factors. A growing body of research worldwide reveals how various conditions, including social and economic opportunities, determine health outcomes.8

The Health Impact Pyramid framework shown below provides guidance for a comprehensive public health approach to community assessment and program development across multiple domains of behavioral influence. This model has been incorporated into the Lincoln CHA to inform this assessment process. In this 5-tier pyramid, efforts to address socioeconomic factors are at the base, followed by public health interventions that change the context for health (e.g., smoke-free laws, safe parks, bike lanes); then protective interventions with long-term benefits (e.g., immunization, smoking cessation); followed by direct clinical care; and, at the top, counseling and education. In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact overall.9,10
A similar model, called the Ecological or Social Ecology model, is used in a variety of disciplines in order to better understand the larger forces that impact individuals.\textsuperscript{11}
The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of the U.S. Department of Health and Human Services Healthy People.12 Healthy People 2020 is the most recent national 10-year agenda for improving health of all Americans with the goal of providing a framework for national, state, and local health initiatives.

The Health Impact Pyramid aligns with the factors that the U.S. Department of Health and Human Services cites as influencing the development of healthy communities:

A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, and play within their borders — where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.13

These factors inform the selection of indicators the RHA team used to describe the health of residents, the neighborhoods in which they live, and the issues that most impact their well-being.

How to Use This Document

Timeframes for Data

This report attempts to balance the importance of comparing data from common years with the goal of presenting the most recent data. Different data sources update and release data on independent timeframes. The U.S. Census Bureau is the main source of data for demographic and socioeconomic information used in this report. The most recent data available for county-level demographic and socioeconomic data are the Census Bureau’s American Community Survey (ACS) 2012-2016 five-year aggregates. This aggregation combines data from the five years in order to produce more accurate estimates.

In an effort to compare data from common years, many statistics reported are from 2015, even if more recent data are available. These statistics reflect measures of health that have historically changed gradually, so differences between 2015 and the present are likely to be minor. However, some measures of health have changed greatly in the past several years, such as the implementation of the Affordable Care Act in 2014, which had huge impacts on insurance coverage rates and Medicaid membership. In this case, and for other rapidly changing measures, more contemporary data are reported in order to best reflect current health status and the current health system.

As with the ACS 5-year aggregates, many data sources aggregate statistics over a number of years to improve the reliability of the estimates. A common example of this is reporting the incidence (number of new cases) of cancer. For example, in the state of Oregon there were
approximately 98,860 new cases of cancer between 2008 and 2012. This statistic is reported as an incidence of 448 cases for every 100,000 people. This means that each year, for every 100,000 people in Oregon there were 448 cancer diagnoses. It does not mean that 448 cases per 100,000 people were diagnosed over the course of 5 years.

**Correlation versus Causation**

Many health indicators are related to one another or to other group or individual characteristics. For example, diabetes and obesity are related, in that individuals with diabetes are more likely to be obese than the rest of the population, and vice versa. This is a statistical correlation. However, this alone does not imply that diabetes causes obesity, or that obesity causes diabetes. Throughout this document, many correlations are presented, because they are important for understanding which groups may have increased risk for poor health outcomes. Terms like “risk factor” and “association” indicate a correlation.

It is important from a public health standpoint not to assume causation without evidence, because that can lead to stigma against individuals or groups as well as a misunderstanding of the relationship between health indicators. When there is a clear causal link between two health indicators or other factors, it is explicitly stated with supporting evidence.

**Regional and County-level Data**

The Lincoln County CHA document is focused on the health status of Lincoln County. However, because of the partnership between Lincoln, Benton, and Linn counties and IHN-CCO, data that encompasses the three-county region may be included to illustrate the larger context of which Lincoln County is a part. Important differences between counties exist and are often identified along with the regional totals. If county-level data are not displayed, the regional totals are approximately representative of all three counties, or county-specific data are not available.

For more information on time-trends, color-schemes, and decisions around displaying regional and county-level data, please see the “Tables, Graphs, and Maps” section.

**Oregon Health Plan Data**

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). The Oregon Health Plan collects a large amount of health-related information about its members. It is a valuable resource for understanding the health of our community. Many topics in this Community Health Assessment have sections with Oregon Health Plan data. Much of these data are for OHP members in Lincoln, Benton, and Linn counties, as they are organized by CCO.
Not all low-income community members have insurance through the Oregon Health Plan, and not all OHP members get their insurance through a CCO. These groups are not included in the data and so the data should not be interpreted as completely representative of under-resourced community members. For example, Lincoln County has a significant presence of Native Americans (discussed in more detail in Chapter 2). Although some tribal members who qualify for Medicaid choose to participate through a CCO, many do not and would therefore not be included in CCO-specific data for the region. It is important to note that this may effect estimates of the overall population, as the data being reported are not broken down by groups.

**Benchmarking**

Benchmarking is an important tool in many fields, including public health. Benchmarking makes a comparison between data (in this case, health status data) and a standard for best practice. In other words, benchmarking involves comparing a particular health status in our region, and what is possible for that health status. Major organizations like Healthy People 2020 dedicate significant resources to provide benchmarks for use by local health authorities. As stated on their website, Healthy People has established benchmarks and monitored progress over time in order to:

- encourage collaborations across communities and sectors;
- empower individuals toward making informed health decisions; and
- measure the impact of prevention activities.

*Healthy People 2020* has also taken a lead in developing a shared set of overarching goals for public health practice, which are listed in the following text.\(^{14}\)

**Healthy People 2020** Overarching Goals

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all life stages.
Tables, Graphs, and Maps

Throughout the Lincoln County CHA document, a number of visuals are included to display data across Lincoln County, the Lincoln-Benton-Linn region (LBL Region), and the state. For consistency, color-coding has been used. Lincoln County has been assigned shades of blue-green, the LBL Region has been assigned shades of purple, and the state has been assigned shades of red. There are also some instances where Benton and Linn county data are shown individually, in which case their colors are blue and green, respectively.

When working with time-trends, multiple years are included only when data were comparable across time. However, comparisons are not always possible, as methods for data collection can undergo significant changes.

Some graphs and tables may not include certain geographies. As mentioned earlier, Lincoln County data are not included when not available or when the regional data are similar to Lincoln County-specific data. Occasionally the regional total was not included, which meant it was not possible to aggregate the counties (usually because the data was age-adjusted at the county level).

When creating all visuals, there were times that numbers were too small to be meaningful or were small enough to be identifiable. In both of these cases the data have been suppressed and it has been noted in the table, graph, or map accordingly.
Chapter 2
Who We Are

The history of Lincoln County begins with the Native American tribes that have lived in the region for thousands of years. Native Americans lived in the valleys and the hills, along rivers and oceans.

Contact with non-native groups began with trappers and explorers in late 18th century, then with pioneers and settlers who moved to the Oregon Territory during the mid-1800s. In 1855, the United States established a 1.3 million acre reservation in what is now Lincoln County. The U.S. government moved many of the coastal and Willamette Valley tribes to this reservation, which at the time included Yaquina Bay.

Over the next 150 years, the county incorporated, grew in population, and developed strong local industries. Natural resources are highly valued in Lincoln County. Industries such as commercial fisheries, logging, tourism, and agriculture are drivers of the local economy. The county is also home to state and national research centers and the Confederated Tribe of the Siletz Indians.

Health Equity

In discussing the health of our county, it is important to recognize that specific subpopulations may experience worse health outcomes than the general population. This chapter describes many of the sub-populations that will appear later in a health equity context. In order to understand the impact of these inequities, it is helpful to understand the variety of demographics that make up Lincoln County. In this chapter, these include: geographic distribution, age, disability status, race and ethnicity, veteran status, and other categories.

Population Overview

Lincoln County is home to approximately 48,000 residents as of 2017. The most populous cities in the county are Newport, the county seat (about 10,200), and Lincoln City (about 8,650). These population estimates come from Portland State University’s Population Research Center, and may be considered to be more reliable than the U.S. Census Bureau’s American Community Survey (ACS) post-census estimates. ACS estimates, while slightly different, contain a diverse range of other topics and is primarily used throughout the remainder of the document for that reason.
Approximately 37 percent of the county’s residents live in rural areas. Rural geography often isolates families through their limited daily interactions with other residents. Isolation is increased by limited public transportation options as well as the variable cost of gasoline. Map 2.1 shows the distribution of population centers in the county.

Map 2.1: Population centers in Lincoln County, 2016

Source: Portland State University 2016 population estimates

In 2016, there were an estimated 20,434 households in Lincoln County. The average household size is about 2.3 people. Families made up 60 percent of the total households, which includes both married couple families and other family households. About 46 percent of households consist of married couple family households. Among persons 15 years of age and
older, 51 percent of those in Lincoln County are currently married (as compared to about 49 percent across the state). Non-family households made up 40 percent of all homes in Lincoln County. This is roughly 3.5 points higher than the proportion of non-family households for the entire state. Most non-family households are composed of people living alone, but some are people living in households in which no one is related to the head of household.

Just over 20 percent of all households in Lincoln County have one or more people under the age of 18, well below the Oregon average of 29 percent. Approximately 15.5 percent of households are individuals aged 65 years or older and living alone, significantly higher than the state’s 11 percent average.

**Student Population**

There is one institution of higher learning in the county: Oregon Coast Community College (OCCC). The college’s main campus is located in Newport, and there are additional campuses in Lincoln City and Waldport.

In addition, a satellite location for Oregon State University is located in Newport. The Hatfield Marine Science Center includes a research lab, visitor learning center, and some limited course instruction. The university is also breaking ground on a new building for the site in 2018, and plans to expand its academic offerings and research capabilities with the new facilities.

**Veterans**

The 2012-2016 American Community Survey (ACS) report the veteran population in Lincoln County at 5,614. Veterans are defined as people who have previously served on active duty in the U.S. Army, Navy, Air Force, Marine Corps, Coast Guard, or who served in the U.S. Merchant Marine during World War II. This equates to veterans composing nearly 15 percent of the civilian population ages 18 years and older in Lincoln County. As this population ages, the number of individuals with veteran status is expected to decrease over time.

**Demographics: Population by Age and Sex**

There are more females than males in the county, according to 2016 U.S. Census estimates, particularly when examining the older age groups. Within the county, children under 18 years of age constitute 17.2 percent of the population and adults 65 years and older are nearly 25 percent of the population. The median age is 50.7 years old, significantly higher than the Oregon median age of 39.1 years. From 2010 to 2017 the population of Lincoln County grew about 4 percent, from 46,135 to 47,960.
Lincoln County does not have a very even population distribution, in terms of age and sex, mostly due to the relatively larger population of people age 50 to 74, as shown in the population pyramid displayed below (Figure 2.1). For comparison, the population pyramid for Oregon is shown next in Figure 2.2, which illustrates a much more even age and sex distribution.

Figure 2.1: Lincoln County population by age group and sex, 2012-2016.

Figure notes: The population of Lincoln County, as recorded in this ACS data, is approximately 46,700.
Source: U.S. Census Bureau, American Community Survey 5-year estimates, Table S0101

Figure 2.2: Oregon population by age group and sex, 2012-2016.

Figure notes: Oregon’s population pyramid displays a classic shape for an aging society, with roughly equal percentages of individuals between 0 and 65 years old. Oregon’s 2016 population, as recorded by this ACS data, is approximately 3,980,000.
Source: U.S. Census Bureau, American Community Survey 5-year estimates, Table S0101
Growing Diversity

Native and Foreign Born

As of 2016, about 94 percent of the people living in county were native residents of the United States. Nearly 43 percent of these residents were born in Oregon. Approximately 6 percent of the people living in Lincoln County are foreign born. Of the foreign born population, about 39 percent are naturalized U.S. citizens. About 10 percent of foreign born residents entered the country after the year 2010.29

Race/Ethnicity

With an increasingly global view of health and a stronger understanding of research outlining the social constructs of race and ethnicity, a culturally sensitive definition of race should be considered. In order to do so, and following the CDC Office of Minority Health’s lead, populations defined by race and ethnicity will more generally be referred to as ‘specific population groups’. Mandated in 1997 by the Office of Management and Budget, data presented by the U.S. Census Bureau and the American Community Survey follow the U.S. Office of Management and Budget updated guidelines for race and ethnicity reporting. This update provided for the inclusion of individuals to self-identify as two or more races in the 2000 Census. It came after recognition and advocacy of race as a social construct and to include missed populations who identified with more than one racial category.30 The inclusion of individuals to self-identify as two or more races has been adopted almost universally across other agencies collecting and reporting demographic data. It is important to understand the data for individuals along the lines of racial divide as later issues of health disparities will be presented. Without understanding the populations impacted by these health disparities, health authorities would be limited in their ability to address the specific issues creating the disparities.

U.S. Office of Management and Budget defines race and ethnicity categories accordingly:

*American Indian or Alaska Native* – people having origins in any of the original peoples of North or South America (including Central America), and who maintain a tribal affiliation or community attachment.

*Asian* – people having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent.

*Black or African-American* – people having origins in the black racial groups in Africa.

*Hispanic or Latino* – a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin, regardless of race.

*Multiracial* – people having origins in two or more of the federally designated racial categories.

*Native Hawaiian or Other Pacific Islander* – people having origins in any of the original people of Hawaii, Guam, Samoa, or other Pacific Islands.

*White* – people having origins in Europe, the Middle East, or North Africa.31
In this report, the non-Hispanic categories are used for races, so, for example, the category denoted White includes white, non-Hispanic individuals. Race or ethnicity will be reported in alphabetical order, as shown above.

White, not Hispanic or Latino individuals comprise 82.9 percent of the population of Lincoln County, as shown in Figure 2.3. The largest non-white populations in Lincoln County are Hispanic or Latino (8.6 percent), American Indian or Alaska Native (3 percent), and those who identify as multiracial. The Hispanic or Latino population increased by 86 percent from 2000 to 2014. Lincoln County is less diverse than the state of Oregon, which has fewer White, not Hispanic or Latino individuals (77 percent).

Figure 2.3: Population by Race and Ethnicity in Lincoln County, 2012-2016

Native American Population

The Confederated Tribes of Siletz Indians are an important presence in the area and possess a rich history. The Confederated Tribes of the Siletz Indians is headquartered in Siletz, Lincoln County. The Tribe lists 5,001 members in its registry. This includes 720 members residing in Siletz, with an additional 444 members elsewhere in Lincoln County. Beyond Lincoln County, 174 members live in Linn and Benton counties, and approximately 2,000 additional members live throughout Oregon. The Tribe maintains a Federal Tribal Community Health Clinic and a USDA Food distribution center in Siletz. The Tribe also owns and operates the Chinook Winds Casino Resort in Lincoln City.
Now a federally recognized confederation of 27 bands, the Siletz tribes originated from the area spanning from Northern California to Southern Washington. The Tribe’s population was concentrated along the coastal areas of Lincoln, Tillamook, and Lane counties. Termination was imposed upon the Siletz by the United States government in 1955. In November of 1977, they were the first tribe in the state of Oregon and second in the United States to be fully restored to federal recognition. In 1992, the Siletz tribe achieved self-governance. Self-governance allowed for direct agreements to be made with the US Government, ensuring control and accountability over tribal programs and funding, including provision of health services.  

The Siletz tribe occupies and manages a 3,666 acre reservation located in Lincoln County, including valuable resources of water, timber and fish. Geographically, this reservation is contiguous with the city of Siletz on its east side and lies to the north and southeast of the city as well. 

Other Native American residents of the region include members of the Confederated Tribes of Grande Ronde, which is headquartered in Polk County, north of Benton County and east of Lincoln County. Members of other Native American tribes based in Oregon and the United States also live in the region. 

**K-12 Population**

During the 2017-2018 school year, the Lincoln County School District served 5,520 students. Table 2.1, below, presents racial and ethnic diversity in the county public and charter schools, grouped by region. These data do not include private school students. The category names are displayed as presented to students.

Table 2.1: Lincoln County School District Regions and County Total, student demographics by race/ethnicity, 2016-2017

<table>
<thead>
<tr>
<th>School district zone</th>
<th>Number of students</th>
<th>American Indian/Alaskan Native</th>
<th>Asian and Pacific Islander</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Multi-Ethnic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>1,665</td>
<td>2.1%</td>
<td>1.3%</td>
<td>0.7%</td>
<td>24%</td>
<td>7.2%</td>
<td>64%</td>
</tr>
<tr>
<td>West</td>
<td>2,060</td>
<td>2.0%</td>
<td>2.1%</td>
<td>0.6%</td>
<td>32%</td>
<td>6.3%</td>
<td>57%</td>
</tr>
<tr>
<td>South</td>
<td>603</td>
<td>1.7%</td>
<td>0.8%</td>
<td>0.3%</td>
<td>8.6%</td>
<td>9.1%</td>
<td>79%</td>
</tr>
<tr>
<td>East</td>
<td>744</td>
<td>9.7%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>11%</td>
<td>12%</td>
<td>67%</td>
</tr>
<tr>
<td>Charters</td>
<td>448</td>
<td>21%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>7.8%</td>
<td>13%</td>
<td>58%</td>
</tr>
<tr>
<td>County Total</td>
<td>5,520</td>
<td>4.6%</td>
<td>1.3%</td>
<td>0.6%</td>
<td>22%</td>
<td>8%</td>
<td>63%</td>
</tr>
</tbody>
</table>

North: Oceanlake Elementary, Taft Elementary, Taft High (7-12)  
West: Newport High, Newport Middle, Sam Case Elementary, Yaquina View Elementary  
South: Crestview Heights, Waldport High, Waldport Middle  
East: Toledo Elementary, Toledo Jr/Sr High, Olalla Center for Children and Families  
Charters: Eddyville, Lincoln City Career Technical High, Siletz Valley Schools, Siletz Valley Early College Academy  
Source: Oregon Department of Education, Student Ethnicity statistics
The K-12 population shows significantly higher racial and ethnic diversity than the regional population as a whole, particularly for Hispanic/Latino and Multi-ethnic populations (Figure 2.4). The Oregon Department of Education uses a different racial/ethnic classification system than the U.S. Census Bureau; in particular, it aggregates Asian and Hawaiian or Pacific Islander into one group, and does not include a category for “Other race.”

**Figure 2.4: Race/Ethnicity of total population versus regional public school K-12 population, 2012-2016**

![Bar chart showing the percentage of different races within the K-12 population and the total population.]

Figure notes: Race and ethnicity categories from ACS data have been adjusted to correspond to ODE race and ethnicity categories. The population of Lincoln County, as recorded in this ACS data, is approximately 46,700. The population of Lincoln County K-12 students is approximately 5,520.

**Language Spoken at Home**

The 2012-2016 U.S. Census data for the county reports that 7.8 percent of residents who are at least 5 years old spoke a language other than English at home (Table 2.2). Of those speaking a language other than English at home, 78 percent spoke Spanish, 13 percent spoke an Asian or Pacific Islander language, 7 percent spoke an Indo-European language other than Spanish, and 2 percent spoke some other language. Across the county, about 40 percent of the population who spoke a language other than English at home reported that they did not speak English “very well”. In comparison with the county, 15 percent of Oregon residents at least 5 years old speak a language other than English in the home, and of those residents, 39 percent reported that they did not speak English “very well”.39
Table 2.2: Percentage of the population 5 years and over who speak English, Spanish, or another language; Lincoln County, the LBL Region, and Oregon 2012-2016

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent who speak a</td>
<td>7.8%</td>
<td>9.7%</td>
<td>15.1%</td>
</tr>
<tr>
<td>language other than</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English at home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>6.1%</td>
<td>5.8%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Other languages</td>
<td>1.7%</td>
<td>3.8%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Does not speak English</td>
<td>3.1%</td>
<td>2.9%</td>
<td>5.9%</td>
</tr>
<tr>
<td>very well</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey 5-year estimates

Disabilities

Understanding and measuring disability is a very complex task. The complexity comes from the fact that the definition of “disability” includes a number of populations, and because the definition is still being discussed and further developed. Definitions of disabilities from a source such as the World Health Organization (WHO) can help shed light on the particular health issues facing these populations, but it must be noted that this definition is not the same as that used to gather many types of data.

Disability itself is not an indicator of poor health—rather, disability can (and often does) become a barrier to employment, adequate housing, social inclusion, transportation, access to health care, and other essential components of a healthy life.

According to the World Health Organization,

Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations.

Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers.40

Mental illness, that substantially limits one or more major life activities, is also included in definitions of disability.41 This is particularly worth noting, as institutionalized populations generally experience a greater prevalence and severity of mental illness than the broader population. However, these populations are not captured in much of the data collected around disability.42
According to 2012-2016 ACS estimates, among the civilian non-institutionalized population, approximately 22 percent reported a disability in Lincoln County, where disability is “defined by a person’s risk of participation limitation when he or she has a functional limitation or impairment.” Disability encompasses many different conditions; for instance, the most common disability in Lincoln County is ambulatory difficulty (difficulty with walking or climbing stairs). The prevalence of disability increases with age, from 11 percent of people between 5 and 34 years of age, and 21 percent of those between 35 and 64, and 41 percent of those ages 65 and up. The 22 percent of Lincoln County residents who reported to the ACS that they are living with a disability is much higher than the 16 percent report rate for the LBL Region. As these values are not age-adjusted, it is important to note that some of this difference may be related to Lincoln County’s older population.

Figure 2.5: Disability rates in Lincoln County and the LBL Region, all ages, 2012-2016

The American Community Survey (ACS) is generally a reliable source for demographic data, but there are alternate sources for disability data. The Behavior Risk Factors Surveillance System (BRFSS) is another national survey that asks about disability, and the following values are also unadjusted for comparison to the ACS data. BRFSS data from 2012-2015 estimates indicate that approximately 35 percent of Lincoln County residents report a disability, compared to only 22 percent in ACS data; and 30 percent of LBL Region residents report a disability, compared to 16 percent in ACS data. One difference is that BRFSS data only includes individuals age 18 and older, while this ACS data includes all ages. But this only accounts for about 3 percentage points of the difference between the county ACS data and the county BRFSS data. There are a number of factors that may account for the discrepancy, including differences in sampling techniques and the response rate of the respective surveys.
Older adults

Among those living in Lincoln County, just under 25 percent are 65 years of age and over, compared with 16 percent in Oregon overall. A number of health issues, needs, and concerns are associated with an aging population, so the age distribution is quite significant.

Ninety-four percent of adults in Lincoln County who are over 65 years of age are white and non-Hispanic. Of older adult households, about 20 percent are renters and 43 percent of households have only one resident. Eight percent of aging residents live below the federal poverty line, and 14 percent of 65+ households receive Food Stamps/SNAP benefits. This population faces higher rates of disability than other age groups, with a rate of 41 percent. Civilian veterans make up 30 percent of this group, and 29 percent of adults aged 65 or older in Lincoln County hold a bachelor’s degree or higher, in line with the Oregon average of 29 percent.

Family structure

There are about 20,400 households in Lincoln County, with an average household size of 2.3 people. The Census defines a family as a household consisting of two or more people, at least two of whom are related by birth, marriage, or adoption. Close to half of Lincoln County households are formed by married couple families. This is similar to the state average. About 30 percent of households are held by individuals living alone, which is also similar to the state average. About 8 percent of Lincoln County households are non-family groups with more than one person, compared to 9 percent in Oregon. This category includes two or more unrelated individuals living in the same household.

A little over 14 percent of households in Lincoln County are single-parent households, with the majority of those (9 percent of all households) headed by women. See Figure 2.6.

The American Community Survey does not track same-sex partnerships at this time, but does include married same-sex couples in the “married couple family” category.
Figure 2.6: Composition of households in Lincoln County, 2012-2016

Approximately 4,190 households in Lincoln County have children under the age of 18 (just over 20 percent of all households). A little over half of county households with children are headed by a married couple; 18 percent are headed by a single male, and 26 percent are headed by a single female. See Figure 2.7.

Figure 2.7: Composition of families with children in Lincoln County, 2012-2016

Figure notes: There are approximately 20,400 households in Lincoln County. The Census defines a family as at least two people in a household related by birth, marriage, or adoption.
Source: U.S. Census Bureau, American Community Survey, Table S1101

Figure notes: There are approximately 4,190 households with children in Lincoln County.
Source: U.S. Census Bureau, American Community Survey, Table S1101
Veterans

The American Community Survey estimates that nearly 15 percent of Lincoln County residents age 18 years or older are veterans of the U.S. military. This is a distinctly higher percentage than in the rest of the LBL Region (see figure 2.8).

Figure 2.8: Percent of population age 18 years and over with veteran status in Lincoln County and the LBL Region, 2012-2016

Lesbian, Gay, Bisexual, and Transgender (LGBT) populations

As of this time, there are no questions used by the U.S. Census Bureau that attempt a formal estimation of the LGBT population. In addition, there is no local, methodical estimation of LGBT residents in Lincoln County. Recent poll tracking suggests that approximately 5 percent of Oregonians identify as LGBT, translating to about 2,300 residents of Lincoln County.

It is important to note, however, that the distribution of this group throughout all areas of the state is unknown. It is also likely, for a variety of reasons, that the 5 percent figure is significantly underestimating the “true” LGBT proportion in the state. For example, it appears that social acceptance of the LGBT community when an individual was a teenager or young adult can be a significant factor in identifying as such. Sexual orientation, specifically, is also often measured in terms of behaviors or attraction (as opposed to outright self-identification).

Regardless, a stronger estimation of the LGBT population in Lincoln County would be ideal.
Conclusion

In order to understand the health of the county, it is vital to understand the people who live here. Differences in age, race or ethnicity, and geography all influence health. Vulnerable populations, such as individuals with disabilities or older adults, merit further description, both because they may require different services, and also because they may present different health concerns. The people of Lincoln County are growing more diverse and represent many different groups, such as students, Native Americans, and retirees. The history of the region has shaped the residents of the county into its makeup today. In exploring the many determinants of health, it is evident that the people of Lincoln County are deeply connected with the environments in which they live. The next chapter explores these environments and the effects they have on the health of the region.
Chapter 3
Environmental Health

Human beings interact with their environment in everything they do. Some of these interactions have the potential to improve health, while others can negatively impact it. The natural environment is made up of the interactions of air, water, open spaces, and weather or geologic activity. The human-made environment consists of homes, communities, and infrastructure. These two environments are closely linked in their effects on human health. Humans benefit from clean water and air, places to exercise and enjoy the outdoors, safe living and working spaces, and opportunities to engage in healthy behaviors such as active commuting and consuming healthy food. However, when an environment lacks these characteristics, the complex interactions of health and environment can worsen health issues. Poor air quality can raise the risk of asthma, heart attack, or stroke; the design of communities can limit opportunities for recreation or access to quality food; and infrequent but intense natural disasters can disproportionately affect vulnerable populations.

Lincoln County has a population that values open spaces for recreation, clean air, and clean water. At the same time, the county faces many food access and transportation issues. An understanding of the natural and human-made environments forms a foundation for an analysis of the health of our county.

Natural Environment

The natural environment changes slowly and usually influences health through long-term, cumulative effects. As a result, many of the data described in this section use longer time frames than elsewhere in this report. Furthermore, it is important to recognize that our natural environment is affected by factors (such as natural disasters) beyond the policies and collective behaviors of the local community. What can be controlled, however, are the systems and practices put in place to react and adapt to the natural environment in order to improve health.

Terrain and Natural Resources

Lincoln County ranks 27th in Oregon (out of 36) for area, covering about 1,194 square miles and spanning from the Pacific Ocean to the Oregon Coast Range. Lincoln County shares borders with 4 other counties, including Benton and Polk to the east, Tillamook to the north, and Lane to the south. Primary land cover types include mixed Douglas-fir coniferous forests, oak savannas, agricultural land, and coastal temperate rainforests.

Natural resources are highly valued in Lincoln County; many residents depend on commercial fisheries, logging, tourism, and coastal agriculture. Newport is home to one of the most
important fishing ports in the United States. It is also utilized by many local agencies, including the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, Oregon Department of Fish and Wildlife, and Oregon State University, among others.

**Annual Weather Patterns**

Lincoln County’s location along the Pacific Coast moderates its annual weather patterns. Temperatures typically range from 40 to 80 degrees Fahrenheit over the course of the year. There is an average of 187 days of precipitation per year, which falls as rain in most of the county year round. Lincoln County receives an average of between 70 and 100 inches of rain per year depending on location, with 30 or more heavy rainfall events (one or more inches per day) in some parts of the county.

**Recreation and Outdoor Spaces**

Lincoln County’s coastline stretches 60 miles from south to north, encompassing beaches, headlands, tide pools, and estuaries. The shallow and deep ocean off the coast of Lincoln County is frequented by recreational and commercial fishers. In 1913, the governor of Oregon declared all beaches a public highway, which began a legacy of public access to the oceanfront. In 1967, the state legislature mandated free and uninterrupted use of the beaches along Oregon’s 362-mile coastline. Along the coastline, there are a large number of state parks with camping and day-use areas, as well as Beaver Creek State Natural Area south of Newport. Farther inland, the Siuslaw National Forest covers 172,000 acres in Lincoln County and an additional 18,000 acres in Benton County. The forest is networked with hiking trails and hosts deer and elk hunts. Many Lincoln County rivers are open to seasonal fishing, including the Yaquina, Alsea, Siletz, and Salmon.

**Recreational Access**

Access to recreational facilities and opportunities demonstrates the intersection of natural and human-made environments. Research demonstrates a strong relationship between access to recreational facilities and physical activity among adults and children. Studies have shown that proximity to places with recreational opportunities is associated with higher physical activity and lower obesity levels. Public recreation areas include parks, schools, public forests and trails, beaches, and waterfronts. The county’s natural areas are largely open to residents.

Recreational opportunities that include walking and bicycling are efficient, low-cost, and available to many. By walking and bicycling, residents can help develop and maintain livable communities, make neighborhoods safer and friendlier, save on motorized transportation costs, and reduce transportation-related environmental impacts, auto emissions, and noise. They can also create transportation system flexibility by providing alternative mobility options, particularly in combination with transit systems. Furthermore, creating walkable and bikeable communities can lead to healthier lifestyles.
The Robert Wood Johnson Foundation has an interactive webpage with which to view various community health indicators by county or state. One topic, “access to exercise opportunities”, measures the percentage of individuals who live reasonably close to a location for physical activity. Lincoln County is tied for 6th place among Oregon counties with 85% of the population meeting that criteria.\(^59\) It is important to note, however, that a substantial proportion of that percentage involves the availability of public beaches. The beach may not serve everyone’s recreational needs or interests, so any examination of exercise access for Lincoln County should include that context.

**Water Quality**

The quality of water sources has a significant impact on population health. Drinking water, recreation, manufacturing processes, and irrigation all rely on clean, safe water.

Water quality in Lincoln County is considered to be good overall. Water quality problems may include issues around sedimentation due to soil erosion, warm water temperatures occurring as a result of low summer flows, and over-use by private and municipal water systems. Potential sources of contamination in watersheds can be mitigated by proper and effective management practices.

Lincoln County is characterized by many rivers that flow from the west slope of the Coast Range to the Pacific Ocean. The communities of Lincoln County rely on various water sources, including the Yachats, Alsea, Yaquina, and Siletz rivers, as well as the Devil’s Lake/Moolack Frontal Watershed.\(^60\)

The Oregon Department of Environmental Quality (DEQ) maintains monitoring stations at many locations along major Oregon rivers, including waterways that provide water to communities in Lincoln County. Average measurements of water quality in the rivers of the region are generally good to excellent, with annual trends improving over time (Table 3.1).

<table>
<thead>
<tr>
<th>River</th>
<th>Sample site</th>
<th>Water quality</th>
<th>2005-2014 Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salmon River</td>
<td>Otis</td>
<td>Good</td>
<td>Improving</td>
</tr>
<tr>
<td>North Beaver Creek</td>
<td>Ona Grange</td>
<td>Good</td>
<td>Consistent</td>
</tr>
<tr>
<td>Yaquina River</td>
<td>Eddyville/Toledo</td>
<td>Fair</td>
<td>Consistent</td>
</tr>
<tr>
<td>Siletz River</td>
<td>Siletz</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
<tr>
<td>Alsea River</td>
<td>Thissell Road</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
</tbody>
</table>

* “Reasonably close” is defined as living in any census block within one-half mile of a local, state, or national park; or living in an urban census block within one mile of a recreational facility (such as a community pool or a gym); or living in a rural census block within three miles of a recreational facility.
**Fluoridated Water**

Water fluoridation is the controlled addition of a fluoride compound to a public water supply, intended to prevent tooth decay. Community water fluoridation is an evidence-based practice recommended by the Community Preventive Services Task Force based on strong evidence of effectiveness in reducing dental cavities across populations. It is an effective, affordable, and safe way to protect children from tooth decay and is recognized as one of the 10 greatest public health achievements of the 20th century.

Water fluoridation complements, but does not replace other efforts to improve oral health. It is a valuable tool in addressing oral health disparities, since everyone who can access public water benefits from it regardless of age, income level, or race or ethnicity. As of 2014, Oregon was ranked very low in the United States (48th out of the 50 states) for the percentage of people receiving fluoridated water. About 74 percent of the U.S. population served by community water systems received fluoridated water, while about 23 percent of Oregon’s public water supplies are fluoridated. This low state fluoridation rate is a direct consequence of some of Oregon’s most densely populated regions lacking fluoridation, including Portland and Eugene. In Lincoln County, there are no public water systems that fluoridate.

**Beaches and Ocean Water**

Ocean beaches are a popular location for recreation; bringing residents of Lincoln County and visitors from across the region (and beyond) into contact with near-shore ocean water. In addition, Lincoln County fisheries are an important source of income for many Lincoln County residents. The quality and safety of the catch impacts the health of seafood consumers in the area. A partnership between the Oregon Department of Environmental Quality (DEQ) and the Oregon Health Authority performs water testing along the state’s coast.

There are 5 beaches and 19 individual monitoring stations along the county’s coast. Monitoring is not consistent year-around, but the most stringent testing follows the season for common beach recreation use (Memorial Day to Labor Day). One method used to monitor water safety is to sample *enterococcus* bacteria, which is often used as a general indicator for harmful microbes. The Beach Action Value (BAV) is a threshold of bacterium colony-forming units, and the BAV was recently updated to a lower threshold based on EPA recommendations in 2014. If a sample contains more than 130 colony-forming units in 100 mL, the DEQ issues a health advisory (the previous standard was 158 units). If this occurs during the high-use period, retesting is done within 96 hours.

From 2010 to 2017, there were 11 health advisories from the DEQ for Lincoln County’s beaches. The average number of days per advisory was just under 6 days. Even with the lower threshold, however, 2017 did not yield any advisories.


Ocean Temperature

Excessively warm ocean temperatures can have direct and indirect effects on human health. Warm water promotes bacterial and algal growth, which can lead to increased risks of direct exposure from seawater or secondary exposure from consumption of seafood. Indirectly, other marine life can be negatively affected by warm water, including important economic crops such as fish, oysters, and crabs.

The National Oceanic and Atmospheric Administration (NOAA) has collected 20 years of ocean water temperatures at South Beach in Lincoln County. From 1995 to 2017, median ocean water temperatures off the coast of Lincoln County have ranged between 49 degrees Fahrenheit in January and 54 degrees Fahrenheit during June. The strong El Niño weather phenomenon in 1997 produced significantly warmer water temperatures, averaging 57.8 degrees from July-September 1997 and 52.4 degrees between December 1997 and February 1998. Another event of similar strength occurred during the 2015-16 season. Within any given year, temperature fluctuations tend to be greater than average differences between years. In 2014, the minimum monthly median water temperature was just under 48 degrees, and the maximum water temperature, recorded in October, was 58.6 degrees. This late season spike was exceptional, as maximum water temperatures usually occur in June.66

Independent of seasonal fluctuations, there have been no long term warming or cooling trends, and the high October 2014 water temperature should not be interpreted as part of a trend. In October of 2017, for example, temperatures corrected back to the median October temperature for the 23-year period of 53.8 degrees.

Air Quality

Air quality has a direct impact on the health of individuals. According to the Environmental Protection Agency (EPA), small particles (less than 10 micrometers in diameter) can be inhaled deeply into the lungs and may even penetrate into the bloodstream. Exposure to particle pollution has been linked to many serious health problems, including:

- Premature death in people with heart or lung disease,
- Nonfatal heart attacks,
- Irregular heartbeat,
- Aggravated asthma,
- Decreased lung function, and
- Increased respiratory symptoms.67

Sensitive groups, including infants, the elderly, and individuals with preexisting conditions, are at heightened risk of complications from breathing particulate matter. Furthermore, unhealthy air days can prevent individuals from participating in other healthful activities such as exercise or enjoying the outdoors. The EPA conducts a National Air Toxics Assessment every three years that evaluates 178 high priority toxic air pollutants to help provide a better understanding of the
air quality in Oregon. The Oregon Department of Environmental Quality then prioritizes areas of Oregon to determine air toxics reduction strategies, if needed. Lincoln County is not a priority area in Oregon, presumably due to their low levels of toxic air pollutants.

Lincoln County enjoys clean and healthy air. The Oregon Department of Environmental Quality (DEQ) records a qualitative measure of air quality each day at multiple locations throughout the state and tri-county region, including Albany, Corvallis, and Sweet Home. They do not measure any locations specific to Lincoln County, but regionally the air quality tends to improve from east to west. The qualitative measure is based on the level of fine particulate matter (PM$_{2.5}$; particulate matter less than 2.5 micrometers in diameter) and ozone levels in the air. The measure has six levels ranging from Good to Hazardous. Between 2007 and 2015, Corvallis averaged 336 days of Good air quality, Albany averaged 328 days, and Sweet Home averaged 314 days. Most of the remaining days were considered Moderate for all 3 locations. However, different areas can experience good or poor air quality due to local factors such as topography or local pollution.

Contributors to poor air quality include wildfires, inversion events, and seasonal pollen. The main driver of poor quality air in the region is wildfire, which can increase the level of fine particulate matter levels on smoky days. However, the available data does not specify on which days the fine particulate matter levels spiked, so it is not possible to determine the differential effect of summer versus winter on air quality. In addition to smoke from summer wildfires, the Willamette Valley can experience high levels of particulate matter in the winter when an inversion of cold air traps exhaust and other pollutants close to the ground.

**Natural Hazards**

Lincoln County is generally considered to be at low risk of frequent natural disasters. Unlike many communities in the United States, the county is not at risk from tornados, hurricanes, or other major storms. Nevertheless, localized flooding and ice or snowstorms are an annual occurrence in some parts of the region, and there are risks from coastal erosion, landslides, wildfire, major flooding, drought, earthquakes, and tsunamis.

The risk of a natural hazard depends both on the characteristics of the hazard, such as magnitude, duration, probability of occurrence and spatial extent, and also on the systems that are vulnerable to the disaster. These can include individuals, infrastructure, community assets, and also the ability and resources available to respond to the hazard. Many of the social and demographic factors that put people at risk for health issues also make them more vulnerable to natural disasters, including age, income, race or ethnicity, and access to health care.

The major natural hazard in the region is flooding. Lincoln County’s many coastal rivers flood almost annually, as up to 100 inches of rain can fall in the Coast Range each year, swelling the waterways beyond their capacities. Other natural hazards include winter storms, wildfires, and

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* The full list is Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy, and Hazardous.
earthquakes. Winter storms bring strong winds and storm surges to the coastline, which can damage structures, trees, and exacerbate coastal erosion. On the steep slopes of the Coast Range, these storms and rainfall events can also lead to landslides, which can block roads and destroy homes.

**Wildfire**

Most wildfires in Oregon occur east of the Cascades, but many of the largest wildfires in Oregon history occurred in the Coast Range. The Siletz and Yaquina fires together burned over 1,200,000 acres in the mid-1800s. However, with today’s emphasis on fire prevention and suppression, major wildfires are now exceedingly rare in Lincoln County. Between 1960 and 2017, the Oregon Department of Forestry (ODF) recorded 757 fires under its jurisdiction in Lincoln County, with an average size of just over six acres. Less than four percent of Lincoln County wildfires are due to natural causes, such as lightning strikes. In all, about 7.4 square miles of Lincoln County land under ODF jurisdiction has burned since 1960, or 0.75 percent of the land area of the county.

**Earthquake and Tsunami Hazards**

One of the most high-profile natural hazards, whose notoriety has grown recently, is the potential for a Cascadia Subduction Zone earthquake occurring off the Oregon coast. Geologists estimate a 7 to 12 percent chance of a magnitude 9.0 earthquake within the next 50 years (before 2065). The last Cascadia Subduction Zone earthquake occurred in the early 1700s. Although the impact of such an event would likely be larger than any other natural disaster in the written history of the West Coast, the rarity of the event itself makes it difficult for communities and individuals to internalize its potential for destruction.

Such an earthquake would cause immediate destruction to much of the infrastructure in western Oregon, and also cause a devastating tsunami. The Lincoln County Department of Planning and Development maintains a tsunami inundation zone map and estimates that a magnitude 8.8 earthquake during high tide would inundate Siletz Bay with 40 feet of water, Depoe and Newport Bays with 31 feet of water, and areas of Waldport and Yachats with close to 30 feet of water. Approximately 50 percent of developed land in Waldport and Yachats are in the inundation zone, and a correspondingly large percentage (between 30 and 40 percent) of the residents of these communities live in the inundation zone. Owing to their larger sizes, Newport and Lincoln City have smaller percentages, but larger quantities of developed land areas and populations in the inundation zone. In all, over 5,300 residents of Lincoln County may live in tsunami inundation zones. Many coastal cities and towns also have critical infrastructure and services located within inundation zones.

While it remains difficult to address the potential destruction of the Cascadia Earthquake, individuals and communities are still able to prepare for lesser disasters, including earthquakes.
This can include anything from ensuring infrastructure is strong enough to weather a lesser disaster, to storing survival supplies at home for use during an emergency.

**Climate Change**

Climate change is a worldwide phenomenon with global causes and many potential regional and local effects. The effects of rising temperatures will be felt locally in:

- Rising sea levels, leading to eroding beaches and more damaging storm surges;
- Warmer, dryer summers, creating a higher risk for heat-related illness;
- Decreased winter and summer snowpack leading to more potential for drought and groundwater stress;
- Greater variability in weather, as storms are predicted to be more intense and less predictable;
- Greater risk of larger, more intense, and more frequent wildfires;
- Higher prices for goods dependent on climates affected by global climate change;
- Changes in how and what agricultural goods are produced in the region;
- Effects on recreational activities dependent on current climate, including fishing, skiing, and summer outdoor activities; and
- Potential increase in human and agricultural diseases associated with vectors and organisms that require a warmer climate.

Many of the environmental indicators already discussed have been linked with climate change, both theoretically and through modeling. These include wildfires, air quality, and ocean temperatures. However, the variability of annual weather and the complexity of the interactions that influence climate change effects make it difficult to demonstrate these links without many years of observable data. As a result, this report emphasizes the acute effects of these indicators rather than their long term trends.

One of the few indicators of global warming for which there is a long record of data is air temperature. Seasonal temperatures have shown long-term upward trends both globally and locally for as long as data has been recorded. The National Oceanic and Atmospheric Administration (NOAA) maintains monitoring stations at many locations in the region that track temperatures and record daily maximum temperatures. Daily maximum temperatures above 90 degrees Fahrenheit constitute extreme heat from a health standpoint. Extreme heat can have a number of harmful effects on health. Heat-related illnesses tend to strike those whose health is already fragile, such as infants, elderly, and the infirm.

On average, there are few above-90 degree days at the NOAA Otis Station (northern Lincoln County), but the long term trend in temperatures has been rising. Between 1947 and 2017, the number of days above the 90th temperature percentile (76 degrees F) rose at a rate of about 1 day every 23 years at the station (see Figure 3.1). This represents an increase of about 3 more days of extreme heat in 2017 than in 1947, a relatively lower rate of increase compared to
Benton County (1 day every 10 years, and whose 90th percentile temperature is 89 degrees F). Even in the milder climate of the coast, however, this trend is expected to continue as global warming accelerates in the 21st century.\textsuperscript{77}

Figure 3.1: Days with extreme heat, May – September, for the period of 1947 – 2017. Otis Station (northern Lincoln County)

Figure notes: Extreme heat is defined as a maximum temperature higher than 90 percent of recorded May-September maximum temperatures for that station between 1947 and 2017. The 90th percentile for Otis Station is 76 degrees Fahrenheit.

Source: NOAA, Climate Data Online

Human-made Environment

Human-made (or built) environments contribute to health in a variety of ways. People need schools, workplaces, and homes that do not expose them to physical or chemical hazards and places to walk and recreate outdoors that are clean, safe, and free of debris. They also need access to quality and affordable food and transportation options, as well as the confidence that their local communities have not been contaminated with human-made pollutants.\textsuperscript{78}

Healthy Homes

Indoor environmental quality, as defined by the Centers for Disease Control and Prevention, is the quality of a building’s environment in relation to the health and well-being of those who occupy the space within it. Key factors that influence a structure’s indoor environmental quality include dampness and mold in buildings, building ventilation, construction and renovation, chemicals and odors, indoor temperatures, and relative humidity.\textsuperscript{79} Buildings in the region are often exposed to winter storms with winds in excess of 30 mph and heavy rainfall, with 24 hour accumulations of greater than three inches. This combination often results in moisture entering buildings, creating conditions for the growth of mold. Examining the health effects of specific
contaminants in buildings is very complex, but research has shown that some respiratory symptoms and illnesses can be associated with damp buildings.80

**Housing Characteristics**

The age of a house can predict many other factors that affect the health of the occupants, including exposure to lead, asbestos, or other hazardous materials, mold or pest infestations, and weather resistance and temperature stability. Fifty-four percent of the housing units in Lincoln County were built before 1979, the year when lead paint was banned from use in homes (Figure 3.2).

**Figure 3.2: Construction year of housing stock in Lincoln County for houses built before 2016, 2012-2016 averages**

![Construction year of housing stock](image)

*Figure notes: There are approximately 30,800 housing units in Lincoln County. Source: U.S. Census Bureau American Community Survey, Table B25001*

**Lead Screening**

Lead poisoning is a significant health concern. Laws and regulations are in place to help protect people; however, lead poisoning still threatens many Oregonians, especially children. The Centers for Disease Control and Prevention reports that “even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement.”81 Blood levels between 1 and 9.9 micrograms per deciliter (μg/dl) are of medical concern; concentrations of ten μg/dl or above are considered lead poisoning.

Although leaded paint and gasoline can no longer be legally sold in the United States, many children are still exposed to dangerous amounts of lead. Lead paint dust is the most common way children are exposed, and it is common inside and outside homes built before 1978.82 Ordinary household repair and maintenance activities can stir up lead-contaminated dust.
People can also get lead in their bodies by eating foods contaminated with lead from exposure to soil or lead paint chips.

Oregon has a relatively low overall prevalence of lead poisoning compared to other states, and prevalence rates have declined through the years. This decline is consistent with national trends. In Oregon an estimated 1,000-2,000 children have blood lead levels equal to or greater than ten μg/dl. This gives a rate of 1.16 – 2.32 children per 1,000 children.

**Radon**

Radon is a gaseous radioactive element that occurs from the natural breakdown of uranium in the soil and rocks. It is colorless, odorless, and tasteless. In indoor settings, radon poses a risk by emitting atomic particles that can enter the lungs and alter the DNA, increasing a person’s lung cancer risk. Radon is the second leading cause of lung cancer in the nation and, according to the Environmental Protection Agency, is classified as a Class A carcinogen. In residential housing and other buildings, radon typically enters through the surrounding soil (such as at the basement level) and radon levels are measured by the Oregon Public Health Division (OPHD). Radon levels of four picocuries of radon per liter (pCi/L) of indoor air are considered dangerous to health. Radon is found in varying concentrations throughout the United States with moderate levels found in Oregon, generally under the four pCi/L level. When the annual average concentration in a home exceeds four pCi/L, it is recommended that measures be taken to lower the concentration to below the four pCi/L level.

Lincoln County radon levels vary throughout the area. However, most areas in the county did not have enough measurements for the OPHD to confidently assign a risk level. Some areas have enough (between 5-19 measurements) to provisionally assign one, and Lincoln City and Toledo were notably assigned a moderate risk. No city or township in the county had enough measurements (20+) to have a non-provisional risk assignment.

**Tobacco-free Spaces**

Tobacco use is still the leading preventable cause of death and disability in Lincoln County. Statistics on tobacco related diseases and deaths are discussed in Chapter 6: Physical Health.

As stated in Oregon’s Tobacco Prevention and Education Program (TPEP) report, tobacco use is a major risk factor for developing heart disease, diabetes, arthritis, asthma, and many cancers. Secondhand smoking, or exposure to a smoker’s exhaled smoke, has also led to significant chronic disease and death. In light of this, the county and the state have taken steps to reduce exposure to tobacco and cigarette smoke in public places. Promoting smoke-free environments is a proven strategy to reduce tobacco use and exposure to secondhand smoke.

The Oregon Indoor Clean Air Act prohibits smoking and other tobacco products in most workplaces, schools, bars, and other indoor public spaces. It was recently expanded to inhalant delivery systems such as e-cigarettes and vaping equipment.
Transportation

Transportation links people and places, making it possible to get to work, to school, to recreational opportunities, and to the grocery store. Transportation includes more than roads, walkways, or bridges; it also involves investments in the promotion, education, access, and safety of all transportation methods. It also covers public transit systems, policies that dictate the location and construction of roads, and guidelines for accommodating different kinds of users. Guidelines are important for providing avenues for physical activity, and for reducing the potential of driver, cyclist, and pedestrian injury.

Access to Public Transportation

Access to public transportation is an important public good. Not only does taking public transportation provide additional opportunities for exercise, but its presence also makes it easier for individuals and families without private transportation to access goods and services vital to maintaining health. These include grocery stores, health and dental care, and recreation facilities. As of 2013, approximately 7 percent of Lincoln County residents live within one quarter of a mile from a bus stop. Although distance to a public transit route is one measure of the strength of a public transportation system, additional factors impact the strength of public transport, including frequency and hours of operation, direct routes, safety, and connections to other routes.

People of color, people experiencing poverty, people with disabilities, and people who experience language barriers are more likely to depend on public transit. However, they often live in areas with poor transit service, fewer destinations, and poor connectivity. These unfair burdens increase transportation costs and stress, and limit access to economic and educational opportunities, housing, healthy foods, and physical activity. Vulnerable populations often have unsafe transportation conditions, including limited safe crossings, areas with high-speed traffic, and poor sidewalk and bicycle infrastructure.

Active Commuting

There is a strong correlation between access to public transportation and using active transportation (which includes public transit, cycling, and walking) to commute to work. Among Oregon counties with public transit systems, an increase of five percent of the population within one quarter mile of a bus station is associated with a one percent increase in the percent of the working population that commutes by active transportation. This trend is reflected in regional statistics as well. As of 2016, approximately 7 percent of Lincoln County residents commute using bus, bicycle, or foot travel, compared to 11 percent of all Oregonians.
Commuting Patterns

Most workers in the region drive to work. Among Lincoln County residents, 73 percent of the workforce drives to work alone, with an additional 13 percent carpooling.92

Commuting to jobs outside of one’s city of residence is common for many Lincoln County residents. Approximately 19 percent of county residents who work report driving for 30 minutes or more to work, although this is lower than the statewide estimate of 30 percent.93 A longer commute is associated with negative health effects in a number of ways. Longer commutes have been associated with greater levels of stress. Car commuting has also been linked with physical ailments such as lower back pain, increased likelihood of obesity, and less time for recreation, relaxation, or sleep. Working outside one’s city of residence can also make it more difficult to access medical care, either for the worker or his or her family.

Workers in the county average nearly a 20 minute commute, however the travel time varies between cities. Smaller cities generally have a larger proportion of workers who travel long distances for work. In the case of Lincoln County, however, that trend is not consistent. Most towns in the county, regardless of size, have 12 to 18 percent of their workforce commuting 30 minutes or more.94

The location where residents work compared to where they live also influences transportation choices. Workers who must travel outside of the county may find that public transportation and ride sharing is not an option due to distance, time and availability. Only about 5 percent of Lincoln County workers travel outside the county for work, however.95

Access to Healthy Foods

Transportation options and limited public transit for residents contributes to challenges in the region with regard to nutritious food access. For households without private vehicles, the ability to shop for food at grocery stores is highly dependent on proximity. Twenty-three percent of households in Lincoln County are within one half mile of a grocery store, more than the state average (19 percent). The average distance between a household and the nearest grocery store is 2.6 miles.96 However, since grocery stores tend to be located in larger towns, the county average may overestimate the urban average and underestimate the rural average.

Access to nutritious foods can be particularly difficult for residents with unreliable transportation or tight budgets. A rural community is considered to have low access to food when it is ten or more miles from a supermarket or large grocery store.97 Rural residents must often travel long distances for food. For rural residents this could mean traveling as much as 20 miles to the nearest full service grocery store. Rural grocery stores throughout the county report barriers that may limit rural low-income families’ access to healthy food. These include: administrative barriers to becoming an authorized vendor for SNAP and WIC programs, economic barriers to offering fresh fruits and vegetables, meat, dairy and other refrigerated
foods. For residents in non-rural areas, the most accessible grocery store may also not be the most affordable.

Nearly twice as many residents live within one half mile of a tobacco vendor compared to those who live within one half mile of a grocery store or a WIC authorized store (Table 3.2). Approximately nine percent of Lincoln County residents do not live “close” to a grocery store (defined as within 1 mile for urban residents or within 10 miles for rural residents) and are low-income.*

Table 3.2: Proximity to grocery stores compared to tobacco vendors in Lincoln County, 2012

<table>
<thead>
<tr>
<th>Store type</th>
<th>Average (mean) walking distance in miles</th>
<th>Percent of population living within ½ mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery stores</td>
<td>2.6</td>
<td>23%</td>
</tr>
<tr>
<td>WIC-authorized stores</td>
<td>2.7</td>
<td>19%</td>
</tr>
<tr>
<td>Tobacco vendors</td>
<td>1.7</td>
<td>37%</td>
</tr>
</tbody>
</table>

Source: Oregon Environmental Public Health Tracking Tool

In addition to access to nutritious food, proximity to fast food can affect the health of the community. Although complex in nature, the food environment can impact what people eat, and providing healthy options is vital for the health of the community. Although not causal, studies have shown an increase in the prevalence of obesity and diabetes with increased access to fast food outlets in a community. Twenty-one percent of restaurants in Lincoln County are fast food vendors, compared to 38 percent in Linn County and 46 percent in Benton County.

Food Safety and Health Inspections

Food safety falls under the jurisdiction of county health departments when food is served in restaurants or from mobile vendors. The Centers for Disease Control and Prevention has five categories of foodborne illness risk factors. These are:

- Improper holding temperatures;
- Contaminated equipment;
- Poor personal hygiene;
- Unsafe sources; and
- Inadequate cooking.

Lincoln County health inspectors conducted all of the required 579 restaurant inspections for the county in 2015, as well as 170 re-inspections. The county did not report counts for food complaints, foodborne illness complaints, or foodborne illness investigations. There was also no data for failure-to-comply notices, summary closures, or voluntary closures.

* “Close” is defined as within 1 mile for urban areas and within 10 miles for rural areas
Food sold in grocery stores is under the jurisdiction of the Oregon Department of Agriculture. A total of 296 facilities in Lincoln County are licensed by the agency, which includes grocery stores, bakeries, distilleries, and meat and egg processors.103

**Environmental Hazards**

The majority of the regional population does not come into contact with large-scale, human-caused environmental hazards on a regular basis. However, the presence of contaminants in the community, such as sewage overflows, environmental clean-up sites, and pesticide applications, demonstrates some of the broader potential for health exposures that can impact the health of the region.

**Domestic Sewage Systems**

The majority of waterborne disease outbreaks are caused by bacteria and viruses present in domestic sewage. Septic tanks are the largest contributor to bacterial and viral groundwater contamination. Health risks are higher in areas where older, failing septic systems discharge untreated or partially treated sewage above or below ground, potentially contaminating nearby streams and wells.

As of August 2017, there were 47 certified wastewater system collection operators and 38 certified wastewater system treatment operators in Lincoln County.104

The Oregon Department of Environmental Quality (DEQ) has 88 active permits for wastewater disposal in Lincoln County as of March 2018.105 These permits are designed to limit storm water run-off, industrial wastewater, sewage, and other sources of water pollution.

**Environmental Clean Up Sites and Leaking Underground Storage Tanks**

The Oregon Department of Environmental (DEQ) Cleanup Program protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances. The program's objective is to improve sites to the point where no further cleanup action is necessary.

The Oregon Community Right to Know and Protection Act (ORS 453.307-453.414) is a law that makes information about hazardous materials in Oregon available to emergency service personnel, emergency planners, health officials, and the public. Facilities throughout Oregon that are storing a reportable quantity of hazardous substances are required to annually report this information to the State Fire Marshal.106 Incidents that release hazardous materials into the environment may occur in facilities that manufacture, use, or store these substances. Incidents may also occur during transport of these materials or by equipment malfunction.107
As of March 2018, the DEQ is tracking and monitoring 54 environmental clean-up sites in Lincoln County. Sites contain different levels and types of contamination from hazardous substances including petroleum from residential heating oil tanks, regulated tanks at gas stations, and other commercial facilities. Some sites may have one contaminant in a small area of shallow soil, while others may have high concentrations of many substances in soil, surface water, sediments or groundwater.

The DEQ’s Land Quality Division also runs Oregon’s Leaking Underground Storage Tank Program. An underground storage tank system is a tank or any underground piping that is attached to the tank and has about ten percent of its combined volume underground. These underground storage tanks may store petroleum or other hazardous substances that can pose a risk to groundwater quality if leakage occurs. Oregon’s program handles issues related to clean up of soil and groundwater contamination from spills or releases and enforces state and federal rules. In 2016, Lincoln County had 4 documented leaking underground storage tanks.

**Pesticide Exposure**

Residents of the region may come into contact with pesticides either through personal use or as a by-product of commercial use for agriculture or forest management. Many pesticides have the potential to harm humans, birds, fish and aquatic organisms, and land-based vertebrates and invertebrates. Due to this potential for harm, the Oregon Department of Agriculture restricts the use of 495 distinct pesticide products, comprising over 100 different active ingredients. Some well-known compounds include atrazine, permethrin, and organophosphates. A 2013 study of pesticides and herbicides lists glyphosate as one of the most common active ingredients in aerial spraying. Glyphosate is also widely available in home products. Many agricultural operations such as wheat, annual rye-grass, and other cash crops also rely on herbicides. Grass and crop fields are sprayed on an annual basis to clear the fields for a new crop the following year.

In the 2009-2011 period, Lincoln County reported no cases of acute pesticide related illness, compared to Benton County’s seven reported cases, and Linn County’s eight reported cases. Statewide, the majority of pesticide related illness occurs in residential use (69 percent), as opposed to work, agricultural, or industrial use. The majority of residential illnesses were due to exposures not related to actual use of a pesticide (63 percent), but rather as accidental contact with pesticides applied earlier. A further 28 percent of residential exposures occurred during application of pesticides. These proportions were similar for work-related pesticide exposures. Anyone using pesticides should take reasonable precautions to avoid direct contact or inhalation, and limit secondary exposure through accumulation on clothes or equipment.
Conclusion

From particulate matter to ocean temperature, the health and stability of the environment that we live in creates opportunities and hazards for our own health. We rely on the natural resources of our region to maintain our livelihoods while being available for our enjoyment. We expect our built environment to function in our day-to-day lives and help us make healthy lifestyle choices. Our environment shapes who we are, even as we shape our environment. Slow trends and sudden disasters can have wide-reaching effects for everyone living in our region. Intersections between individual health and environmental factors are often complex but undeniable. In subsequent chapters, the complex nature of environmental factors will be better understood and highlighted through the lens of social determinants of health and health across the life course.
Chapter 4
Social Determinants of Health

Opportunities for health among residents of Lincoln County begin within the community, including their homes, neighborhoods, places of worship, workplaces, and schools. A growing body of scientific research shows that all people benefit when communities invest in health.

The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”. These non-medical factors contribute to a large percentage of preventable poor health outcomes. Social determinants include influences such as “early years’ experiences, education, economic status, employment and decent work, housing and environment, and effective systems of preventing and treating ill health.” These aspects of health are often referred to as “upstream factors” as their effect occurs well before illness manifests and curative intervention becomes necessary. In this chapter regional data will be presented for education, employment, income, poverty, economic challenges, food security, home ownership, and homelessness. Environmental factors have been presented in Chapter 3, and access to medical systems will be presented in Chapter 5.

Income, Poverty, and Economic Challenges

Income and Poverty

Income is the strongest predictor of health among all social determinants of health. Not only are there many studies showing a strong association between income and health, but income also affects all other social determinants of health, including education, food security, and housing. The National Longitudinal Mortality Survey found that people in the top five percent of incomes had life expectancies 25 percent longer than people in the bottom five percent of incomes. While income is not a “one size fits all” measure of health, understanding the income of the region provides a solid foundation for measuring social determinants of health in Lincoln County.

Income

Income incorporates more than money earned from a job. It also includes assets such as bank accounts, equity in a home, and access to other economic resources. Income influences an individual’s ability to choose where to live, what food to eat, participation in physical activities (especially those that require fees or special equipment), and availability of leisure time. Regional data are highlighted here, as the story of economic disparity is similar across all three counties.
Median and Per Capita Incomes

The median income of a population is one measure of the overall income in that population; 50 percent of the population earns more than the median income, and 50 percent of the population earns less. The median (inflation-adjusted) household income in Lincoln County is lower than in Linn County, Benton County, and the state (Table 4.1).

<table>
<thead>
<tr>
<th></th>
<th>Linn</th>
<th>Benton</th>
<th>Lincoln</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median household income</td>
<td>$46,782</td>
<td>$52,015</td>
<td>$41,303</td>
<td>$53,270</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau American Community Survey

Per capita income is another measure of income. It is the average income of a person. Per capita income is lower than median household income because it is per person, not per household. Figure 4.1 below displays the per capita income of different racial and ethnic subpopulations in Lincoln County.

Figure 4.1: Per capita income by race or ethnicity in Lincoln County, 2012-2016

Figure notes: Black or African American and Native Hawaiian or Pacific Islander data are suppressed due to small sample sizes.
Source: U.S. Census Bureau American Community Survey, 5-year estimates, Table B19301

Income Inequality

Income inequality (the distribution of wealth between richer and poorer segments of the population) is associated with many health outcomes. Regions with higher inequality are more likely to experience increased infant mortality, lower life expectancy, higher rates of depression, and lower health status overall. Income inequality is commonly measured by calculating the ratio of the 80th income percentile to the 20th income percentile of the
population. In Oregon, the 80th income percentile is 4.7 times the 20th income percentile (Figure 4.2). Lincoln County has a ratio of 4.4, just lower than the state ratio, meaning the residents of Lincoln county experience less income inequality.

Figure 4.2: Ratio of the 80th income percentile of residents to 20th income percentile of residents in Linn, Benton, and Lincoln counties, and the state of Oregon, 2012-2016

![Graph showing the ratio of the 80th income percentile to the 20th income percentile for different counties and the state of Oregon.]

Figure notes: This measure of income inequality is taken by computing the 80th income percentile – the dollar amount that is greater than 80 percent of household incomes in the geography, computing the 20th income percentile, and dividing the result. A larger ratio indicates more income inequality.
Source: U.S. Census Bureau American Community Survey, 5-year estimates, Table B19080

Poverty

Poverty is strongly linked to poor health outcomes. Poverty is related to both limited income and lack of economic stability, limited choices in education, employment, and living conditions, and reduced access to safe places to live, work, and play. It can also frequently hinder choices and access to healthy food.

The United States Census Bureau determines the Federal Poverty Level (FPL) each year. The FPL was originally an estimate of the amount of money required to meet the cost of living for individuals or families. Currently, the FPL is a statistical threshold of poverty. It is not generally recognized as an accurate measure of true poverty, but it is used for determining eligibility for assistance programs. Below, in Table 4.2, the FPL for individuals and families is presented, as well as additional FPL ratios that are used for eligibility and comparison purposes.

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* The 80th income percentile is the income of the individual who earns more than 80 percent of the population. The 20th income percentile is the income of the individual who earns more than 20 percent of the population. Those who earn more than the 80th income percentile are the richest 20 percent of the population; those who earn less than the 20th percentile are the poorest 20 percent of the population.
Table 4.2: Annual Income and Federal Poverty Levels and related ratios for 2013

<table>
<thead>
<tr>
<th>Family size</th>
<th>Percent of Federal Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Individual</td>
<td>$6,041</td>
</tr>
<tr>
<td>Three-person family</td>
<td>$9,436</td>
</tr>
<tr>
<td>Four-person family</td>
<td>$12,129</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Historical Poverty Threshold Table

Approximately 20 percent of Lincoln County’s population lives below the federal poverty line, compared to 13 percent of Oregon’s total population. One worrisome statistic is that children less than five years of age are among the age groups with the highest percentage living below the federal poverty level, accounting for about one-third of children under five years of age in Lincoln County. Figure 4.3 illustrates each age group’s contribution to the overall poverty rate in Lincoln County.

Figure 4.3: Percent of population living below the federal poverty line by age group in Lincoln County, 2012-2016

Figure notes: The population of Lincoln County, as recorded in these data, is approximately 49,000. Source: U.S. Census Bureau, American Community Survey, 5-year estimates, Table S1703

Earning less than a high school education increases the risk of experiencing poverty. Of the adults in Lincoln County over the age of 25 who did not complete high school, 30 percent are below the federal poverty line, compared with 18 percent of those who at least completed high school (or equivalent).

Variation also exists between racial and ethnic population groups. As shown in Figure 4.4, most racial and ethnic groups in the region have a higher poverty rate than the White, non-Hispanic/Latino population, which is similar to Oregon overall. Individuals in Lincoln County who identify as Hawaiian or Pacific Islander and Black or African American are among the
racial/ethnic groups with the highest poverty rates at 71.4 percent and 39.3 percent, respectively. It is important to note, however, that the population for some racial/ethnic groups is small relative to other groups within the county, which creates more uncertainty in the estimates.

**Figure 4.4: Percent of Lincoln County population living below the federal poverty line by race and ethnicity, 2012-2016**

<table>
<thead>
<tr>
<th>Race or Ethnicity</th>
<th>Poverty Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>22%</td>
</tr>
<tr>
<td>Asian</td>
<td>28.1%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>39.3%</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>28.1%</td>
</tr>
<tr>
<td>Multiple races</td>
<td>23.4%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>71.4%</td>
</tr>
<tr>
<td>Other race</td>
<td>13.7%</td>
</tr>
<tr>
<td>White, not Hispanic or Latino</td>
<td>17.1%</td>
</tr>
</tbody>
</table>

Figure notes: The population of Lincoln County, for whom poverty status has been determined, is approximately 49,000. The estimates for Black or African American, American Indian or Alaska Native, and Native Hawaiian or Pacific Islander poverty rates are potentially unreliable and should be interpreted with caution. Source: U.S. Census Bureau, American Community Population, Table S1701

**Children Living in Poverty**

A growing body of research shows that children who are raised in families experiencing long-term poverty are at greater risk of significant and long-term deficits in health. Across Lincoln County, approximately 33 percent of children under the age of five were living in poverty in 2016. That same year, an estimated 29 percent of children under 18 years of age in Lincoln County were living in households earning less than the federal poverty level. This accounts for approximately 2,300 residents of Lincoln County. Rates of childhood poverty are higher in Lincoln County than in Oregon and the United States (each about 21 percent).

**Low Income and Cost of Living**

Many regional residents earn incomes higher than the federal poverty level but still struggle economically to meet their everyday needs. Approximately 38 percent of Lincoln County’s population earn less than 185 percent of the federal poverty level ($21,775 annually for an individual or $44,863 annually for a family of four in 2015). This is the threshold that many
assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), use for income eligibility.

Research suggests that the cost of living in Lincoln County is well above the federal poverty level. Table 4.3 below shows the cost of living for two family types in Lincoln County and the corresponding percentage of the Federal Poverty Level. These figures take into account costs such as housing, child care, food, transportation, health care, and taxes.\textsuperscript{129}

\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|l|}
\hline
\textbf{One adult, one preschooer, one school-age} & \textbf{Two adults, one preschooer, one school-age} \\
\hline
\textbf{Annual cost of living} & \textbf{Percentage of FPL} & \textbf{Annual cost of living} & \textbf{Percentage of FPL} \\
\hline
$40,150$ & $197\%$ & $50,061$ & $204\%$ \\
\hline
\end{tabular}
\caption{Cost of living as a percent of the federal poverty level in Lincoln County, 2017}
\end{table}

Source: The Self-Sufficiency Standard for Oregon

\section*{Employment}

Stable and secure employment influences health, not only by being a source of income, but also by providing access to health insurance. Compared to unemployed workers, individuals who are employed full-time have higher incomes and standards of living, less stress, and may be less likely to turn to unhealthy coping behaviors such as alcohol consumption or smoking.\textsuperscript{130} The seasonally-adjusted unemployment rate for Lincoln County in 2017 was 4.7 percent, compared with 4.1 percent statewide.\textsuperscript{131} The unemployment rate has been decreasing steadily since 2009 and has remained below pre-recession rates since early 2017.\textsuperscript{132} Generally an unemployment rate of 5 percent is considered “full employment” as there is always a certain amount of turnover in the labor force.

\section*{Economy and Jobs}

The arts, entertainment, recreation, accommodation, and food services sector employs approximately 21 percent of the workforce in Lincoln County, compared to 10 percent of the population statewide. This is largely due to the tourism draw and capacity of the coastal towns of the county. The next most populous economic sectors in Lincoln County are the educational services, health care, and social assistance sector and the retail trade sector, employing approximately 17 percent and 14 percent of the county workforce, respectively.\textsuperscript{133}

\section*{Education}

Health and education are closely connected. Educational access and attainment are very important predictors of health status. Individuals with higher levels of education are less likely to die prematurely or report acute diseases. They also report positive health behaviors, like maintaining healthy weight, and fewer risky behaviors, like smoking.\textsuperscript{134} Furthermore, education levels are the strongest predictor of income and wealth, which strongly influence lifelong health.\textsuperscript{135}
Early Learning

Early childhood development supports nurturing relationships and learning opportunities that foster children’s readiness for school. The early years are crucial for influencing health and social well-being across a child’s lifetime. Research evidence accumulated over the past 40 years supports the conclusion that children who participate in high-quality early childhood development (ECD) programs benefit from a broad range of immediate and long-term health benefits.  

The Head Start Program is one such federal program that promotes the school readiness of children from low-income families by enhancing their cognitive, social, and emotional development. Head Start programs provide a learning environment that supports children’s growth from birth to age five in several areas, such as language, literacy, and social and emotional development. Head Start programs also emphasize the role of parents as their child’s first and most influential teacher and support the development of healthy familial relationships and well-being. In Oregon, Head Start programs include at least the Oregon Head Start Pre-kindergarten (OHS PreK) program, which serves children ages three to five from low-income families. Some Head Start programs also include Early Head Start (EHS), which is a comprehensive program for children below the age of three and pregnant women from low-income families. Oregon children whose families are below the federal poverty level ($24,250 for a family of four) are eligible for these benefit programs.

The OHS Pre-K and EHS programs that serve children and families in the region are shown in Table 4.4 below:

<table>
<thead>
<tr>
<th>OHS Pre-K and EHS program</th>
<th>County</th>
<th>OHS Pre-K enrollment</th>
<th>EHS enrollment</th>
<th>Total enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Services</td>
<td>Lincoln</td>
<td>160</td>
<td>0</td>
<td>160</td>
</tr>
<tr>
<td>Consortium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siletz Tribal</td>
<td>Lincoln</td>
<td>63</td>
<td>0</td>
<td>63</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education and the listed Head Start agencies

Despite strong research showing the positive impact of high-quality early education, many families in the region who are in need of child care may not be served. While data are not available for informal childcare options, in 2014, for every 100 children there were 19 available childcare slots in Lincoln County. There were 17 available childcare slots per 100 children in Oregon, and the goal for the state is 25 slots per 100 children. The average annual cost of toddler care in childcare centers in Linn, Benton, and Lincoln counties are shown in Figure 4.5. To give an example, two parents, both earning $10.25 per hour (Oregon’s minimum wage) in full-time jobs would make approximately $42,000 for their household (before taxes, credits, or adjustments). The median annual cost of child care for one child in Lincoln County is $6,000, which is one-seventh of these parents’ household income.
High School Education

High school graduation is a strong predictor of future employment and earnings. Conversely, dropping out of school is associated with lower income, multiple social and health problems, and health risks. For example, 32 percent of Oregonians who do not have a high school degree smoke, compared with 24 percent of high school graduates, 18 percent with some post-secondary education, and seven percent of college graduates (age-adjusted).

The high school graduation rate is currently very poor in Oregon. The state has been ranked 48 out of 50 by the U.S. Department of Education for the percent of graduating seniors actually earning a diploma (78.4% in 2016), and has been 2 years in a row. Lincoln County is about the same, with 77.8% of would-be graduates actually earning a diploma during the same year.

Dropout rates are a similar topic, but are not simply the opposite of graduation rates. The Oregon Department of Education defines a dropout as an individual who was enrolled for 9th, 10th, 11th, or 12th grade; did not graduate; did not receive an alternative degree such as a GED; and officially withdrew from school. In the 2015-2016 school year, Lincoln County experienced a high school dropout rate of 54 students per 1,000 9th–12th graders, above the Oregon rate of 39 per 1,000 high school students. The dropout rates for Lincoln County and Oregon are shown in Figure 4.6.
Within the county, the high school dropout rate for minority youth populations is generally higher compared to the total dropout rate. This is particularly true in Lincoln County for Native American students (7.2 percent), although students who identify as white have the next-highest rate of (4.6 percent). While other race/ethnicity dropout rates may be lower, it is important to remember that there are few students in many of those categories in Lincoln County. Homeless students in Lincoln County had a dropout rate of 11.1 percent in the 2016-2017 school year and students with disabilities had a dropout rate of 5.6 percent.\textsuperscript{149}

In 2011, Oregon set a goal of 40-40-20, meaning that by 2025, 40 percent of Oregonians age 25 and above would have a bachelor’s degree or higher, an additional 40 percent would have an associate’s degree, and the remaining 20 percent would have graduated high school. This translates to a goal of 100 percent of Oregonians having a high school degree or higher and 80 percent having an associate’s degree or higher.\textsuperscript{150} As of 2016, approximately 89 percent of Lincoln County residents 25 and older had completed high school or GED equivalent, 36 percent had an associate’s degree or some college, and 23 percent had a bachelor’s degree or higher (Figure 4.7). The proportion of individuals who have a bachelor’s degree or higher in Lincoln County is significantly lower than the overall state percentage of 31 percent.\textsuperscript{151}
Figure 4.7: Rates of educational attainment in Lincoln County, 2012-2016

Figure notes: The educational attainment proportions are out of the population of residents age 25 and older, approximately 35,600 residents.
Source: U.S. Census Bureau American Community Survey

Education among Oregon Health Plan Members

Differences in education between Oregon Health Plan members and the general state population are quite clear. According to the 2014 MBRFSS survey, 23.3 percent of OHP adults did not receive a high school diploma or GED (compared with 11.1 percent in the general population). The same study revealed that 12.8 percent of those on OHP had graduated college, less than half of those in the general population (26.5 percent).152

Food Security

Food security is defined as having enough to eat, and being able to purchase or obtain healthy food in socially acceptable ways.153 Adequate nutrition is particularly important for children, as it affects their cognitive and behavioral development. Children from food insecure, low-income households are more likely to experience irritability, fatigue, and difficulty concentrating on tasks, especially in school, compared to other children.154

Feeding America, a national nonprofit that monitors food security, estimates that 27 percent of children in the region are living in food insecure households, more than one out of every four children.

Oregon Department of Education data report nearly 60 percent of Lincoln County K-12 students were eligible for free or reduced lunch during the 2017-2018 school year. The percentage of students eligible for free or reduced lunch varies significantly from school to school within and
between the counties, from 48 percent to 88 percent of students attending schools with at least 100 students (Table 4.5).\textsuperscript{155} It is important to note that the school district currently offers all students free breakfast and lunch.\textsuperscript{156} Data regarding eligibility are an important context, however, in the event that the school district is unable to continue this benefit in the future.

Students whose family incomes are below 130 percent of the federal poverty level ($31,525 annually for a family of four) are eligible for free lunches, and students whose family incomes lie between 130 and 185 percent of the federal poverty level (between $31,525 and $44,863 annually for a family of four) are eligible for reduced-price lunches.\textsuperscript{157,158}

**Table 4.5: Percentage of children eligible for free and reduced-price lunch, 2017-2018.**

<table>
<thead>
<tr>
<th>School district</th>
<th>Eligible for free lunch</th>
<th>Eligible for reduced-price lunch</th>
<th>Percent of total students eligible for free or reduced-price lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln County School District</td>
<td>2,855</td>
<td>360</td>
<td>58.2%</td>
</tr>
<tr>
<td>Oregon</td>
<td>231,061</td>
<td>41,042</td>
<td>47.5%</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education, Report: Students Eligible for Free/Reduced Lunch

An analysis of factors\textsuperscript{*} determining food insecurity suggests that in 2016, 15 percent of the Lincoln County population, or nearly 6,940 individuals, were residing in households that were food insecure. Among those who were food insecure, 19 percent earned incomes above 185 percent of the federal poverty level, making them ineligible to receive government assistance programs (Table 4.6). The childhood food insecurity rate was higher, at 24.5 percent of the children in the region. Of the children living in food insecure households in the region, it is estimated that 26 percent of these children are likely ineligible for federal nutrition assistance programs as they live in households with incomes above 185 percent of the federal poverty level.\textsuperscript{159}

**Table 4.6: Food insecurity in Lincoln County, the LBL Region, and Oregon, 2016**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of food insecure individuals</th>
<th>Percent of population that is food insecure</th>
<th>Percent of food insecure population ineligible for benefits *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln County</td>
<td>All residents</td>
<td>6,940</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>1,970</td>
<td>25%</td>
</tr>
<tr>
<td>LBL Region</td>
<td>All residents</td>
<td>37,690</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>11,150</td>
<td>22%</td>
</tr>
<tr>
<td>Oregon</td>
<td>All residents</td>
<td>527,370</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Children</td>
<td>173,780</td>
<td>20%</td>
</tr>
</tbody>
</table>

* Percent ineligible figure is produced by modeling and is an estimate

Source: Feeding America

\* Factors include indicators of food insecurity such as poverty, unemployment, median income; food budget shortfalls; a cost of food index; and national average meal costs.
Supplemental Nutrition Assistance Program Participation

The Federal Supplemental Nutrition Assistance Program (SNAP) is the largest domestic food and nutrition assistance program for low-income Americans. U.S. households must meet certain eligibility criteria, such as income, to receive benefits. As of 2015, an estimated 23 percent of all households (4,764 of 20,434 households) in Lincoln County received SNAP benefits, compared to 19 percent in Oregon. Of the households in Lincoln County that received SNAP benefits, 51 percent (2,194 households) had an income in the past 12 months below poverty level, and 49 percent (2,570 households) had an income in the past 12 months at or above poverty level. Of the 77 percent of households (15,670 households) that did not receive SNAP benefits, 7 percent (1,130 households) were below the poverty level. Furthermore, 33 percent of benefit-receiving households that received Food Stamps/SNAP benefits during this time supported children under the age of 18. This rate is lower than Oregon’s 45 percent.

Women, Infants, and Children (WIC)

WIC is a public health nutrition program that is vital to the health of women, infants, and children across Oregon. The WIC program provides health and nutrition services to pregnant and breastfeeding women and children ages 0 to 5 that have a household income less than 185 percent of poverty guidelines. Overall in 2017, a total of 1,166 families, or 1,979 individuals, were served by WIC in Lincoln County; 72 percent of these individuals were infants and children under five, and 28 percent were pregnant, breastfeeding, and post-partum women. Approximately 52 percent of pregnant women in Lincoln County were served by WIC, as well as 71 percent of all working families in the county.

Emergency Food Support

Food Share of Lincoln County, the local food bank system, distributes food to 19 partner agencies located throughout Lincoln County. Partner agencies include food pantries, meal sites (soup kitchens), backpack programs, Head Start schools, produce programs, and youth and senior outreach. Food Share of Lincoln County and its network of programs distributed over one million pounds of food from July 2016 through June 2017 and served over 4,000 individuals each month.

Food Security among Oregon Health Plan Members

As previously mentioned, about 15 percent of the county’s population is food insecure. Among Medicaid recipients in the Linn-Benton-Lincoln region, this number climbs to 50.7 percent. That value is also slightly higher than the reported 48.6 percent for Oregon’s state-wide Medicaid population. About 24.7 percent of the region’s OHP members reported hunger, compared with 22.3 percent of members across the state.
Housing and Home Ownership

Housing is an important part of the built environment and another key factor contributing to good health. Older housing in particular can present multiple threats to health, including the presence of mold, asbestos, lead-based paint, and lead solder in plumbing and in the soil.

Poor quality and inadequate housing contribute to health problems such as infectious and chronic diseases, injuries, and poor childhood development. Indoor allergens and damp housing conditions play an important role in respiratory conditions including asthma, which currently affects over 20 million Americans, and is the most common chronic disease among children. Approximately 40 percent of diagnosed asthma among children is believed to be attributable to residential exposures.

Residential exposure to environmental tobacco smoke, pollutants from heating and cooking with gas, volatile organic compounds, and asbestos have been linked with respiratory illness and some types of cancer. People who have difficulty paying rent, mortgage, or utility bills are less likely to have an established source of medical care, more likely to postpone treatment, and more likely to use the emergency room for treatment. Families who lack affordable housing are more likely to move frequently. Residential instability is associated with emotional, behavioral, and academic problems among children, and with increased risk of teen pregnancy, early drug use, and depression during adolescence.

Housing Affordability

Affordable, quality housing provides shelter that is safe and healthy for all people. Housing that costs more than 30 percent of household income is considered to be “unaffordable.”

Figure 4.8 below shows the distribution of Lincoln County residents who rent and own their homes.
Figure 4.8: Home ownership in Lincoln County, 2012-2016

Figure notes: There are approximately 20,400 households in Lincoln County.
Source: U.S. Census Bureau, American Community Survey, Table S2502

Table 4.7 shows the similarities in housing affordability between Lincoln County, the region, and Oregon. Similar to Oregon, 52 percent of renters in Lincoln County spend 30 percent or more of household income on housing rent. Of home owners with mortgages, 42 percent spend 30 percent or more of household income on housing, compared to 36 percent in Oregon. Of home owners without mortgages in Lincoln County, 15 percent spend 30 percent or more of household income on housing, the same proportion as across Oregon.167

Table 4.7: Occupants with housing cost burden more than 30 percent of income, 2012-2016

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent with housing cost burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln County</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>38%</td>
</tr>
<tr>
<td>Renters</td>
<td>52%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>42%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>59%</td>
</tr>
<tr>
<td>LBL Region</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>30%</td>
</tr>
<tr>
<td>Renters</td>
<td>55%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>35%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>62%</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>32%</td>
</tr>
<tr>
<td>Renters</td>
<td>54%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>36%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>66%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey, 5-year estimates, Table DP05
Home Values

Higher home values can support health, as more valuable homes tend to have design or construction features that support health, such as adequate insulation and weather-proofing. Homes are also a major source of wealth, which helps people afford health care and other health promoting activities. However, high median home prices can also signal inequality or housing insecurity in a community. Unaffordable housing has strong negative effects on health for many of the same reasons that stable housing promotes health.

Home values as reported by the U.S. Census Bureau, American Community Survey (ACS), tend to be out of date. Currently this means that home values are underestimated by ACS data. Zillow.com, a housing website, tracks home values based on recent sales and other assessments, and produces more contemporary estimates. Zillow.com currently estimates the median Lincoln County home value to be $235,400 (as of March 2018), compared to the ACS estimate of $216,300. The median list price of houses listed on Zillow in Lincoln County in March 2018 was $337,750. Figure 4.9 shows the change in home values and list prices in Lincoln County over the past 8 years.

Figure 4.9: Median list price and home value of owner-occupied housing units, Lincoln County, 2010-2017

Source: Zillow.com historical housing data for Lincoln County

Homelessness

The Oregon’s Ending Homelessness Advisory Council defines homelessness as being without a decent, safe, stable, and permanent place to live that is fit for human habitation. Understanding homeless populations is a daunting challenge for public health. Even counting the number of people experiencing homelessness is a difficult task, because they tend to lack a fixed address or living location, and many individuals change homeless status over time. Each January, Oregon Housing and Community Services requires communities to conduct a point-in-
time count of homeless populations. This snapshot of the homeless population is limited in scope and depth. Canvassers visit shelters, transitional housing, and known homeless encampments. Individuals staying with other people out of economic necessity are not counted, nor are homeless people who are in areas not covered by the canvassing. Furthermore, the one-night count misses any individual who is homeless at other points during the year. Notwithstanding these limitations, the point-in-time estimates have the benefit of being a consistent approach across years and geographies, and therefore may give some insight into the homeless community in each county.

In 2011, the Lincoln County point-in-time survey counted 41 individuals experiencing homelessness (Table 4.8). All of these individuals were in shelters or transitional housing. There were no street counts conducted in the region in 2011. Fifty-nine percent of the homeless population was female. In Lincoln County, men on average spent 20 months homeless, while women spent 7 months.

The most recent data on homeless populations is from 2017 (Table 4.8). In 2017, there were 180 individuals identified in the January point-in-time survey, an increase of 440 percent in six years. However, in 2017 the count included unsheltered individuals, which may indicate a larger canvassing effort as well as an increase in the homeless population.

In both 2011 and 2017, approximately 44 percent of the recorded individuals were members of families, both adults and children, but that proportion decreased to approximately 26 percent of recorded homeless individuals in Lincoln County being members of families (Table 4.8).

<table>
<thead>
<tr>
<th></th>
<th>2011 Lincoln County</th>
<th>2011 LBL Region</th>
<th>2017 Lincoln County</th>
<th>2017 LBL Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total count</td>
<td>41</td>
<td>283</td>
<td>180</td>
<td>653</td>
</tr>
<tr>
<td>Sheltered count</td>
<td>41</td>
<td>273</td>
<td>113</td>
<td>278</td>
</tr>
<tr>
<td>Unsheltered count</td>
<td>0</td>
<td>10</td>
<td>67</td>
<td>375</td>
</tr>
<tr>
<td>Male</td>
<td>16 *</td>
<td>171 *</td>
<td>105</td>
<td>411</td>
</tr>
<tr>
<td>Female</td>
<td>24 *</td>
<td>111 *</td>
<td>81</td>
<td>241</td>
</tr>
<tr>
<td>Individuals</td>
<td>23</td>
<td>75</td>
<td>139</td>
<td>489</td>
</tr>
<tr>
<td>Family members</td>
<td>18</td>
<td>208</td>
<td>46</td>
<td>103</td>
</tr>
</tbody>
</table>

Table notes: * indicates that cells do not sum to total
Source: Oregon Housing and Community Services, 2011, and Community Services Consortium, 2017

Another source for recording the number of homeless individuals is the set of statistics gathered by federally qualified health centers (FQHCs). Among the data that FQHCs are required to collect is housing status, which they report each year to the federal government. According to the Bureau of Primary Health Care, a patient’s status should be recorded as homeless if the patient was residing in a shelter, in transitional housing, or on the street; if the patient was doubled up or temporarily living with others; had been homeless within the last 12 months; or resided in a housing program targeted to homeless populations. Compared with the one-night counts, FQHCs may identify homeless individuals who were not staying in shelters or in canvassed encampments or who were homeless at other times throughout the year.
However, only those individuals who were able to seek out medical care at an FQHC and chose to do so were identified. Nevertheless, the records provided by the FQHCs indicate a much broader level of homelessness than the one-night counts. In 2016, the Lincoln County Health and Human Services FQHC served approximately 240 homeless patients, or 4.9 percent of the total population served.169

Student homelessness is a recurring problem in Oregon as well. Across the state, an increasing number of Oregon’s K-12 public school students are homeless at some point during the school year. Students experiencing homelessness are more likely to drop out of high school in Lincoln County, with about 11 percent of students in such circumstances dropping out of school. Homelessness among students has more than doubled since the 2003-2004 academic school year. About 12 percent of students in grades K-12 experienced homelessness during the 2016-2017 school year in Lincoln County (Table 4.9).

Lincoln County Schools is attempting to combat this challenge by trying to eliminate the barriers to attending school that often plague students who do not have stable housing. The Homeless Education and Literacy Project, also known as HELP, aids by providing such things as school supplies, tutoring, clothes, and referrals to other resources.170

Table 4.9: Homeless students grades K-12 in Lincoln County and Oregon, 2016-2017

<table>
<thead>
<tr>
<th>School District</th>
<th>Number of students in grades K-12 experiencing homelessness</th>
<th>Proportion of student body experiencing homelessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln School District</td>
<td>644</td>
<td>11.8%</td>
</tr>
<tr>
<td>Oregon</td>
<td>--</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education, 2018

Housing and Homelessness among Oregon Health Plan Members

There is a significant disparity in home ownership between Oregon’s Medicaid and non-Medicaid populations. About 21.5 percent of OHP adults own their home, contrasted with the 64.7 percent reported by the state’s general population. In addition, a little over 1 percent of the state’s OHP members are homeless. 171

Conclusion

Socioeconomic factors, income and wealth, form the base of Frieden’s Health Impact pyramid (p. 7)172 and are powerful determinants of health. Furthermore, socioeconomic factors that are affected by income and wealth, such as education, food security, and housing, in turn have powerful effects on a person’s health. Social determinants of health interact with individual characteristics such as age, and environmental factors such as air quality and proximity to healthy or unhealthy built environments. People with a strong set of social resources are more resilient to challenges to their health, and are better able to navigate the health care system. In the next chapter on access to medical care, many of the disparities seen in social determinants of health recur when people try to access health care services.
Chapter 5
Access to Health Services

Access to medical care is important to physical, mental, and social health. The Institute of Medicine (IOM) defines access to health care as "the timely use of personal health services to achieve the best health outcomes," with a special focus on the importance of equity of health care usage and health outcomes among and across different groups of people. The ability to access health care can impact other areas of life, including employment, education, family life, nutrition, and emotional outlook, which play major roles in one’s overall health status. Scarcity of health services, rising health care costs, lack of insurance coverage, and other limiting factors create barriers that prevent individuals and families from accessing quality health care. Persistent or cumulative barriers to health care lead to worsening health conditions, preventable hospital visits, limited use of preventive care, and other negative health outcomes.

According to the Agency for Healthcare Research and Quality (AHRQ) 2013 National Healthcare Disparities Report (NHDR), there are three steps to attaining adequate access to health care:

• Gaining entry into the health care system,
• Getting access to sites of care where patients can receive needed services, and
• Finding providers who meet the needs of individual patients and with whom patients can develop a relationship based on mutual communication and trust.

Healthy People 2020 cites both the IOM and AHRQ documents on access to health care, and divides access into four major components:

• **Insurance Coverage and Affordability** – Health insurance coverage is highly emphasized by current policy in the United States as a means to affordable health care services.

• **Service Availability** – Having a usual and ongoing source of care, especially a primary care provider, leads to better health outcomes. Existence of preventive services and emergency medical services are also key.

• **Workforce** – Health care centers must be staffed with appropriate employees in order for people to access health care. Healthy People 2020 focuses on tracking the number of primary care providers.

• **Timeliness of Care** – Timeliness is defined as receiving care quickly after a need is recognized. This can be measured both in appointment and office wait times as well as the time lag between identifying a needed service (such as a test or course of treatment) and receiving it.
It is important to examine medical care access and capacity in the larger context of overall factors that contribute to health. “Health care is necessary but not sufficient for improved health; in fact, health care accounts for only about 10–20 percent of health outcomes, according to some experts.” Social determinants of health, the upstream factors listed in Chapter 4, are responsible for a much larger percentage of health outcomes than medical care alone. People need a healthy and accessible environment to achieve good health. This includes the broader community context, as well as the characteristics of the local health care system itself. Both a strong health system and good population health are needed, and can be mutually reinforcing to achieve optimal health in a community.

Many of the forces that shape the opportunity for better health in Lincoln County — education, employment, and transportation, for instance — can also affect access to medical care. The Health Impact Pyramid (illustrated in Chapter 1) provides a helpful model for recognizing some of those larger forces. Upstream factors play a large role in any individual’s ability to make healthy choices and decisions, and this holds true for accessing medical care. For example, the ratio of providers to patients in a region may be considered excellent, but a prospective patient may work during clinic hours, find transportation difficult to navigate, or be unable to find childcare options during the time of the visit. While having access to good doctors and health care facilities are visible indicators of access to medical care, there are numerous other factors that influence opportunities for health. This chapter will highlight recent data on the four major components discussed above.

Demographic Differences in Access to Medical Care

Some populations face increased barriers to accessing care and receive poorer quality care when they get it. In its 2011 reports on health care quality and disparities, the Agency for Healthcare Research and Quality (AHRQ) finds that, at a national level, low income individuals and people of color experience more barriers to care and receive poorer quality care. Moreover, other research shows that individuals with limited English proficiency are less likely than those who are English proficient to seek care even when insured. Research also finds differing patient experiences and levels of satisfaction by race, gender, education levels, and language.

Health Insurance Coverage

Lack of adequate health insurance coverage is often a major barrier to medical care. People who are uninsured or underinsured receive less medical care than their insured counterparts. Inadequate coverage creates a financial barrier between a patient and needed medical care services. People without health insurance are less likely to know about or seek out preventive services, and are more likely to have new and worsening health problems, and shorter lifespans. In general, even when uninsured or underinsured persons receive medical care, care is often postponed (due, in part, to concerns about cost). These individuals suffer significantly worse health outcomes than those who have adequate medical coverage.
Recent changes in policy on both the national and state level have altered the landscape of health care and health insurance access in the past five years. The Affordable Care Act (ACA), enacted on a federal level in 2010, made it illegal to deny coverage due to pre-existing medical conditions, mandated health coverage for most individuals, expanded Medicaid funding and coverage, and subsidized health insurance through exchanges for lower income individuals,* among other provisions. Most of these provisions went into effect by 2014. As part of the ACA, Oregon accepted federal funding to expand Oregon Health Plan (OHP) membership, setting targets for enrollment and expanding the variety of services (e.g. dental services).

Statewide, membership in OHP increased 58 percent over less than 4 years, from 627,000 members in June 2013 to 962,000 members in November 2017. Lincoln County enrollment has swelled from 8,700 to 13,900 over the same time period. In addition to OHP expansion, 80 percent of the consumers registered to the new health care exchange received tax credits and/or cost-sharing subsidies as of April 2014.

Insurance coverage rates in the region, and across the nation, have risen recently, largely due to the ACA and other health care transformation policies. The regional insurance coverage rate in 2012 was 76 percent, rising to 97 percent in 2014. As of 2014, 96 percent of Lincoln County, 95 percent of Benton County, and 98 percent of Linn County residents have insurance. These rates include adults age 65 and older, which is important because that age group has insurance coverage rates of close to 100 percent due to Medicare.

**Uninsured Rates**

Insurance coverage rates have increased over the past eight years, and corresponding uninsured rates have decreased. Figure 5.1 displays this trend for those under age 65.

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* Health insurance exchanges are online, state or federally run marketplaces where an individual can compare plans from different insurance companies and purchase individual health insurance. Individuals with a qualifying level of income can receive federal subsidies to help pay premiums on health insurance plans.
Figure 5.1. Proportion of individuals aged 0 to 64 without health insurance in Lincoln County, the LBL Region, and Oregon, 2010-2015

Figure notes: There are approximately 35,000 individuals in Lincoln County under age 65. The data represents individuals who lacked health insurance at the time the data was collected. Individuals age 65 and older are excluded from this figure.
Source: U.S. Census Bureau, Small Area Health Insurance Estimates

Because of the rapidly shifting health care and health insurance landscape, local data points that accurately capture these changes are still forthcoming. With that in mind, data from before the ACA expansion showed major disparities among the population based on age, race, and income. Examining these disparities across the region can help provide a baseline for future comparisons with disparities which exist after ACA expansion once the data are available.

Uninsured rates differed greatly between age groups before the ACA. In 2015, the uninsured rate among children across the region was lower than the rate for working-age adults (Table 5.1).\textsuperscript{188} Overall, in both age groups, county uninsured rates were somewhat higher compared to the rest of Oregon. Across the county and state, less than one percent of individuals 65 and older lack health insurance.

Table 5.1: Uninsured rates in Lincoln County and Oregon, 2012-2016

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18 years old</td>
<td>8.9 %</td>
<td>4.7 %</td>
</tr>
<tr>
<td>18 to 64 years old</td>
<td>21.8 %</td>
<td>14.9 %</td>
</tr>
<tr>
<td>65 years old and older</td>
<td>0.2 %</td>
<td>0.5 %</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey 5-year estimates

Insurance coverage rates were also pronounced across racial and ethnic categories, employment status, and citizenship status. In 2012-2016 in Lincoln County, approximately 32 percent of Latino individuals were uninsured, compared to 12 percent of the White population. Additionally, over 43 percent of the unemployed are uninsured, compared to 21 percent of those currently employed, and 8% of individuals not in the labor market. Foreign born and non-
citizens have very high uninsured rates, at 46 percent and 63 percent, respectively.\textsuperscript{189} Insurance coverage data are not available for undocumented immigrants, and undocumented immigrants are excluded from both Medicaid and the health insurance exchange.\textsuperscript{190} However, the Oregon Legislature passed a “Cover All Kids” bill during the 2017 legislative session that guarantees that all individuals under the age of 18 up to 300% of the Federal Poverty Level will be covered by Medicaid, regardless of immigration status.

Among the employed, those working less than full time year-round were uninsured at a higher rate (32 percent) compared to those working full time year-round (16 percent). Residents earning less than 200 percent of the federal poverty level are more likely to be without insurance coverage than those with higher incomes, 18 percent versus 12 percent.\textsuperscript{191}

The implementation of the Affordable Care Act has had a major impact on insurance coverage rates in the region as Figure 5.1 (previous page) demonstrates. However, even given the growth in insurance coverage rates over the past 5 years, insurance gaps and inequalities remain, especially for people of color, individuals living in rural areas, and low income workers.\textsuperscript{192} As data for recent years become available, it will be important to measure these disparities.

**Health Insurance among Children**

Examining insurance coverage rates among children up to age 18 (Figure 5.2) shows a gradual increase in all three counties in the region from 2006 to 2015. As of 2015, all three counties had an insurance coverage rate of 92 to just over 95 percent for children under the age of 18.

**Figure 5.2. Proportion of children age 0 to 17 without health insurance in Lincoln County, the LBL Region, and Oregon, 2006-2015**

![Figure 5.2. Proportion of children age 0 to 17 without health insurance in Lincoln County, the LBL Region, and Oregon, 2006-2015](attachment:10.png)

*Figure notes: There are approximately 8,000 children age 0-17 in Lincoln County. The data represent children without coverage at the time the data were collected. Source: Kids Count Data Center*
Insurance Types and Sources

People secure insurance from many different sources, including employer-based insurance, private insurance and public insurance. Figure 5.3 illustrates the distribution of the type of health insurance coverage among tri-county residents between 2012-2016; with employer-based health insurance constituting the majority of coverage. The Oregon Health Plan provides health care coverage to low-income Oregonians. Medicare is the federal health insurance program for people who are 65 or older, certain younger people with disabilities, and people with end stage renal disease.193

Figure 5.3: Percent of population covered by different insurance types in Lincoln County, 2012-2016

Figure notes: Two or more insurers includes individuals with two or more private insurers, two or more public insurers, and other combinations. All other categories represent individuals with only one source of insurance. The population underlying this data is approximately 44,000.
Source: U.S. Census Bureau, American Community Survey, 5-year estimates

Medicare

Medicare provides insurance to 11,200 Lincoln County residents over the age of 65 and 1,700 younger Lincoln County residents with permanent disabilities (about 29 percent of all Lincoln County residents).194 The program helps pay for primary care, prescription drugs, home health care, hospitalization, and other health services. Part of Medicare is funded by a payroll tax, and other parts are funded by premiums paid by Medicare recipients. Medicare does not pay for all services and supplies that are needed by older adults and individuals with disabilities. For example, Medicare does not pay for routine dental care and does not cover long-term care. Most Medicare recipients have additional coverage to make up these gaps, whether private insurance or public insurance such as Medicaid.195 Seventy-two percent of Lincoln County residents who have Medicare have another source of health insurance. 196
The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). Eighty-nine percent of OHP members in Lincoln County are enrolled with IHN-CCO. The other 11 percent of the county’s OHP membership are enrolled in another CCO, Managed Care, or Fee for Service (Figure 5.4).\(^\text{197}\)

**Figure 5.4: Percent of OHP members enrolled in Coordinated Care Organizations, Managed Care or Fee for Service in Lincoln County, November 2017**

![Circle chart showing enrollment percentages](attachment:chart.png)

*Figure notes: There are approximately 14,000 OHP members in Lincoln County, out of 44,000 residents. Source: OHA Office of Health Analytics, OHP Enrollment*

The OHP population increased greatly from 2010 to 2017. In 2010, approximately 6,700 Lincoln County residents were OHP members. In 2017, there were 14,000 members, an increase of over 100 percent from 2010.\(^\text{198,199}\)

**Cost of Medical Care**

Insurance coverage is only part of the cost of medical care. Additional costs are referred to as cost-sharing and include costs such as copayments, coinsurance, and deductibles. Health reform legislation has reduced financial burdens for many people with a lower income or significant health care needs. Nevertheless, one in three Americans say they have put off getting medical treatment that they or their family members need because of cost.\(^\text{200}\)

According to the most recently available data (from 2006 to 2012), 19 percent of adults in Lincoln County reported they did not see a doctor in the past 12 months because of cost.\(^\text{201}\)

This is the fifth-highest percentage in the state, though there are 7 counties that were not
ranked due to lack of data. Benton County had the lowest percentage (10 percent) in Oregon and Linn County’s was 17 percent.

**Cost of Health Care Services**

Oregon has one of the highest hospital adjusted expenses per inpatient day when compared with all 50 states. The average cost per inpatient day in Oregon is $3,368 as of 2015, while the average cost across the United States is $2,271. Data that is specific at the county or tri-county level is not publically available.

**Cost of Insurance Premiums**

When insurance is purchased through an employer, the cost of the premium may be shared by both the employee and the employer. Premium costs are set by the insurer, but the employer decides how much of the cost to pass on to their employee. Individuals who do not purchase insurance through an employer can purchase insurance through the Marketplace Exchange or directly through a private insurance company. The ACA also provides subsidies to reduce premiums, thus making options more affordable for consumers when bought in the marketplace. Regardless of where insurance is purchased, costs have steadily climbed over time. Since at least as far back as 1970, growth rates of health spending per capita have exceeded the rate of growth for GDP per capita. Within the U.S. between 2002 and 2012, the average annual premium for family coverage through an employer nearly doubled from $8,003 to $15,745. Oregon insurance premiums are slightly below the U.S. average for insurance premiums. In 2015, the average cost of employer-based family insurance premiums in the U.S. was $17,322 annually; the average cost in Oregon was slightly lower at $17,141.

Table 5.2 provides a snapshot of insurance premium costs for Oregon. It includes average monthly health care insurance premium costs paid by employee and employer, as well as the monthly cost for an individual purchasing non-employer provided insurance through the health insurance exchange. Individuals purchasing private, non-employer based coverage in Oregon are paying considerably more than individuals who purchase insurance through an employer.

**Table 5.2: Cost of insurance coverage in Oregon, 2015**

<table>
<thead>
<tr>
<th>Source of insurance</th>
<th>Type of coverage</th>
<th>Individual/Employee contribution to annual premium</th>
<th>Employer contribution to annual premium</th>
<th>Total annual premium cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer-purchased insurance</td>
<td>Individual</td>
<td>$ 898</td>
<td>$ 4,924</td>
<td>$ 5,822</td>
</tr>
<tr>
<td>Employer-purchased insurance</td>
<td>Family</td>
<td>$ 4,729</td>
<td>$ 12,412</td>
<td>$ 17,141</td>
</tr>
</tbody>
</table>

*Source: Kaiser Family Foundation: State Health Facts*
Comparable data for individual or family marketplace plans are not available, but in 2013, an individual marketplace-purchased plan cost $2,460.\footnote{206}

Looking at the average cost for insurance premiums does have limitations due to the number of variables that influence costs for insurance premium (e.g., age, gender, health risk factors, zip code). However, it can give a general picture of the financial burden to both employers and employees for their health insurance coverage.

**Medical Care Hardship Due to Cost**

Uninsured Americans are still the most likely to report having put off medical treatment because of cost. However, even among those who have insurance, cost can be a barrier to care. Data from national studies report that families with private, non-employer sponsored insurance and with low income earnings face barriers to accessing services.\footnote{207}

National studies have found a number of challenges to meeting premiums and deductibles for low and middle income families with insurance, including the fact that households with the lowest incomes (100 percent to 249 percent FPL) lack resources to meet health insurance cost sharing demands, such as deductibles, co-pays, and co-insurance.\footnote{208} The majority of these families (68-80 percent) surveyed by the Kaiser Family Foundation in 2013 reported that they could not afford to cover the cost of their insurance deductible.\footnote{209} Similarly, among families earning 250-400 percent of the federal poverty level, between one third and one half reported that they were unable to afford the out-of-pocket deductible limits.\footnote{210}

Findings from the national studies reported above suggest that households in the region with insurance coverage may also experience significant barriers to health care services due to cost of care.

**Access Capacity**

Primary care, mental health, and oral health are foundational to a comprehensive offering of medical care for a population. Examining the table below can help to provide insight on the number of providers in each of these categories. It displays one way to measure access capacity: the number of residents per health care provider.

While primary care provided by physicians is important to the quality of the health care system, as the Robert Wood Johnson Foundation writes,

> Physicians are not the only providers of primary health care. Other professionals can serve as usual sources of routine, preventive care including nurse practitioners (NP), physician assistants (PA), and clinical nurse specialists. The Health Services Research Administration estimates that the primary care NP and PA workforces are projected to grow far more rapidly than the physician supply in the next ten years, and could help alleviate shortages as demand increases.\footnote{211}
One reason for the expected rapid increase in the supply of NPs and PAs is that those qualifications typically take less time to obtain than a physician’s Doctor of Medicine (MD) or Doctor of Osteopathy (DO) license. Other primary care providers are especially vital in rural areas that may not have the population density to support a full-time physician. Many rural communities in the region have clinics staffed by nurse practitioners and other primary care providers. In the State of Oregon, NPs have independent prescribing authority, while PAs must abide by the practice agreement of a supervising physician.212

Table 5.3 below shows the number of residents per provider for primary care physicians and other types of providers. The numbers assume that the residents would be equally distributed across providers within a given provider type. Therefore, a smaller number of residents to providers indicates more capacity. The table shows that there is over 2,000 residents per primary care physician, nearly twice the number when comparing availability state-wide. This is partially made up with a lower ratio for NPs and PAs, but this concern has to be considered in the context of Lincoln County. In Chapter 2, the population pyramid illustrated that the county’s population is heavily slanted toward the older age groups who need more care. Even if the ratio of residents to primary care providers were to decrease to a level matching the state, the capacity would still lag behind due to the county’s higher need.

Table 5.3: Number of residents per provider in Lincoln County, the LBL Region, and Oregon, 2018

<table>
<thead>
<tr>
<th>Provider type</th>
<th>Number of residents per provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lincoln</td>
</tr>
<tr>
<td>Primary care physicians</td>
<td>2,050</td>
</tr>
<tr>
<td>Other primary care providers</td>
<td>976</td>
</tr>
<tr>
<td>(non-physicians)</td>
<td></td>
</tr>
<tr>
<td>Mental health providers</td>
<td>300</td>
</tr>
<tr>
<td>Dentists</td>
<td>1,590</td>
</tr>
</tbody>
</table>

Table notes: Other primary care providers include nurse practitioners, physician assistants, and clinical nurse specialists
Source: County Health Rankings

Having a usual primary care provider (PCP) is associated with improved health outcomes, increased health equity, and lower health care costs. Effective PCPs work to maintain sustainable relationships with patients, connect them with additional health resources in the community, and coordinate their care. Patients with ongoing access to PCPs and other health care services have better relationships with their providers and are more likely to receive appropriate care than patients without a regular health care provider.213

Behavioral/mental health services include an array of resources including assessments, individual and group therapy, case management, and other supportive therapies for people with a mental illness and/or addictions. A continuum of behavioral health services is available in Linn, Benton, and Lincoln counties. Included in these services are acute care inpatient facilities.
for adult psychiatric patients, specialty mental health services for adult and child mental health and substance use disorders, residential services, and therapeutic services for clients with mild or moderate behavioral health needs. However, many residents have difficulty accessing these services due to limitations in geography, income, cultural competency, or time.

The Benton, Lincoln, Linn Regional Oral Health Coalition has recently completed a needs assessment which provides a more comprehensive look and analysis of oral health needs in the region.\textsuperscript{214} Regionally there are about 1,730 residents for each oral health provider. This ratio is worse than the ratio in Oregon, which has about 1,360 residents per provider. Additionally, there is less variation between counties compared to primary care providers. The oral health provider ratios range from 1,600 to 1,850 residents per provider across the counties.

**Oregon Health Plan Access to Care**

According to public data from IHN-CCO, as of 2017 there are 43 providers practicing in Lincoln County who accept Oregon Health Plan insurance. There are additional providers in neighboring counties (Tillamook and Benton). The providers include primary care and medical specialties.\textsuperscript{215}

As mentioned above, patients having an established primary care team is critical for a variety of reasons. An important trend among Medicaid participants in the region is the percentage of members that are enrolled in a primary care home. In 2015, IHN was 2\textsuperscript{nd} in the state at 94 percent. This value dropped to just under 85 percent in 2016, the largest decline in the state.\textsuperscript{216}

For oral health, the percentage of OHP members in Lincoln County receiving any dental service in 2015 was 37 percent.\textsuperscript{217}

IHN-CCO members were also asked a series of questions in a CAHPS\textsuperscript{*} survey in 2015 to understand the access to care and quality of care they receive. Of those who responded:

- Eighty eight percent of respondents reported that they always or usually received immediate care when they needed it.
- Seventy nine percent of respondents reported that they always or usually got an appointment for routine care as soon as they needed it.
- Ninety percent of respondents reported that their provider always or usually explained things in a way that was easy to understand.
- Ninety percent of respondents reported that their provider always or usually listened carefully to them.
- Ninety percent of respondents reported that their provider always or usually showed respect for what they had to say.

\textsuperscript{*} CAHPS stands for Consumer Assessment of Healthcare Providers and Systems and is developed and maintained by the Centers for Medicare and Medicaid.
• Eighty seven percent of respondents reported that their provider always or usually spent enough time with them.
• Ninety five percent of respondents reported that their health plan’s customer service staff were always or usually courteous and respectful.218

Medical Services and Workforce

Medical needs of people who live, learn, work and play in Lincoln County are met through a variety of medical services, and residents of the county often travel to other counties for the care they need. Private group and individual practices offer primary care, dental, mental health, services for the developmentally disabled, specialty care, and alternative medicine services. Corvallis functions as a center for regional health care and enjoys unusually sophisticated health services for a community of its size. Newport and Lincoln City are the two main cities providing medical care in Lincoln County. The range of services include Samaritan Pacific Communities Hospital and Samaritan North Lincoln Hospital, both 25-bed critical access hospitals.219 Safety net providers serve a large proportion of low-income, uninsured, and rural populations through community health centers, rural health centers, school-based health centers, public health, and other community service organizations. Traditionally, safety net clinics focus on primary care and may also provide mental health, oral health, and pharmacy services.

Safety Net Services & Community Benefits

The health care “safety net” refers to the component of the health care system serving low-income and uninsured people. Safety net services are complemented by community funding, programs, and activities.220

Federally Qualified Health Centers* (FQHCs) and Free Clinics or “charity” clinics are the most common types of safety net clinics. FQHCs in the region provide primary care, mental/behavioral health, and oral health services. The local FQHC is the Lincoln Community Health Center and has two primary care sites: one in Newport and one in Lincoln City. Additionally, there are four school-based sites with locations in Newport, Lincoln City, Toledo, and Waldport. In addition, there are mental health and addiction locations in Newport and Lincoln City. Several auxiliary safety net providers also serve the region’s vulnerable populations, such as women and children, persons experiencing homelessness, and people who are HIV-positive.221

* FQHCs have a legal mandate or expressly adopted mission to serve all patients, regardless of ability to pay or documented status.
Cultural and Linguistic Competency

One measure of workforce competency is quantifying the level of cultural and linguistic ability among providers. The Center for Linguistic and Cultural Competency in Health Care (CLCCCHC) has created National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health and Health Care in order to “...improve health care quality and advance health equity by establishing a framework for organizations to serve the nation's increasingly diverse communities.” These standards are used by many health and medical care organizations as a tool in order to improve cultural competency. Cultural competency alone cannot address disparities in health, but is seen as a way to increase access for all patients and promote health equity.

Cultural competency, while often framed in terms of language barriers, includes more than having a provider who is able to speak the same language as the patient. By using the National CLAS Standards as a framework, it is clear that communication must include respect, engagement, and overall health literacy as well. This includes the ability to effectively communicate with and understand patients from diverse cultural, ethnic, or racial backgrounds, as well as those from at-risk populations such as LGBTQ, developmentally diverse, elderly, or those with chronic mental health issues.

An example would be low-income Latinos, and migrant and seasonal farm workers living in the tri-county region. They face multiple barriers to accessing culturally and linguistically appropriate health care and other related prevention, treatment, and disease self-management services. Many are employed in agriculture sectors that provide few or no employment benefits, or live in geographically isolated rural areas with limited access to public transportation. Cultural, linguistic, and literacy barriers further reduce access to needed information. Oregon’s Latino population is expected to grow by an anticipated 184 percent from 2010 to 2025, increasing the need for health services by this population.

Oregon Health Plan Race/Ethnicity Perceptions

Medicaid recipients’ perception of treatment when seeking health care is different among races and ethnicities. Overall, 6.4 percent of the state’s adult OHP population feel that their health care experience is worse than other races and ethnicities. This value grows to 7.8 percent when looking at the local region.

Health Care Professional Shortage Areas

Knowing the number of providers and types of services are very important for gauging the capacity and presence of a health care system. However, an understanding of the geographical distribution of these services helps paint a more accurate picture.
In addition to an overall shortage of health care providers to the general population, geographic distribution of providers can make it difficult for those with limited transportation to access services. Because rural areas of the region have either no or very few medical care providers, portions of the region are designated as geographic Health Care Professional Shortage areas (HPSA). Designation as an HPSA means that there is an increased risk of poor access to health professionals. Lincoln County qualifies as an HPSA for primary care, dental health, and mental health.

In addition to the geographic designation, the region also has population-based HPSAs for migrant seasonal farmworkers and low income individuals. Migrant seasonal farmworkers and their families are a particularly vulnerable subgroup of the Latino/Hispanic population.

Farmworkers have different and more complex health problems than those of the general population. Many of the Latino/Hispanic migrant seasonal farmworkers are documented but have undocumented family members with them. Many are employed in agriculture sectors that provide few or no employment benefits. While most are low income, many immigrants and migrant seasonal farm workers do not qualify for Medicaid due to their residency status or they are unable to access Medicaid due to language, transportation and cultural barriers.

**Emergency Responders**

Emergency Management Services (EMS) responses serve an important role in the community. According to the Oregon Office of Rural Health, the mean travel time to the nearest hospital for rural service areas is 23 minutes. Estimated travel time is calculated from the largest town/city in each of the rural service areas to the nearest town/city with a hospital. This is the protocol unless the city already has a hospital, in which case driving time is defaulted to 10 minutes. Seven areas in the region have a mean travel time to the nearest hospital which is greater than 23 minutes.

**Timeliness**

Once a health need is recognized, a health care system must be able to respond to this need in a timely manner. Measures of timeliness include the length of time it takes to get a medical appointment, wait time in doctors’ offices and emergency departments, and the interval between identifying a need for specific tests and treatments and actually receiving services.

According to Healthy People 2020, in 2013, 4.9 percent of the U.S. population reported delays in receiving necessary care. For families below 200 percent of the poverty line, the proportion increased to nearly 7 percent. Individuals enrolled in InterCommunity Health Network (IHN-CCO), the Coordinated Care Organization (CCO) for the region, reported that they received appointments and care when needed 85.5 percent of the time in 2015, up from approximately 82 percent of the time in 2011. When looking at Oregon CCOs as a whole, timeliness for children increased from 76.1 percent to 88.7 percent between 2011 and 2015; the percentage
of adults reporting timely care increased only 0.8 percentage points, from 79.4 percent to 80.6 percent.\textsuperscript{232}

There is evidence that type of insurance can affect the timeliness of care for an individual. A 2014 study, in which researchers called primary care providers to set up mock appointments, found significant disparities in the ability to successfully set up an appointment by insurance type.\textsuperscript{233} Callers representing themselves as privately insured in Oregon were able to secure a timely appointment 75 percent of the time, while those calling as Medicaid beneficiaries were only able to do so 37 percent of the time. It is possible that this disparity was magnified at the time of the study (calls were made in 2012 and 2013), as the health care transformation plan in Oregon created a new pool of Medicaid patients looking for services without expanding workforce capacity. However, this appears to be a similar trend across the nation.\textsuperscript{234} When the privately insured were turned down, the reason was largely because the doctor was not taking new patients. Conversely, 69 percent of Medicaid callers across multiple states were explicitly told their type of insurance was not accepted. Uninsured patients in Oregon were able to book an appointment 71 percent of the time; however that was with an up-front cash payment that averaged $176. Only 20 percent of uninsured appointments cost less than $75.\textsuperscript{235} In addition to causing economic hardships, expensive medical services can also cause delays in receiving medical care, as individuals have to seek alternative, less expensive sources of care, or wait until they have enough money to pay for care.

**Timeliness in Access to Care for the Oregon Health Plan**

Statewide, the percentage of OHP members who thought they received timely care was about 84 percent in 2016. This varies widely by race, ranging from 62.8 percent (Asian Americans) to 86.6 percent (American Indians or Alaska Natives) in adults. The IHN region 2016 results (82.5 percent) were down from the 2015 results (85.5 percent).\textsuperscript{236}

**Preventable Hospitalizations**

Preventable hospital stays are another way to measure timely health care. Measurement focuses on hospital admissions for conditions that might otherwise have been controlled in an outpatient setting. Effective management of chronic conditions (e.g. asthma, heart disease and diabetes) on an outpatient basis can help avoid hospitalizations. Likewise, timely outpatient care for conditions such as pneumonia or cellulitis can often prevent deterioration and hospitalization.\textsuperscript{237} Local data are available for Medicare enrollees and preventable hospital stays as of 2018. Lincoln County has a rate of 36 preventable admissions per 1,000 enrollees, compared to 34 per 1,000 in Oregon.\textsuperscript{238}

**Emergency Services**

Emergency services are an important indicator of timely access to medical care, as they represent the most time-sensitive and critical medical conditions. Samaritan Albany General
Hospital had approximately 29,000 emergency department visits (not unique patients) in 2015. Samaritan Lebanon Community Hospital had approximately 20,000 emergency department visits in 2015. The following table (Table 5.4) provides further statistics for Samaritan Pacific Communities Hospital and Samaritan North Lincoln Hospital regarding timely care in the emergency department in 2016-2017.

Table 5.4: Emergency room statistics for Lincoln County hospitals, 2016-17

<table>
<thead>
<tr>
<th></th>
<th>Samaritan North Lincoln Hospital</th>
<th>Samaritan Pacific Community Hospital</th>
<th>Oregon average for hospitals with similar characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median wait time patients spent in an emergency department before being seen by a medical professional</td>
<td>13 minutes</td>
<td>20 minutes</td>
<td>19 minutes</td>
</tr>
<tr>
<td>Median wait time for pain medication among emergency department patients with broken bones.</td>
<td>36 minutes</td>
<td>59 minutes</td>
<td>53 minutes</td>
</tr>
<tr>
<td>Percent of emergency department patients who left before being seen</td>
<td>2 %</td>
<td>3 %</td>
<td>3 %</td>
</tr>
</tbody>
</table>

Source: Hospital Compare, Medicare.gov

Transportation to Medical Care for Oregon Health Plan Members

Oregon Cascades West Council of Governments coordinates the Cascades West Ride Line, which provides transportation to and from non-emergent medical appointments for Oregon Health Plan and Medicaid members. Beginning from the expansion of Medicaid in 2013, the Ride Line has increased its service from 2,300 clients in the third quarter of 2013 to 3,300 clients in the second quarter of 2015. The total number of trips increased from 25,000 trips to 41,500 trips over the same time period.239

Oral Health Services

Oral health is a key indicator of wellbeing, and, especially among children, access to oral health services is important in creating a foundation of health. There is little county level data on access to oral health care.

The Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) asks new mothers and parents of two-year-olds about their dental care. In 2011, 52 percent of pregnant women visited the dentist during their pregnancy. In 2011, 24 percent of two-year-olds in Oregon had had a dental visit. 240

According to the Oregon Smile Survey, in 2012, 38 percent of children age 6-9 had protective sealants on at least one permanent molar, and 3 percent of children age 6-9 were in need of urgent dental care.241
Oregon Healthy Teens data indicates that 69 percent of Lincoln County 8th graders and 75 percent of Lincoln County 11th graders had seen a dentist for preventive care in the past year. These proportions are similar to other Oregon students (73 percent and 75 percent, respectively). \(^{242}\)

There is no available county level data on adult oral health access. Sixty-seven percent of all Oregonians had seen a dentist within the past year. The most common reason given for not visiting a dentist was lack of insurance or inability to pay (44 percent of respondents who do not usually visit a dentist). \(^{243}\)

**Oral Health Services for Oregon Health Plan members**

Among dentists in Oregon, 58.5 percent report that they do not see Medicaid members. Among dentists who do see OHP members, 46.1 percent have less than 25 percent Medicaid patients in their mix.

When examining service rates by race and ethnicity, Hawaiian and Pacific Islander Medicaid members receive the lowest rates of dental services at 29.8 percent, while Asian American members have the highest rates at 39.3 percent. \(^{244}\)

Seventy-seven percent of children and 49 percent of adult OHP members had a regular dentist in 2015. \(^{246}\)

When examining service rates by race and ethnicity, Hawaiian and Pacific Islander Medicaid members receive the lowest rates of dental services at 29.8 percent, while Asian American members have the highest rates at 39.3 percent. \(^{247}\)

In 2016, 20 percent of all IHN-CCO members reported receiving a preventive dental service during the previous year. 51 percent of IHN-CCO members who were children had a preventive dental service during the previous year. However, only 16 percent of IHN-CCO members who were children received at least two topical fluoride applications during the past year. And only 6 percent of IHN-CCO children age 6 or below had an oral health assessment in 2016. \(^{248}\)

**Behavioral Health Services**

Residents of Lincoln County with behavioral health illness such as mental illness and substance abuse disorders are served by a number of different types of providers, including the hospital system, private clinics, county behavioral health, residential facilities, and individual
practitioners. Many residents with behavioral health issues are also treated within the criminal justice system in Lincoln County and Oregon.

There are approximately 180 Lincoln County residents who are being treated at the Oregon State Hospital or in a residential facility. This represents a rate of 415 individuals per 100,000 residents, compared with a rate of 574 individuals per 100,000 residents statewide. This is due to higher statewide institutionalization rates at all facilities, and especially at the OHP Psychiatric Hospital and in supportive housing. 249

There are longstanding gaps between the need for behavioral health services and the capacity of these services. The National Survey on Drug Use and Health estimates that 4 percent of youths, 7 percent of young adults, and 2 percent of adults age 26 and up are in need of services but are not receiving treatment for illicit drug use. The gap for alcohol treatment is generally wider, with 13 percent of young adults and 6 percent of other adults needing but not receiving treatment. 250

Oregon Health Plan members

The Oregon Health Plan covers mental health and substance abuse disorder treatment, and as a result, treatment rates for these conditions are substantial. In Lincoln County, 2,214 Oregon Health Plan members are receiving mental health services through OHP, and 670 members are receiving substance abuse disorder treatment services.

Table 5.5 shows the percentage of OHP members who receive treatment for mental health conditions and substance abuse disorders. These proportions demonstrate both the burden of disease and also access to care, with the caveat that disease burden is always higher than treatment rates, but by how much is unknown. Young adults are generally less likely to seek treatment, so the treatment rates may understate the comparable disease burden.

Table 5.5: Percent of OHP members in Lincoln County receiving treatment for mental health conditions and substance abuse disorders, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mental health conditions</th>
<th>Substance abuse disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children age 0 – 17</td>
<td>6.5 %</td>
<td>0.9 % *</td>
</tr>
<tr>
<td>Young adults 18 – 25</td>
<td>9.0 %</td>
<td>3.5 %</td>
</tr>
<tr>
<td>Adults 26 and older</td>
<td>10.1 %</td>
<td>4.8 %</td>
</tr>
<tr>
<td>All members</td>
<td>11.7 %</td>
<td>3.5 %</td>
</tr>
</tbody>
</table>

Table notes: * Substance abuse statistics for children under 18 were only reported for those aged 12-17
Source: OHA Lincoln County Behavioral Health Profile

Conclusion

Examining the ways in which various populations interact with the health care system is important to help us recognize the barriers that many residents face when obtaining medical care. As highlighted throughout this chapter, the data-driven exploration of health care access
is still developing, as are the frameworks that act as a guide. In addition, the impact of the Affordable Care Act on access to health care is still forthcoming and major changes in access are expected after the expansion of health insurance and restructuring of the health care delivery system. Beyond the lack of data surrounding the ACA’s impact on access to health care, major gaps exist in our understanding of the disparities experienced by different populations in accessing health care. We still have little knowledge on a local scale of how factors such as race and ethnicity, education level, disability status, language ability, immigration status, and gender identity influence an individual’s ability and desire to access medical care. Finally, closing gaps in quantifying the workforce would provide a better understanding of the co-development of the health care system with those it serves. The data presented in this chapter can support an initial understanding and baseline of access to medical care in the region, while calling attention to challenges faced by many in our community when accessing medical care.
Chapter 6
Physical Health

Traditional measures used to evaluate the health of populations are morbidity (rate of disease) and mortality (deaths). Examining various cancers, heart disease, and other major causes can highlight notable improvement as well as areas in which the region is in need of improvement. The more detailed data available about disparities within particular populations and illnesses, the better communities can address these issues effectively in the region. Many of the conditions that cause illness and death within the region have well-established causes, a number of them rooted in behaviors or risk factors that can be prevented.

Throughout this chapter, many statistics are aggregated over a set of years in order to report reliable data. When incidence or prevalence rates are reported across many years, the statistic is per person per year. For example, the all-cancer incidence rate in Oregon across 2008-2012 was 448 cases per 100,000 people; this means that in each of the five years between 2008 and 2012, an average of 448 cases were diagnosed for every 100,000 people in the population.

Maternal and Infant Health

All fertility and maternal/infant health data are based on the county of residence of the mother, not the county where the infant was born.

Fertility Rate

The fertility rate is the total number of births per 1,000 women (where only women age 15-44 are used in the calculation). Figure 6.1 below illustrates the fertility rate of Lincoln County among different racial/ethnic groups within the region. The county has a higher fertility rate (64.7 per 1,000 women) than the state’s (58.0 per 1,000 women) and nearly twice that of Benton County (36.3 per 1,000 women). Among racial/ethnic groups, women who identify as Hispanic or Latina have the highest fertility rate in the county (among groups with a significant number of births), equating to about 1.3 times the rate of women who identify as White.
Figure 6.1: Fertility rate (births per 1,000 women) by race/ethnicity in Lincoln County and Oregon, 2014-2016

- American Indian or Alaska Native: 31
- Asian: 45
- Black or African American: 22
- Hispanic or Latina: 59
- Multiple races: 72
- Native Hawaiian or Pacific Islander: 116
- White, not Hispanic or Latina: 45

Figure notes: These data represent 1,296 births over 3 years. Fertility rate data are based on county of residence, not county of birth. Rates for African Americans and Native Hawaiians/Pacific Islander should be interpreted with caution due to a low number of births.
Source: Oregon Healthy Authority, Center for Health Statistics, Birth Certificate Data

Compared to Oregon overall, women between 18 and 29 in Lincoln County tend to have a higher fertility rate (Figure 6.2). The highest fertility rate in Lincoln County occurs for women between ages 25 to 29. This is also true when observing rates for the tri-county region and the state.251

Figure 6.2: Age-specific fertility rates (births per 1,000 women) by maternal age in Lincoln County, 2014-2016

Figure notes: These data represent 1,296 births over 3 years.
Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data
Prenatal Care and Healthy Pregnancy

Infants born to mothers who receive no prenatal care are three times more likely to have a low birth weight, and five times more likely to die of complications than those whose mothers received prenatal care.252 Prenatal care with/by a medical professional includes discussing a mother’s healthy choices and body changes; prenatal testing and counseling; identifying and treating medical complications like gestational hypertension, diabetes, and anemia; promoting optimal weight gain; testing for and treating sexually transmitted infections; oral health assessment and treatment; and maternal mental health, tobacco and substance abuse screening.

Across the county from 2009 to 2016, a total of 84.2 percent of all mothers were able to access adequate prenatal care, slightly lower than the 86.4 percent of Oregon mothers during the same time period. Aside from those less than 20 years of age, all age groups in the county have a higher rate of inadequate or no prenatal care than statewide rates. There are significant disparities that exist among different age groups within the county as well (see Figure 6.3). When examining the more common age groups for giving birth (18-34), younger mothers in the county are less likely to access adequate prenatal care than older mothers.253

Figure 6.3: Percent of births for which mothers accessed inadequate or no prenatal care in Lincoln County by age group, 2009-2016

Figure notes: Data are based on county of residence of the mother at the time of birth, not county of birth. Age groups 10 to 14 and 45 to 49 have a low number of births, so data should be interpreted with caution. Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

There are also disparities in prenatal care access among mothers of different race/ethnic groups in the county. Overall, mothers who identify as White and non-Hispanic tend to access adequate prenatal care more frequently when compared to all other racial/ethnic groups (Figure 6.4).254
Figure 6.4: Percent of births for which mothers accessed inadequate or no prenatal care by race/ethnicity in Lincoln County, 2009-2016

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent of births</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>25.8%</td>
</tr>
<tr>
<td>Asian</td>
<td>18%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>37.5%</td>
</tr>
<tr>
<td>Hispanic or Latina</td>
<td>18.3%</td>
</tr>
<tr>
<td>Multiple races</td>
<td>20.9%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>35.7%</td>
</tr>
<tr>
<td>White, not Hispanic or Latina</td>
<td>14.1%</td>
</tr>
</tbody>
</table>

Figure notes: Data are based on county of residence of the mother at the time of birth, not county of birth. Results should be interpreted with caution for the African American and Native Hawaiian/Pacific Islander groups due to a low number of births.
Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

Smoking During Pregnancy

Smoking during pregnancy is the single most preventable cause of illness and death among infants. Smoking during pregnancy increases the risk of stillbirth, low birth weight, sudden infant death syndrome (SIDS), and preterm birth. It also contributes to cognitive and behavioral problems and respiratory problems in both the mother and the child.255

Children exposed to tobacco before birth are more than twice as likely to become regular smokers themselves later in life, compared with children not exposed to tobacco in utero.256 Women who quit smoking before pregnancy or early in pregnancy also significantly reduce their risks for delays in conception (e.g. infertility) and other complications during birth.257

On average in 2009-2016, 21 percent of mothers smoked at some point during pregnancy in the county. This percentage is much higher than both the state average of 10 percent and the Healthy People 2020 target of 1.4 percent.258 The maternal smoking rate in the county is also higher than Oregon across age groups, except for the 10 to 14 and 45 to 49 age brackets (possibly due to a very low number of births at those ages). However, there is a notable difference in smoking rates when comparing age groups, in which the rate of smoking among pregnant women under the age of 25 is nearly two-and-a-half times the rate of smoking among pregnant women ages 25 and up. The rate of smoking among pregnant women in Lincoln County is highest among adolescents and young adults, and consistently decreases with increasing age (Figure 6.5).
Smoking cessation counseling and programs offered during prenatal care can provide effective assistance to encourage pregnant women to quit smoking. There currently are no established smoking cessation programs specifically for mothers in the region, but efforts are being made to make them available at the county level. The standard of care among health professionals providing prenatal care is to determine if the mother smokes and, if so, to discuss the benefits of quitting smoking and offer resources to support the mother if she decides to quit.

**Alcohol Use During Pregnancy**

Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong disorders known as fetal alcohol spectrum disorders (FASDs). Children with FASDs can have a host of problems, including poor coordination, hyperactivity behavior, difficulty paying attention, poor memory, difficulty in school, learning disabilities, speech and language delays, poor reasoning and judgment skills, vision or hearing problems, and complications with the heart, kidney, or bones. There is no known safe amount of alcohol to drink during pregnancy and no known safe time to drink alcohol during pregnancy.259

The Pregnancy Risk Assessment Monitoring System (PRAMS), a national surveillance system, provides information about women who have had a recent live birth. The most recent data are from 2011. Oregon state-level data indicate that 92 percent of pregnant mothers abstained from alcohol during the last 3 months of their pregnancies. Less than one percent had more than one drink per week during the third trimester.260 There are no regional or county-level data available at present.
Teen Pregnancy

Teen mothers are less likely to receive early prenatal care, and are more likely to experience blood-pressure complications and premature birth. Children of teenage mothers are also more likely to become teen parents themselves, be incarcerated during adolescence, drop out of school, experience more health problems, and are two times as likely to experience abuse and neglect. Negative effects of early childbearing on teenage fathers include an increased likelihood of partaking in delinquent behaviors, such as alcohol and drug abuse or dealing, and fewer years of completed school in comparison to their childless peers. On average in the United States, 50 percent of teen mothers receive a high school diploma by age 22, compared to 90 percent of women who had not given birth as a teenager.

The most recent information available suggests that, overall, county teen pregnancy rates (ages 15 to 19) have decreased between 2009 and 2016 (Figure 6.6). Given the small number of teen pregnancies each year, three year averages are shown. The three year average in 2009-2011 in Lincoln County was nearly 45 pregnancies per 1,000 women age 15-19. This number declined to about 30 pregnancies per 1,000 women age 15-19 in 2014-2016. County teen pregnancy rates were above regional teen pregnancy rates in all years.

**Figure 6.6: Pregnancy rate per 1,000 women age 15-19 years in Lincoln County and the LBL Region, by Hispanic and non-Hispanic ethnicities, 3 year moving average, 2009-2016**

Disparities in teen pregnancy rates emerge when the overall regional figure is broken down. For example, despite the overall decline in rates, there are striking differences in teen birth rates for Hispanic and non-Hispanic populations at both the county and regional levels. Between 2009 and 2011, Hispanic teens aged 15 to 19 had a pregnancy rate in the county that was nearly double than that of all teens (Figure 6.6). Still, the county disparity was less drastic than the state disparity; state-wide the pregnancy rate of Hispanic teens was 2.6 times greater than
that of all teens. Notwithstanding the greater Hispanic teen pregnancy rates, both regionally and statewide, the pregnancy rate among Hispanic teens is declining faster than the pregnancy rate among non-Hispanic teens.

**Infant Mortality**

The annual infant mortality* occurrence in the county has been about 6.5 fatalities per 1,000 live births from 2014 to 2016. Infant mortality rates are lower in the region (about 5.3 per 1,000 births), although this an increase from 2010 to 2012 when both the region and the county values were under 4 fatalities per 1,000 births. The region has surpassed the Healthy People target of 6.0 per 1,000 births. Principal causes of infant mortality over the 10 years between 2007 and 2016 included include congenital malformations, low birthweight and/or premature birth, sudden infant death syndrome, accidents, and complications from birth.

**Premature Birth and Low Birth Weight**

Premature birth and low birth weight among infants are commonly used measures of maternal and infant health. Infants that are born too early and/or with a low birth weight are at higher risk of dying in the first year of life and of having developmental problems and worse health outcomes throughout life. Both conditions are preventable to varying degrees and have been found to be influenced by a variety of factors.

**Premature Birth**

Premature birth (also known as preterm birth) is a measure of births that occur before the projected full term of the pregnancy. Infants are considered premature when they are born before completing 37 weeks (about 8.5 months) of pregnancy.

Many maternal factors can influence premature birth. Established preventable risk factors for premature birth include:

- Chronic health conditions in the mother, such as high blood pressure, and diabetes;
- Certain infections during pregnancy; and
- Cigarette smoking, alcohol use, or illicit drug use during pregnancy.

The percent of preterm births in Lincoln County (7.9 percent) from 2009 to 2016 is generally below the Healthy People 2020 target of 11.4 percent. However, disparities exist among women when stratified by race/ethnicity, as shown below in Figure 6.7.

* Infant mortality is defined as the death of a live-born infant before the age of 1.
Figure 6.7: Percent of births that are premature in Lincoln County by race/ethnicity, 2009-2016

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent of births</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>3.2 %</td>
</tr>
<tr>
<td>Asian</td>
<td>8 %</td>
</tr>
<tr>
<td>Black or African American</td>
<td>12.5 %</td>
</tr>
<tr>
<td>Hispanic or Latina</td>
<td>9.1 %</td>
</tr>
<tr>
<td>Multiple races</td>
<td>5.5 %</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>0 %</td>
</tr>
<tr>
<td>White, not Hispanic or Latina</td>
<td>8.1 %</td>
</tr>
</tbody>
</table>

Figure notes: Data are based on county of residence of the mother at the time of birth, not county of birth. Results should be interpreted with caution for the African American and Native Hawaiian/Pacific Islander groups due to a low number of births.
Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

Low Birth Weight

Low birth weight results when an infant fails to grow sufficiently during pregnancy, and can both signal and cause health problems with the infant. Infants are considered to have low birth weight if they weigh less than 2,500 grams (about 5.5 pounds at birth).

Established risk factors for low birth weight include:

- Premature birth;
- limited weight gain of the mother during pregnancy;
- the mother being younger than 15 years or older than 35 years;
- exposure to air pollution or drinking water contaminated with lead;
- cigarette smoking, alcohol use, or illicit drug use during pregnancy; and
- socioeconomic factors, such as having a low income, low educational level, or a high level of stress.272

From 2014 to 2016, approximately 7.5 percent of all infants born in Lincoln County had a low birth weight, which meets the Healthy People 2020 target of 7.8 percent.273 While the county and Oregon meet that objective, differences exist within the county. Figure 6.8 illustrates the variation across different racial/ethnic groups within the county.
Figure 6.8: Percent of infants born with low birth weight by race/ethnicity in Lincoln County, 2009-2016

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent of births</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>4.8%</td>
</tr>
<tr>
<td>Asian</td>
<td>8%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>12.5%</td>
</tr>
<tr>
<td>Hispanic or Latina</td>
<td>9.2%</td>
</tr>
<tr>
<td>Multiple races</td>
<td>7.5%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>0%</td>
</tr>
<tr>
<td>White, not Hispanic or Latina</td>
<td>6.9%</td>
</tr>
</tbody>
</table>

Figure notes: Data are based on county of residence of the mother at the time of birth, not county of birth. Results should be interpreted with caution for the African American and Native Hawaiian/Pacific Islander groups due to a low number of births.

Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

**Breastfeeding**

Breastfeeding is associated with numerous health benefits for infants, such as boosting immune system response, reducing the risk of Type 2 diabetes, and preventing obesity. Breastfeeding also promotes maternal-child bonding. The American Academy of Pediatrics recommends exclusively breastfeeding for the first six months after birth and further recommends continued breastfeeding for a year or more after birth.274

**Barriers to Breastfeeding**

Breastfeeding may not always come easily to new mothers, and other barriers to initiation of breastfeeding and continuation of breastfeeding might include:

- lack of support from the child’s father,
- lack of support from family and friends,
- hospital practices that interfere with breastfeeding,
- misperceptions about milk supply,
- no timely follow-up to questions or problems that arise after hospital discharge,
- lack of workplace support for breastfeeding,
- lack of acceptance by the community and society in general,
- widespread advertising and promotion of infant formula, and
- the common portrayal of bottle-feeding in the mass media.275
Breastfeeding in the Region

Data on breastfeeding are limited at both the state and county level. However, state programs, such as the Nutrition and Health Screening Program for Women, Infants, and Children (WIC), give some insight into the percentage of participating women who breastfeed. Table 6.1 displays the available county data on mothers who participate in the WIC program and the rate of breastfeeding. 276

Table 6.1: Breastfeeding rates among WIC mothers in Lincoln, Benton, and Linn counties, 2017

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>Benton County</th>
<th>Linn County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of pregnant women</td>
<td>52 %</td>
<td>28 %</td>
<td>41 %</td>
</tr>
<tr>
<td>served by WIC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of WIC mothers</td>
<td>95 %</td>
<td>93 %</td>
<td>91 %</td>
</tr>
<tr>
<td>who started out breastfeeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of WIC mothers</td>
<td>40 %</td>
<td>47 %</td>
<td>36 %</td>
</tr>
<tr>
<td>who breastfed exclusively</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for 6 months</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, WIC Facts

In addition to WIC, most health care providers encourage women to breastfeed their children, and there are many breastfeeding classes and support groups available in the region.

Immunizations

Immunization against communicable disease is one of the greatest advancements in public health. The major causes of premature death and disability before the development of vaccines and antibiotics were communicable disease such as measles, diphtheria, and polio. The current CDC recommendations are for children to be fully vaccinated by age two against:

- Diphtheria, Tetanus, Pertussis;
- Polio;
- Measles, Mumps, Rubella;
- Hib (a bacterial infection that can cause meningitis);
- Hepatitis B; and
- Varicella (Chickenpox).

This is known as the 4:3:1:3:3:1 schedule. In Lincoln County, 66 percent of two-year-olds have met the 4:3:1:3:3:1 schedule in 2017, compared to 72 percent of children statewide. WIC children in the county have an immunization rate of 60 percent.

The Oregon Health Authority tracks immunization rates among adolescents as well. The following table (6.2) displays immunization rates among Lincoln County youth age 13 to 17 and compares them to immunization rates in the LBL Region and in Oregon.
### Table 6.2: Immunization rates among youth age 13-17 in Lincoln County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th>Immunizations</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tdap</td>
<td>89 %</td>
<td>93 %</td>
<td>93 %</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>67 %</td>
<td>65 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Seasonal influenza</td>
<td>22 %</td>
<td>24 %</td>
<td>25 %</td>
</tr>
<tr>
<td>HPV (3 doses)</td>
<td>38 %</td>
<td>34 %</td>
<td>44 %</td>
</tr>
<tr>
<td>MMR (2+ doses)</td>
<td>88 %</td>
<td>87 %</td>
<td>91 %</td>
</tr>
</tbody>
</table>

Table notes: Tdap is the tetanus, diphtheria, and pertussis vaccine; HPV is the human papilloma virus vaccine; MMR is the measles, mumps, and rubella vaccine.

Source: Oregon Health Authority, Adolescent Immunization Rates by County

Immunizations are also an important component of preventive medicine among adults and seniors, especially for seasonal influenza. While data for all Lincoln County adults are not available, influenza vaccination rates tend to be higher among older adults. Research indicates that vaccination rates of 80 percent in healthy persons and 90 percent in high-risk persons are necessary to provide herd immunity from influenza.277

**Oregon Health Plan Immunizations**

Two-year-olds on the Oregon Health Plan in the LBL Region have a similar immunization rate, 65 percent, as in the rest of Lincoln County, compared to 68 percent of OHP two-year-olds statewide. There is no directly comparable data for adolescent immunization rates among OHP adolescents, but the Oregon Health Plan does track the percent of adolescents who received meningococcal and Tdap vaccines before their 13th birthday. In the LBL Region, 58 percent of OHP adolescents received these vaccines, compared to 68 percent statewide.278

**Physical Activity**

Regular physical activity helps improve overall health and wellness, reduces risk for obesity, and lessens the likelihood of developing many chronic diseases including diabetes, cancer, and heart disease. National physical activity guidelines recommend that children engage in at least 60 minutes of physical activity each day, including aerobic, muscle strengthening, and bone strengthening activity.

The Healthy People 2020 objective for physical activity aims to increase the proportion of adolescents who meet current national physical activity guidelines to 32 percent.279 As shown in Figure 6.9, 8th graders in Lincoln County nearly met the objective while 11th graders did not. Overall, a larger percentage of youth in Lincoln County self-report exercising for the recommended amount of time compared to Oregon youth overall.280
Reducing the amount of time youth spend in front of a screen, such as viewing television, videos, or playing video games is a key strategy to promote physical activity. In 2011, the Academy of Pediatrics recommended limiting television and video time to a maximum of two hours per day for children over the age of two and no exposure to television and/or videos (i.e., zero hours) for children younger than two years of age.\textsuperscript{281}

Healthy People 2020 supports increasing the proportion of children and adolescents aged two years through 12\textsuperscript{th} grade who view television, videos, or play video games for no more than two hours a day to the following percentages:
- 83.2 percent of children aged two to five years,
- 78.9 percent of children and adolescents aged 6 to 14 years, and
- 73.9 percent of adolescents in 9\textsuperscript{th} through 12\textsuperscript{th} grade.\textsuperscript{282}

Although data are unavailable for the aforementioned age groups at the county and regional level, the data shown in the following table (Table 6.3) may serve as an indicator of screen time (television and computers) among the child and adolescent population of Lincoln County. Table 6.3 shows that the majority of youth in 8\textsuperscript{th} and 11\textsuperscript{th} grade in the region do not spend more than two hours per school day watching television. Among 8\textsuperscript{th} and 11\textsuperscript{th} graders, Lincoln County youth surpass the state average and Healthy People 2020 target.\textsuperscript{283} Table 6.3 also shows that more than half of 8\textsuperscript{th} graders in Lincoln County spend less than two hours per day on the computer or on their phone. These rates are comparable to the state average, but fall well short of the Healthy People 2020 target of 82.6 percent.\textsuperscript{284}
Table 6.3: Percent of youth who view television or other screens for no more than two hours per school day in Lincoln County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited television exposure</td>
<td>8th grade</td>
<td>82%</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>82%</td>
<td>85%</td>
</tr>
<tr>
<td>Limited screen exposure</td>
<td>8th grade</td>
<td>52%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>44%</td>
<td>57%</td>
</tr>
</tbody>
</table>

Table notes: Limited television exposure is defined as no more than 2 hours per school day. Limited screen exposure is defined as no more than two hours per day of video/computer games, computer use, social networks, or smartphone use, excepting school work.

Source: Oregon Healthy Teens Survey

Adult Physical Activity

Physical activity is important for maintaining health as a person ages. Recommendations from the CDC for adults include at least an hour and fifteen minutes of vigorous-intensity activity or two-and-a-half hours of moderate-intensity activity every week, in addition to muscle-strengthening activities on two or more days a week.\(^{285}\)

Only 24 percent of adults in Lincoln County and in Oregon met those recommendations (Table 6.4).\(^{286}\) There is significant room for improvement, as neither geographical region meets the Healthy People 2020 objective of having 48 percent of the population meeting the CDC guidelines for physical activity.\(^{287}\)

Table 6.4: Age-adjusted percent of adults who meet CDC recommendations for physical activity and who get any physical activity outside of work in Lincoln County and Oregon, 2012-2015

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting CDC</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>recommendations for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physical activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any physical</td>
<td>84%</td>
<td>83%</td>
</tr>
<tr>
<td>activity outside of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>work</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, BRFSS

At the state level, participation in physical activity varies by race/ethnicity, household income, and by level of education. Adults with less than a high school education, those earning less than $24,999, and Latinos are less likely to meet CDC physical activity recommendations than their peers.\(^{288}\) As with children and youth, county-level data that describe physical activity levels among adults by race/ethnicity or level of household income are not available.

Recent data are not available at the county level for physical activity among older adults. The CDC recommends that adults 65 years of age or older get two hours and 30 minutes of moderate-intensity exercise (e.g. brisk walking) each week and engage in muscle-strengthening activities at least two days a week.\(^{289}\) Statewide, older adults have only a small decrease in physical activity compared to younger adults, and there are minor differences between men and women. Table 6.5 below displays physical activity at the state level among older adults.
Table 6.5: Physical activity among older adults in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended physical activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>60 %</td>
<td>67 %</td>
<td>64 %</td>
</tr>
<tr>
<td>Men</td>
<td>64 %</td>
<td>64 %</td>
<td>61 %</td>
</tr>
<tr>
<td><strong>Any physical activity outside of work</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>80 %</td>
<td>81 %</td>
<td>76 %</td>
</tr>
<tr>
<td>Men</td>
<td>79 %</td>
<td>79 %</td>
<td>75 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon BRFSS

**Nutrition**

The link between eating a healthy and balanced diet, and an increasing number of health benefits, is well-established. A healthy and balanced diet involves eating a variety of foods which provide essential nutrients (like dietary fiber and potassium), in the right amount – with negative health consequences from consuming too little or too much food. In addition to promoting health and supporting a healthy weight, mounting evidence links a healthy diet to lowered risks of chronic disease, including several types of cancer, osteoporosis, and cardiovascular disease.

The 2015 recommendations released by the U.S. Department of Health & Human Services and the U.S. Department of Agriculture highlights a number of major guidelines for Americans:

- consume a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level;
- consume a variety of vegetables from all the subgroups – dark greens, red and orange, legume (beans and peas), starchy, and other;
- consume fruits, especially whole fruits;
- consume grains, at least half of which are whole grains;
- consume fat-free or low-fat dairy;
- consume a variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products; and
- consume fewer foods with sodium (salt), saturated fats, trans fats, cholesterol, added sugars, and refined grains.

While research continues to show that healthy eating is a key ingredient to good health, the food environment has been changing in dramatic ways, parallel to increases in obesity rates. Portions, prices, and media messaging encourage consumption of foods high in calories, sugars, and fat. These unhealthy foods are all readily available at fast food restaurants, vending machines, and convenience stores. Meanwhile, work, school, and leisure environments are allowing fewer opportunities to burn the extra calories consumed. These changes include cut-backs in physical education classes, office jobs which include hours of sitting, and television and computers representing a large portion of leisure activity. With so many aspects of daily life supporting improper nutrition, it becomes essential to look at both healthy behaviors and environmental factors to improve the nutrition and health of the entire community.

100
Proper nutrition among children and adolescents is essential in supporting healthy growth and development, academic performance, and well-being, while also preventing obesity and a number of chronic diseases.\textsuperscript{294} Education about the importance of nutrition early in life helps children and adolescents to develop healthy habits that often continue into adulthood.

As shown in the table below (Table 6.6), adolescents in Lincoln County self-report consuming at least five servings of fruits and vegetables per day at about the same rate as the state.\textsuperscript{295}

### Table 6.6: Percent of youth consuming at least 5 servings of fruits and vegetables per day and consuming no sugar sweetened sodas or energy drinks in the past 7 days, Lincoln County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fruits and</td>
<td>8\textsuperscript{th} grade</td>
<td>23 %</td>
<td>27 %</td>
</tr>
<tr>
<td>vegetables</td>
<td>11\textsuperscript{th} grade</td>
<td>15 %</td>
<td>18 %</td>
</tr>
<tr>
<td>No sugar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sweetened sodas</td>
<td>8\textsuperscript{th} grade</td>
<td>32 %</td>
<td>34 %</td>
</tr>
<tr>
<td></td>
<td>11\textsuperscript{th} grade</td>
<td>29 %</td>
<td>32 %</td>
</tr>
<tr>
<td>No energy drinks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8\textsuperscript{th} grade</td>
<td>79 %</td>
<td>75 %</td>
</tr>
<tr>
<td></td>
<td>11\textsuperscript{th} grade</td>
<td>59 %</td>
<td>67 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Nutrition and eating habits are frequently set early in life. Good nutrition can delay the physical signs of aging and prevent or slow the development of many chronic diseases, including diabetes and cancer. Approximately one in five adults in the county and in Oregon consumes at least five servings of fruits and vegetables per day (Table 6.7).\textsuperscript{296} This is similar to the percentage of children in the region. Additional assessments of fruit and vegetable intake by race/ethnicity, age group, and income levels are needed for future planning and outreach among adults in the region.

Adults are also at risk of metabolic disease from excessive consumption of sugar, from sugar-sweetened beverages and other sources. There are no data on abstinence from sugar-sweetened beverages, but Table 6.7 below does report the percent of Lincoln County and Oregon residents who drink 7 or more sodas per week.

### Table 6.7: Percent of adults who consumed at least 5 servings of fruits and vegetables per day and who drank 7 or more sodas per week in Lincoln County and Oregon, 2012-2015.

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings of fruits and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vegetables</td>
<td>19 %</td>
<td>20 %</td>
</tr>
<tr>
<td>7 or more sodas per week</td>
<td>15 % *</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Table note: * This value may be statistically unreliable.
Source: Oregon Health Authority, Health risk and protective factors among Oregon adults, by county

Nutrition among older adults plays an important role in immune function, as well as cognitive changes that take place as part of the aging process. Older adults can also be at increased risk for poor nutrition and dehydration, as taste sensitivity and thirst mechanisms often decline with age. Good nutrition has been shown to decrease inflammatory responses and improve
immune function, as well as slow some types of cognitive (brain function) decline associated with aging.\textsuperscript{297} Data at the county level are not available for older adults on consumption of fruits and vegetables and is a possible area for future surveillance, but statewide data are shown in Table 6.8.

<table>
<thead>
<tr>
<th>Table 6.8 Nutrition among older adults in Oregon, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings of fruits and vegetables</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td>Men</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon BRFSS

**Obesity**

Being obese or overweight\textsuperscript{*} is a complicated health condition. The risk of unhealthy weight is influenced by diet, exercise, and other behaviors, but it also depends strongly on genetic and environmental factors. Obesity is also correlated with socio-economic status and other social determinants of health. In addition to being a poor health outcome, obesity and overweight status can increase the risk of many diseases such as diabetes, heart disease, and possible cancer.

The Oregon Healthy Teens Survey\textsuperscript{†} found that 27 percent of all eighth graders in Lincoln County are overweight or obese (Table 6.9). Rates are higher for 11\textsuperscript{th} graders in the county, with 32 percent identifying as overweight or obese.\textsuperscript{298}

<table>
<thead>
<tr>
<th>Table 6.9: Overweight and obesity prevalence in Lincoln County, the LBL region, and Oregon, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Overweight</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Obese</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Table notes: For children and teens, the CDC defines obesity as belonging to the 95\textsuperscript{th} percentile (or higher) compared to others of similar age and sex, while overweight is defined as belonging between the 85\textsuperscript{th} and 95\textsuperscript{th} percentile.

Source: Oregon Healthy Teens Survey

Over 30 percent of adolescents in Lincoln County are overweight or obese, but the prevalence among adults more than doubles. An estimated 31 percent of adults in Lincoln County are obese; an additional 35 percent are overweight (Table 6.10).\textsuperscript{299} Therefore, about 66 percent of

\textsuperscript{*} For adults aged 20 and older, the CDC defines obesity as having a body mass index (BMI) of 30 or more and overweight as having a BMI of between 25 and 30. For children and teens, specific BMI values are not used to define overweight and obesity. Obesity is instead defined as belonging to the 95\textsuperscript{th} percentile (or higher) compared to others of similar age and sex, while overweight is defined as belonging between the 85\textsuperscript{th} and 95\textsuperscript{th} percentile. Percentiles are calculated from CDC Growth Charts, which use national data over time.

\textsuperscript{†} The Oregon Healthy Teens Survey distributes a questionnaire to 8\textsuperscript{th} and 11\textsuperscript{th} graders; therefore, adolescent data are richest for these age groups.
Lincoln County adults are either overweight or obese. Since 1990, Oregon’s adult obesity rate has increased 121 percent. Obesity contributes to the death of about 1,400 Oregonians each year, making it second only to tobacco as a preventable cause of death.300

Table 6.10: Prevalence of overweight and obesity among adults in the county and Oregon, 2014-2015

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight</td>
<td>35 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Obese</td>
<td>31 %</td>
<td>27 %</td>
</tr>
</tbody>
</table>

Table notes: For adults aged 20 and older, the CDC defines obesity as having a body mass index (BMI) of 30 or more and overweight as having a BMI of between 25 and 30.
Source: Oregon Behavioral Risk Factors Surveillance System, Small Area Estimates

Statewide obesity and overweight rates are similar among the elderly population and among adults between 45 and 64 years of age (approximately 63 percent).301 Specific data are not available at the county level.

Oregon Health Plan Obesity

Among IHN-CCO members, the prevalence of obesity is 39 percent, slightly higher than the prevalence of obesity among all Oregon Medicaid members at 36 percent. Obesity is least prevalent among Asian Medicaid members and most prevalent among Pacific Islander Medicaid members.302

Oral Health

Good oral health is essential to overall physical and mental health and encompasses more than just dental check-ups. Oral disease can lead to cavities and gum ailments, which can in turn contribute to other diseases or conditions. Conversely, certain chronic mental and physical health conditions can also contribute to declines in oral health. Gum disease is associated with endocarditis (an infection of the inner lining of the heart), cardiovascular disease, premature birth, and low birth weight.303 Osteoporosis can lead to tooth loss, and individuals with diabetes and immune system disorders are more susceptible to gum and bone infections. Poor oral health can also affect self-esteem, reduce employment opportunities, and increase absenteeism.304

Among children in the U.S., dental cavities are the most common childhood disease.305 Cavities are almost completely preventable through optimal water fluoridation (discussed in more detail in Chapter 3), application of dental sealants to children’s teeth, effective oral hygiene (brushing teeth and flossing), and regular preventive visits to the dentist.306 Across the county, the proportion of 8th grade and 11th grade youth who have ever had a cavity is much higher than the Healthy People 2020 target of no more than 48.3 percent (Table 6.11). The proportions do not change much in the three years between 8th grade and 11th grade – this indicates that most tooth decay occurs in children before the 8th grade.307
Table 6.11: Percent of youth who have ever had a cavity in Lincoln County, the region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>75 %</td>
<td>71 %</td>
<td>69 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>77 %</td>
<td>73 %</td>
<td>75 %</td>
</tr>
</tbody>
</table>

Table notes: Unlike most of the OHT data in this document, which is from the 2017 survey, this data are from the 2015 survey due to the discontinuation of this question.

Source: Oregon Healthy Teens Survey

Achieving and maintaining good oral health is a significant challenge for many people in the region, particularly those with lower incomes. This challenge may be exacerbated by the fact that not all cities, districts, or water supplies in the region are fluoridated (see Chapter 3 Environment).

One of the objectives of Healthy People 2020 is to increase the proportion of U.S. communities with fluoridated water to 75 percent. Lincoln County has no public water fluoridation. In contrast, approximately 27 percent of Oregon residents have access to fluoridation through community water systems, the second lowest percentage in the country.

Infectious Diseases

Prevention and control of infectious illnesses rank among the greatest health advances of the 20th century. The World Health Organization defines infectious diseases as those that are caused by bacteria, viruses, parasites, or fungi; and can be passed from person to person. Some are transmitted via ingesting contaminated food or water, many are spread by microorganisms in coughs or sneezes, and others result from exposures in the environment or insect bites. Diseases that spread from animals are called zoonotic infections.

All physicians, health care providers, and laboratories in Oregon are required by law to actively report confirmed or suspected diagnoses of over 50 infectious diseases and conditions to their local health departments. These reports are directed through county health departments to the Oregon Public Health Division which collects and distribute data to inform health departments, physicians and the public. Reporting enables appropriate public health follow-up for patients, helps identify outbreaks, and provides a better understanding of disease transmission patterns. Some diseases are subject to restrictions on school attendance, day care attendance, patient care, and food handling. There were 314 cases of reportable communicable diseases in the county during 2016, a rate of about 6 per week.

Respiratory Illnesses

Respiratory illnesses such as the influenza virus, commonly referred to as the flu, spread from person to person when droplets from a cough or sneeze of an infected person move through the air and enter the mouth or nose of people nearby. Some of the microorganisms in these droplets can also live on surfaces for hours, such as desks or doorknobs, and can spread when people touch these surfaces and then touch their eyes, mouth, and nose.
The common cold* and influenza are the most common respiratory illnesses. However, local, state, and national statistics for these diseases are difficult to ascertain because doctors and laboratories are not required to report them to public health authorities. This is because most people experience only mild, short-term illness, and do not seek medical attention. The illnesses are difficult to differentiate, and most are treated symptomatically rather than curatively.

Yearly vaccination is the best method of defending against influenza. There are many different strains of influenza, and vaccination efforts attempt to guard against the most likely strains to impact a community for a given “flu season”. Lincoln County’s two-year-olds were vaccinated at a rate of 45 percent in 2017, up from 38 percent in 2014 (the state’s rate in 2017 was 55 percent). The county’s adolescents (ages 13-17) were vaccinated at a rate of about 22 percent, and the state rate was close to 25 percent. Adult vaccination rates for influenza generally increase with age, and are typically better for women. The only age group usually above 50 percent is made up of seniors age 65 and older.

The Oregon Health Authority reports influenza and pneumonia mortality jointly; Lincoln County rates have been generally increasing since 2011 and are now significantly above the region average (Figure 6.10).

Figure 6.10: Age-adjusted influenza and pneumonia mortality rates in Lincoln County and the LBL Region, 2008-2015

Less common, but more serious respiratory illnesses include pneumonia, pertussis (whooping cough), and tuberculosis. In general, infectious tuberculosis is extremely rare in Lincoln

* More than 200 viruses cause what is typically considered the common cold, including rhinovirus, coronavirus, respiratory syncytial virus, and the parainfluenza virus.
County. There have been 8 cases from 2007 and 2016. Tuberculosis cases are actively managed and curative therapy is overseen by public health nurses.

Pertussis is a very contagious bacterial infection that causes a coughing illness which may last six to ten weeks or longer. It is an endemic disease with epidemic peaks occurring every two to seven years and has proven persistent despite widespread childhood immunization. There was a sharp rise of pertussis in the United States during 2012. Washington State was particularly impacted and declared a pertussis epidemic in April 2012, reporting almost 10 times more cases of pertussis than in 2011. Oregon reported more than twice as many pertussis cases in 2012 as in 2011. The number of cases of pertussis in the region fluctuates annually; an outbreak in 2012 pushed the incidence above the historical average of approximately 14 diagnoses per 100,000 people per year, and it continues to rise. In Lincoln County in particular, the number of reported cases continues a pattern of spikes and drops. (Figure 6.11).

Figure 6.11: Age-adjusted rate of pertussis infections per 100,000 persons in the Lincoln County and the LBL Region, 2007-2016

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologist’s User System

**Foodborne Illnesses**

The Centers for Disease Control and Prevention (CDC) estimate that each year, one in six Americans (48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. The leading causes of foodborne illness in the United States are due to exposure to norovirus, Salmonella, Campylobacter, and *Clostridium perfringens*. Other infectious agents known for foodborne transmission, such as *E. coli*, are not as common but are more likely to cause serious complications requiring hospitalization. Figure 6.12 below shows that the incidence of campylobacter in the region has historically ranged between 17 and 31 cases per
100,000 people each year. The incidence in Oregon has stayed below 25 cases per 100,000 people between 2007 and 2016, and Lincoln County has also generally been below the regional average.

*Figure 6.12: Age-adjusted rate of Campylobacter infections per 100,000 persons in Lincoln County and the LBL Region, 2007-2016*

![Graph showing age-adjusted rate of Campylobacter infections in Lincoln County and LBL Region, 2007-2016.](image)

*Figure notes: Case numbers may be updated as reports are confirmed. Source: Oregon Health Authority, Oregon Public Health Epidemiologist’s User System*

*Escherichia coli* infections, most commonly 0157:H7 (a specific strain of *E. coli*), is another significant disease-causing organism. Around 5 to 10 percent of those who are diagnosed with the infection develop potentially life-threatening complications. Lincoln County’s rate of *E. coli* per 100,000 persons has remained quite low aside from a spike in cases in 2013-14 (Figure 6.13).
Sexually Transmitted Infections (STIs)

Sexually transmitted infections (STIs, also sometimes called sexually transmitted diseases, STDs) are infections that can be passed from one person to another through sexual contact. Untreated STIs can have consequences for individuals’ health such as infertility and even death. Testing for STIs is a very effective mechanism for preventing the spread of STIs. Even incurable STIs, like HIV, are much less likely to spread if those affected by the infection receive proper treatment. However, untested individuals are unable to receive the treatment they need and are also much more likely to pass on the infection to others.

Chlamydia and gonorrhea are the most common STIs in the region. Approximately 80 to 90 percent of chlamydia infections and about 50 percent of gonorrhea infections are asymptomatic in women and may go undiagnosed. If left untreated, these infections may lead to pelvic inflammatory disease, which can cause tubal infertility, ectopic pregnancy and chronic pelvic pain.321

Chlamydia

Chlamydia is the most common reportable illness in Oregon, with infection rates steadily increasing over the past decade. In both Oregon and the region, reported rates of chlamydia are more than twice as high in women as in men; for every 10 men diagnosed with chlamydia, 25 women are diagnosed. Current guidelines recommend chlamydia screening in women who are not symptomatic, but do not recommend the same screening for men without symptoms. This likely causes the higher rate of reported chlamydia cases among women, rather than a difference in infection rates by gender.322 Overall, Lincoln County has recently had a lower rate
of chlamydia than the region, although rates are increasing at both geographic levels (Figure 6.14).

Figure 6.14: Age-adjusted rate of chlamydia infection per 100,000 persons in Lincoln County and the LBL Region, 2007-2016

![Graph showing age-adjusted rate of chlamydia infection per 100,000 persons in Lincoln County and the LBL Region, 2007-2016]

*Figure notes: Case numbers may be updated as reports are confirmed.*

*Source: Oregon Health Authority, Oregon Public Health Epidemiologist’s User System*

**Oregon Health Plan Chlamydia Screening**

Oregon must track and report the percentage of sexually active young women (ages 16-24) on the Oregon Health Plan. Statewide, 47.5 percent of young women on OHP underwent screening in 2016, about a half-percent increase from 2015. African American women on OHP are screened at a rate of 56 percent, while Asian American women are screened at a rate of 36.8 percent. Young women on OHP in the IHN-CCO region are screened at a rate of 44.6 percent. 323

**Gonorrhea**

Another reportable sexually transmitted infection that is present in the region is gonorrhea. In general, women are more likely than men to become infected with gonorrhea after exposure. However, as with chlamydia, women are less likely than men to develop symptoms following infection. 324 Gonorrhea infection rates in the region have consistently stayed below the state rate, but rates have recently spiked for the county, region, and state. Figure 6.15 shows the variation in gonorrhea incidence rates in the region and Lincoln County for the past ten years for which there are data.
The key risk factor for chlamydia infections is age. Regional residents between 15 and 24 years of age contract chlamydia at a rate 4.3 times higher than the infection rate among all ages. This trend holds for state infection rates as well. Gonorrhea infection rates are somewhat less influenced by age; 15-24 year olds in the region have infection rates 2.7 times as high as the infection rate among all ages (Table 6.12).

Table 6.12: Age-specific incidence rates of chlamydia and gonorrhea, diagnoses per 100,000 persons in Lincoln County and Oregon, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Chlamydia Lincoln County</th>
<th>Chlamydia Oregon</th>
<th>Gonorrhea Lincoln County</th>
<th>Gonorrhea Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>2,582</td>
<td>2,066</td>
<td>71</td>
<td>255</td>
</tr>
<tr>
<td>25-44</td>
<td>503</td>
<td>560</td>
<td>200</td>
<td>230</td>
</tr>
<tr>
<td>45-64</td>
<td>0</td>
<td>50</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>65 and older</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Syphilis

Syphilis is a rare but potentially fatal sexually transmitted infection. The number of cases of syphilis in Lincoln County grew very quickly from almost no cases between 2007 and 2012, to 23 cases in 2015. It is unclear if the spike in 2015 is short-lived or if the incidence rate will remain above the historical average. Figure 6.16 shows the increase in syphilis incidence in Lincoln County and the LBL Region over the past 10 years.
HIV/AIDS

HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) remains an important public health problem in Oregon. From 1981 through 2010, 8,753 Oregonians were diagnosed with HIV infection. Of those, 40 percent (3,540) died. Fortunately, death rates have decreased dramatically since the development of effective antiretroviral therapies. HIV/AIDS is now managed as a serious but chronic disease. As a result, the number of Oregonians living with HIV infections has increased from 2,720 to 5,213 from 1997 to 2010. New HIV diagnoses in Oregon are most common among 35–39 year old males. Between 2007 and 2016 the incidence of HIV in Lincoln County was 2.8 cases per 100,000 persons per year, about half of the state’s incidence (6.2 cases per 100,000 persons per year) during that time period.325

HIV Testing among Oregon Health Plan Members

Just under half (49 percent) of OHP members state-wide have ever been tested for HIV as of 2014. There is a wide range in the testing rates among differing races and ethnicities. Asian OHP members were screened the least of all races and ethnicities with a testing rate of 25.3 percent, while African Americans and American Indians/Alaska Natives were tested at the highest rate (near 58 percent). In the IHN-CCO service area, only 45.5 percent of Medicaid adults have been tested for HIV. Only three regions in the state reported lower testing rates.326
Viral Hepatitis

Although there is a very low incidence rate, viral Hepatitis, especially Hepatitis A, B, and C, are other infectious diseases affecting residents of the region. Transmission of Hepatitis A can occur person-to-person through an oral-fecal route; through exposure to contaminated water, ice, or shellfish harvested from sewage-contaminated water; or from fruits, vegetables, or other foods that are eaten uncooked and that were contaminated during harvesting or subsequent handling. Hepatitis B and C infection are transmitted by activities that involve contact with blood, blood products, and other bodily fluids, such as unprotected sexual contact, injection drug use, and transfusions with blood that has not been screened for viral hepatitis.327

Table 6.13: Annual hepatitis infection rate per 100,000 people, Lincoln County, the LBL Region, and Oregon, 2007-2016

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis A</strong></td>
<td>**</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Hepatitis B (acute)</strong></td>
<td>**</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Hepatitis B (chronic)</strong></td>
<td>5.8</td>
<td>6.4</td>
<td>11.9</td>
</tr>
<tr>
<td><strong>Hepatitis C (acute)</strong></td>
<td>**</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Hepatitis C (chronic)</strong></td>
<td>203</td>
<td>136</td>
<td>144</td>
</tr>
</tbody>
</table>

Table notes: ** indicates a rate based on fewer than 5 reported infections. Infection rates are based on 10 years of data, from 2007 to 2016, but represent infections per 100,000 people per year.
Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Lincoln County recorded less than 10 Hepatitis A cases from 2007 to 2016. During the same years, there were also less than 10 new recorded cases of acute Hepatitis B and acute Hepatitis C (past or present case, unspecified).328 Current estimates suggest that 65 percent of people infected with Hepatitis B and 75 percent of people infected with Hepatitis C are unaware of their infections.329 Overall, males experience higher rates of Hepatitis B and C infection than females.

Zoonotic Illnesses

Zoonotic illnesses are infectious diseases that can be spread from animals to humans. There are many zoonotic diseases, and their threat to human health is growing. This is due to increasing global movement of people and animals, and the effects of human populations expanding into previously undeveloped wildlife habitats.

Some zoonotic diseases are transmitted directly from animals to people, some result from contamination of the environment by animals, and others require a vector such as a tick or mosquito. Examples of zoonotic diseases include:
- **Bacterial - Salmonella, E. coli**, leptospirosis;
- **Viral - Rabies**, avian influenza;
- **Fungal - Ringworm**, sporotrichosis;
Parasitic - Toxoplasmosis, larval migraines due to roundworms; Vector-borne - West Nile virus, spread by mosquitoes, and Lyme disease, spread by ticks.

Climate change may also lead to greater zoonotic disease threats. Zoonotic diseases can cause symptoms such as diarrhea, muscle aches, and fever. Some diseases cause only mild illness while others can be life threatening. One such disease is rabies, which is virtually always fatal if left untreated. Rabies is endemic in the Oregon bat population.

**Injury and Violence**

**Child Abuse**

In 2017, there were a total of 1,292 reports of suspected child abuse or neglect in Lincoln County. As a result of these reports, 203 victims of child abuse or neglect were identified. The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94.1 percent of reports in Oregon); parents account for 77.5 percent of all perpetrators. Child abuse rates in Lincoln County have remained significantly higher than Oregon and the region.

![Figure 6.17: Child abuse rate per 1,000 for children under 18 years of age in Lincoln County, the LBL Region, and Oregon, 2013-2017](image)

*Figure notes: Rates include neglect, physical abuse, sexual abuse, threat of harm, and mental injury. Population data used by Oregon DHS is one year behind the year shown and is from the Office of Juvenile Justice and Delinquency Prevention. Source: Oregon Department of Human Services, Child Welfare Data Books*

Not all reported cases of child abuse result in a foster care placement. Children are placed in foster care for a variety of reasons. Some are placed in foster care because their families cannot
provide them with basic safety and protection, while others have had negative experiences such as parental substance abuse, sexual or physical abuse, and abandonment. In Oregon, many children are in foster care due to a history of abuse or neglect. The rates of foster care (Figure 6.18) mirror the rates of child abuse (Figure 6.17). Because of this, it is not surprising that Lincoln County’s rate of children in foster care is much higher than the region or state.

**Figure 6.18: Children in foster care, rate per 1,000 children in Lincoln County, the LBL Region, and Oregon, 2013-2015**

![Graph showing children in foster care rates](image)

*Figure notes: State totals do not include Title IV-E eligible children served by tribes.*

*Source: Oregon Department of Human Services: Children, Adults and Families Division. Child Welfare Data Books*

Family stress is a major underlying factor associated with families of abused and neglected children. Major sources of family stress often include drug and/or alcohol abuse, domestic violence, parental involvement with law enforcement agencies (LEA), and financial distress within the family. Many families also have significant childcare responsibilities, and some parents may even have a history of abuse as children. Often, families experience multiple sources of stress. Nearly half of document child abuse in Oregon is linked to parent or caregiver alcohol or drug use. Other common sources of stress are domestic violence, involvement with law enforcement, and financial distress.

The Oregon Healthy Teens Survey asks 11th graders if they had ever been hit or hurt by an adult. Over one in four (27 percent) 11th graders in Lincoln County reported being hit or hurt by an adult, much higher than both the region and the state (Figure 6.19).
The Oregon Healthy Teens Survey also asked about sexual assault and intimate partner violence. Lincoln County 11th graders consistently reported higher rates of abuse than the state (see Table 6.14). Experiencing abuse during childhood is a risk factor for many negative outcomes later in life. The topic of adverse childhood experiences is discussed later in this chapter, but they have been linked to many chronic illnesses, risky behaviors, and lower life expectancy.338

### Table 6.14: Percentage of 11th graders who answered “yes” to questions of sexual or intimate partner abuse, Lincoln County and Oregon, 2017

<table>
<thead>
<tr>
<th></th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physically forced into sexual intercourse</td>
<td>8.3 %</td>
<td>6.1 %</td>
</tr>
<tr>
<td>Sexual contact with an adult</td>
<td>11.1 %</td>
<td>7.6 %</td>
</tr>
<tr>
<td>Boyfriend or girlfriend physically hurt you on purpose</td>
<td>7.0 %</td>
<td>3.7 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

### Domestic Violence

Domestic violence, which includes many forms of abuse, affects children and adults. Physical abuse, sexual abuse or assault, intimidation, verbal abuse and emotional abuse, or threats of such harm are all forms of domestic violence. It can include abuse from a household member (including roommates or caregivers), intimate partners (including dating partners), or a family member (whether or not they live with the victim).339

A nonprofit organization, My Sisters’ Place, offers a variety of services to victims of domestic, sexual, and dating violence in Lincoln County. They arrange emergency services, such as shelter;
and offer advocacy services, including navigating the criminal justice system. They fielded 264 crisis contacts in 2017, and nearly 1,000 contacts overall. They provided means for emergency shelter for 112 adults and 51 children, translating to just over 2,000 bed-nights. They also provided advocacy, referral, support group, and healthy relationship services to hundreds more. Out of all those they served, 35% were homeless.340

Domestic violence not only has an effect on the victim, but can also have an effect on children; domestic violence poses a threat to children’s emotional, psychological, and physical well-being. Children who live with domestic violence are also at an increased risk to become direct victims of child abuse.341

Abuse of Vulnerable Adults

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse, caregiver neglect, and financial exploitation. The information in this section includes adults and seniors.

In 2015, the Oregon Department of Human Services Office of Adult Abuse Prevention and Investigations received almost 43,000 reports of potential abuse.342 Of those:
- 4,215 Oregon seniors and adults with physical disabilities experienced abuse or self-neglect, up sharply from 2,608 in 2010,
- Physical abuse had the highest rate of substantiation (35.6 percent) from reports,
- The category of abuse with the greatest number of substantiated cases was financial exploitation (1,188 substantiations),
- 25 percent of substantiated abuse claims occurred in facilities, while the other 75 percent occurred in community settings.343

Within Lincoln County in 2015, there were 98 investigated allegations of abuse against adults with intellectual and/or developmental disabilities, of which 53 were substantiated. Of the substantiated claims, 26 occurred in care facilities and 27 took place in community settings.344

Violent Crime

Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery, and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. Crime rates can also deter residents from pursuing healthy behaviors such as exercising outdoors.345 Additionally, exposure to crime and violence has been shown to increase stress, which may exacerbate hypertension and other stress-related disorders and contribute to obesity prevalence.346 Exposure to chronic stress also contributes to the increased prevalence of certain illnesses such as upper respiratory illness and asthma in neighborhoods with high levels of violence.347
Violent crime rates varied widely between counties. Lincoln County had a violent crime rate of 361 crimes per 100,000 people from 2010-2012. This was well above the Oregon rate of 249 crimes per 100,000 people. In 2013, the tri-county region recorded 55 violent deaths, including suicide, homicide, and undetermined causes. This was a rate of 22 violent deaths per 100,000 residents, equal to the rate in Oregon.

Adverse Childhood Experiences and Intimate Partner Violence among Oregon Health Plan Members

There are two sets of results from the 2014 MBRFSS survey that are related to this section. First is a topic called “adverse childhood experiences” (ACEs). Adult Medicaid members were asked a series of 11 questions regarding whether they or a parent/adult in the home experienced depression or mental illness, alcoholism, drug abuse, incarceration, separation or divorce, physical or verbal abuse, or sexual abuse. Any 4 or more “yes” responses would qualify the responder as having had ACEs. Those who have experienced these early-life challenges have increased risk for illnesses such as diabetes, depression, cancer, and heart disease; have a higher chance of tobacco use, alcoholism, and drug use; and have lower graduation rates and academic achievement.

A little over one-third (34.7 percent) of adult Medicaid members in the state of Oregon reported ACEs (compared to 22.5 percent for the general Oregon adult population). This value ranged from 7.8 percent in Asians to 50.9 percent in American Indians / Alaska Natives. Slightly higher than the state value, the local region reported 36.1 percent as having adverse childhood experiences.

The other topic is intimate partner violence. The survey measured the number of adult Medicaid members who were physically assaulted or harmed by an intimate partner in the past 12 months. Across the state, 4.5 percent of members reported being victims of this violence. Only 1.4 percent of Asians, and as much as 8.5 percent of African Americans reported being victims. The local region values were similar to that of the state, with 4.4 percent of members stating they had experienced intimate partner violence.

Occupational Safety and Health

With the large majority of the population engaged in some form of employment for some portion of their lives, the workplace represents an important opportunity to improve health. Occupational Safety and Health is concerned with all aspects of health and safety in the workplace, and focuses mostly on primary prevention of hazards. On a global scale, the World Health Organization (WHO) is currently addressing a wide scope of determinants of workers’ health, which includes risks for disease and injury, social factors, and access to health services. In the United States, one of the primary organizations leading the way towards health and
safety in the workplace is the Occupational Safety and Health Administration (OSHA) through the United States Department of Labor.

Despite established legislation, like the Occupational Safety and Health Act of 1970, requiring employers to provide workplaces “free from recognized hazards that are causing or likely to cause death or serious physical harm”\(^{352}\) to their workers, the toll of workplace fatalities, injuries and illness continues to exact a large toll on society. Impacts of these injuries, both social and financial, usually fall to workers and their families, as well as taxpayer-supported programs. Examining the data around particular industries can help illustrate the various workplaces and their relative rates of injury, illness, or fatality, ultimately painting a picture of the working conditions present in the community as a whole.

**Injuries**

County-specific data on workplace injuries are not available, but trends in state level data can be applied to major industries in the region to get a sense of the regional risk of workplace injury and illness. Statewide, the worker injury rate was approximately 41 injuries per 1,000 workers in 2013. Worker injury rates can be broken down first by industry, and then by category (a subset of industry).

The natural resources and mining industry has the highest incidence of non-fatal workplace injuries, with approximately 69 injuries per 1,000 workers in 2013. At a finer level of detail, certain specific workplace categories (not necessarily within the natural resources or mining industry) have high incidences of injury, including structural and motor vehicle manufacturing, fire protection, and wood preservation, which all had over 120 injuries per 1,000 workers. Surpassing all other workplace categories was local government nursing and residential care, with approximately 210 injuries per 1,000 workers in 2013. Industries with low workplace injury rates are concentrated in services such as educational and social services, business services, and private health care.

Lincoln County’s industry is concentrated in natural resources, retail, and leisure and hospitality. As shown in Figure 6.20, natural resources have relatively high workplace injury and illness rates in Oregon.
Leading Causes of Death in the Region

In 2016, the leading causes of death (for all ages combined) in Lincoln County are cancer, heart disease, lung disease, stroke, and accidents. Compared with the LBL Region, Lincoln County has more deaths per 100,000 residents for nearly every of its top ten causes of death (Figure 6.21).

Preventable risk factors such as tobacco use, diet, activity, and alcohol use contribute substantially to these deaths. For example, in 2016, it is estimated that 29 percent of deaths in Lincoln County were tobacco-related deaths. This is much higher than the 22 percent of tobacco-related deaths in Oregon in the same year.\textsuperscript{353}
Figure 6.21: Top 10 causes of death per 100,000 persons, crude rates, Lincoln County and region, 2016

Chronic Diseases and Conditions

Chronic diseases, such as heart disease, stroke, cancer and diabetes are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles, such as avoiding tobacco, being physically active, and eating well, greatly reduce a person’s risk for developing chronic illnesses. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention measures (including screening and appropriate follow-up) saves lives, reduces disability, and lowers medical costs.354

Cancer

Cancer is the leading cause of death in Lincoln County and in Oregon.355 Five types of cancer are discussed in this section: lung, colorectal, breast, prostate, and pancreatic. Lung cancer is the most common cause of cancer death for Oregonians, followed by colorectal cancer and pancreatic cancer.356 Pancreatic cancer has a very high mortality rate, in part due to the likelihood of a late diagnosis after the cancer has already progressed. Prostate cancer is a common cancer among men.
The region’s annual rate of newly diagnosed cancer cases is similar to the rate in Oregon, with the three counties ranging between 419 and 449 diagnoses per 100,000 individuals each year (Figure 6.22).

Figure 6.22: Annual age-adjusted incidence for all cancers, Lincoln, Benton, and Linn counties and Oregon, 2010-2014

![Bar chart showing age-adjusted incidence of cancer cases per 100,000 people for Lincoln, Benton, Linn, and Oregon counties.]

Source: National Cancer Institute: State Cancer Profiles

However, different types of cancer impact the counties differently, and will be presented in detail. As shown in Figure 6.23, age-adjusted incidence of tobacco-related cancer in the three counties varies greatly. Lincoln and Linn counties’ incidences are higher than Oregon’s incidence, while Benton’s is significantly lower.\(^{357}\) Data for all cancer and tobacco related cancer incidence are from different years and are therefore not directly comparable.
Cancer rates also vary between different racial and ethnic groups. In Oregon, incidence of cancer (the rate of new cases) varies from a low of just under 300 cases per 100,000 persons among Asians and Pacific Islanders, to a high of nearly 450 cases per 100,000 persons among Blacks or African Americans. Table 6.15 below displays data for cancer cases and deaths in Oregon by race and ethnicity. There is no race/ethnicity breakdown data available for Lincoln County specifically.

Table 6.15: Age-adjusted incidence and mortality rates of cancer in Oregon by race and ethnicity, per 100,000 persons, 2010-2014

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Incidence rate (new cases)</th>
<th>Mortality rate (deaths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>364.9</td>
<td>101.3</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>294.4</td>
<td>102.5</td>
</tr>
<tr>
<td>Black or African American</td>
<td>444.6</td>
<td>190.1</td>
</tr>
<tr>
<td>White</td>
<td>440.2</td>
<td>166.7</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>289.8</td>
<td>106.1</td>
</tr>
<tr>
<td>not Hispanic or Latino</td>
<td>443.7</td>
<td>168.2</td>
</tr>
</tbody>
</table>

Figure notes: An individual case or death is likely to be counted twice, as race and ethnicity data are separated in this instance.
Source: Oregon Health Authority

Between 2014 and 2016, the mortality rate (age-adjusted) from all cancers in Lincoln County was 168 deaths per 100,000 people per year. This rate was lower than Linn County, but much higher than Benton, and close to the state rate of 159 deaths per 100,000 people (Figure 6.25).
Tobacco contributed to 30 percent of cancer deaths in Lincoln County between 2014 and 2016, as shown in figure 6.25 below. This percentage is about the same as the state’s percentage (29 percent).

Lung and Bronchial Cancer

Because lung and bronchial cancers are closely related, this section will combine them both as lung cancer. Lung cancer incidence in men is steadily declining as a result of decreasing smoking
rates, but the incidence in women remains relatively flat.\textsuperscript{358} Lung cancer is the deadliest cancer in Oregon, accounting for 27 percent of cancer deaths in the state in 2013; a number which includes tobacco and non-tobacco caused lung cancers.\textsuperscript{359} The rate of lung cancer has remained fairly constant in Oregon and the United States over time.

Across the region, the decline in smoking from 2004 to 2011 reflects major implication for cancer rates, since smoking is the leading cause of lung cancers.\textsuperscript{360} The lung and bronchial cancer incidence rate for the state was 58 per 100,000 from 2010-2014, lower than the Lincoln County rate of 70 per 100,000.\textsuperscript{361} Mortality rates are also disparate across the region and compared to the state. Lincoln County has the highest mortality rate due to lung cancer at 55 per 100,000, with Linn County following at 54 per 100,000. Oregon has a mortality rate of 44 per 100,000, while Benton County has a rate of 36 per 100,000 (Figure 6.26). The Healthy People 2020 goal is 45.5 or fewer deaths per 100,000 people.\textsuperscript{362}

**Figure 6.26: Age-adjusted incidence and death rate of lung and bronchial cancer per 100,000 persons in Lincoln, Benton, and Linn counties and Oregon, 2010-2014**

![Diagram of lung and bronchial cancer rates](attachment:10:CHAs and CHPs)

**Source:** National Cancer Institute, State Cancer Profiles

**Breast Cancer**

Oregon has the 11\textsuperscript{th} highest incidence rate for breast cancer in the United States.\textsuperscript{363} Although significant improvements have occurred in early detection and treatment, breast cancer is still a leading cause of death for women in Oregon. Only a small fraction of breast cancer cases can be linked to genetics.\textsuperscript{364}

The 2010-2014 age-adjusted incidence of breast cancer among women in Lincoln County was 129 diagnoses per 100,000 women, similar to the 126 diagnoses per 100,000 women in Oregon. During the same time, the female breast cancer mortality rates in all three counties were higher
than the Oregon mortality rate, as shown in Figure 6.27.\textsuperscript{365} The Healthy People 2020 target is 20.7 deaths per 100,000 females.\textsuperscript{366}

Figure 6.27: Age-adjusted breast cancer incidence and mortality rates per 100,000 women in Lincoln, Benton, and Linn counties and Oregon, 2010-2014

State trends in breast cancer can be summarized as follows:

- Women are at highest risk for breast cancer.
- Women age 40 and older are at greatest risk for being diagnosed with breast cancer.
- A small percentage of women under the age of 40 develop breast cancer.
- About 85 percent of all women diagnosed with breast cancer do not have a family history of breast cancer.
- Only about 10-15 percent of breast cancers occur as a result of inherited genetic traits.
- Breast cancer in men is rare, but it does occur and should be recognized as an important area for screening and treatment.
- Race is not considered a factor for increased risk of breast cancer. However, rates of death from the disease differ among ethnic groups. In Oregon, breast cancer is the leading cause of cancer associated deaths among Latino and Asian Pacific Islander women.\textsuperscript{367}
- Some women may be at risk for a later stage diagnosis due to lack of access or referral to cancer screening services. Women with disabilities and African American women are more likely to be diagnosed at later stages for breast, cervical, and colorectal cancer.\textsuperscript{368}
Prostate Cancer

The 2010-2014 incidence of prostate cancer in Lincoln County was 98 per 100,000, slightly higher than that of Oregon’s incidence of 101 per 100,000 men (Figure 6.28). Lincoln County’s mortality rate for prostate cancer was higher than that of the state, at 26 per 100,000 men compared to the state mortality rate of 21 per 100,000 men. Lincoln County’s rate did not meet the Healthy People 2020 objective to reduce the mortality rate due to prostate cancer to 22 deaths per 100,000 men.

Figure 6.28: Age-adjusted incidence and death rate of prostate cancer per 100,000 men in Lincoln, Benton, and Lincoln counties and Oregon, 2010-2014

Source: National Cancer Institute, State Cancer Profiles

Colorectal Cancer

The age-adjusted incidence of colorectal cancer in Lincoln County (40 cases per 100,000 people) is higher than the state incidence (36 cases) and other counties’ incidence in the region, as Figure 6.29 demonstrates. The mortality rate of colorectal cancer in Lincoln County, at just over 17 deaths per 100,000, is also higher than the rest. Lincoln County did not achieve the Healthy People 2020 target to reduce the mortality rate due to colorectal cancer to 14.5 deaths per 100,000 people.
Pancreatic Cancer

Pancreatic cancer is a disease in which cancer cells form in the tissue of the pancreas. Risk factors for pancreatic cancer include smoking, long-standing diabetes, chronic pancreatitis, and certain conditions such as hereditary pancreatitis.  

The age-adjusted incidence rate for pancreatic cancer in Lincoln County from 2010-2014 was over 14 cases per 100,000 persons, higher than the incidence rate in all of Oregon which was just over 12 cases per 100,000. In contrast with the other cancers discussed in this section, pancreatic cancer mortality rates are close to incidence rates, with rates of 10 per 100,000 in Lincoln County and just under 11 per 100,000 in Oregon (Figure 6.30). Pancreatic cancer is difficult to diagnose before it has advanced, so survival rates tend to be lower than for other common cancers.
Cancer Screening

Research shows that screening for cancer is effective in reducing serious consequences of the disease, which is generally more treatable when detected early. Breast and cervical cancer screening rates in the region are fairly consistent with state-level screening rates (Table 6.16). Additional data are needed to identify rates of screening among race/ethnic populations, age group and income level, as risk factors differ among different populations.

Table 6.16: Age-adjusted percent of cancer screening in Lincoln County and Oregon, 2012-2015

<table>
<thead>
<tr>
<th>Cancer screening practice</th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammogram within past 2 years (women 50-74 years old)</td>
<td>77 %</td>
<td>76 %</td>
</tr>
<tr>
<td>Pap test within past 3 years (women 21-65 years old)</td>
<td>88 %</td>
<td>82 %</td>
</tr>
<tr>
<td>Current on colorectal cancer screening (50-75 years old)</td>
<td>73 %</td>
<td>65 %</td>
</tr>
</tbody>
</table>

Table notes: Current on colorectal cancer screening includes the following: having a fecal occult blood test (FOBT) in the past year; a colonoscopy within the past 10 years; or, a sigmoidoscopy within the past 5 years as well as an FOBT within the past 3 years.

Source: Oregon Health Authority, Health screenings among Oregon adults
**Cancer among Oregon Health Plan Members**

When surveyed about whether they had ever been told they had cancer by a health care professional, 6 percent of Oregon Medicaid members reported they had (against 8.1 percent of the state’s general adult population). The lowest rate belonged to Pacific Islanders at 2.5 percent, with the highest rate going to American Indians/Alaska natives at 8 percent. The three counties served by IHN-CCO report a slightly higher rate than the state at 6.4 percent. 374

**Heart Disease and Stroke**

After cancer, heart disease is the largest contributor to the mortality rate in the region and in Oregon. When combined with stroke and adjusted for age, diseases of the circulatory system are the leading causes of death in the region and Oregon.

**Cardiovascular Disease and Stroke**

The incidence of both heart attack and stroke are higher in Lincoln County than in Oregon, as demonstrated in Figure 6.31.

*Figure 6.31: Age-adjusted incidence of heart attack and stroke per 100,000 persons in Lincoln County and Oregon, 2012-2015*

Source: Oregon Health Authority, Behavioral Risk Factors Surveillance System

Numerous health conditions and behaviors contribute to the potential for heart disease and stroke. These include:

- High blood pressure,
- High blood cholesterol,
• Diabetes,
• Obesity,
• Lack of exercise, and
• Smoking.\textsuperscript{375}

Figure 6.32 Age-adjusted percent of residents with risk factors of heart disease and stroke in Lincoln County and Oregon, 2012-2015

Many of the effects of heart disease can be reversed with healthy eating, exercise, avoidance of tobacco, and stress reduction. In addition to high blood pressure, high cholesterol, and diabetes being critical health factors of heart disease and stroke, social and economic factors are also important. For example, in the U.S., low-income adults are 50 percent more likely to suffer heart disease than top wage earners, even when other risk factors such as cholesterol or smoking, are taken into account.\textsuperscript{376}

**Heart Disease Mortality**

After cancer, cardiovascular disease is the second leading cause of death in Lincoln County.\textsuperscript{377} Across Oregon, the death rate for heart disease is higher in rural areas than urban areas.\textsuperscript{378}
Mortality rates are similar across the region (Figure 6.33), but the rate is higher in Lincoln County than in the region and the state.379

Figure 6.33: Age-adjusted heart disease mortality rate per 100,000 individuals in Lincoln County, the LBL Region, and Oregon, 2013-2015

[Chart showing heart disease mortality rates for Lincoln County, LBL Region, and Oregon with bars for each location and respective death rates: Lincoln County - 147, LBL Region - 145, Oregon - 134]

Source: Oregon Health Authority: Oregon Public Health Assessment Tool

Stroke Mortality

Stroke mortality rates in the region and in Oregon have not achieved the Healthy People 2020 target of a reduction to 34.8 deaths per 100,000 persons, but the county’s rate recently met the target (Figure 6.34).380 Lincoln County’s mortality rate for stroke is about 34 deaths per 100,000 people, and lower than Oregon’s rate of 37 deaths per 100,000 people, and the regional rate of 41 deaths per 100,000 people.
Heart Attack and Stroke among Oregon Health Plan Members

Adult Medicaid members in Oregon were also surveyed about whether they had ever had a heart attack. A little over 4 percent of members responded that they had (a value slightly lower than the general state adult population). The range in race and ethnicity included 2.4 percent from Hispanics to 6.2 percent to American Indians/Alaska Natives. Across the local region, the 5 percent heart attack report rate was a little higher than the state.381

Oregon Health Plan Stroke

When it comes to stroke, 3.8 percent of Oregon’s Medicaid population reported having had one. This is higher than the state’s population in general (2.9 percent). Only 1.3 percent of Hispanic OHP members reported they have had one, with just over 5 percent of American Indians / Alaska Natives reporting the same. Stroke rates for the IHN region are worse than the state at 4.5 percent.382

Diabetes

Diabetes in Adults

There are two types of diabetes identified by the medical community. Type 1 diabetes is a hormonal condition in which the body does not produce enough insulin to regulate the conversion of sugar and starches into energy. Type 1 diabetes is caused by genetic and unknown factors and is usually diagnosed in children. Fewer than five percent of diabetics are diagnosed with Type 1 diabetes.
In Type 2 diabetes, the body develops resistance to insulin, so that dietary sugar absorbed into the bloodstream is not converted into glycogen at a healthy rate. There are both genetic risk factors and behavioral risk factors for developing Type 2 diabetes. Because diabetes can cause serious health complications, it is important to prevent Type 2 diabetes through healthy life choices and also catch diabetes early through health screenings.383

Hereafter, Type 2 diabetes will be referred to as diabetes.

Risk factors for diabetes include the following:

- Being overweight or obese,
- having a parent or sibling with diabetes,
- having high blood pressure,
- having high cholesterol,
- being physically inactive,384 and
- smoking.385

Prevalence of diabetes among adults in Lincoln County was 9 percent from 2012-2015.386 This estimate may be conservative, however, as many people are unaware of their status. Diabetes often develops gradually as symptoms and complications can take years to manifest.

The growing burden of diabetes affects everyone in Oregon, but rates vary by age, race/ethnicity, and household income:

- Diabetes prevalence increases with age. Oregonians under 45 have the lowest rates of diabetes (2.6 percent), while 21.1 percent of adults aged 65 to 74 years of age and 18.9 percent of adults 75 years and older have been diagnosed with diabetes.
- Oregon’s Hispanic/Latino, African American, and American Indian/Alaska Native communities have significantly higher rates of diabetes than do non-Latino Whites and Asian/Pacific Islanders.
- In 2011, the prevalence of diabetes among adults with an annual household income of less than $20,000 was nearly three times that of those with an annual household income of $75,000 or more (13.8 percent versus 4.9 percent, respectively).387

**Diabetes Mortality**

Overall, 2013-2015 age-adjusted annual diabetes mortality rates have been consistently higher in Lincoln County than in the region or the state (Figure 6.35). All of these rates, however, are lower than the national diabetes mortality rate and meet the Healthy People 2020 objective of no more than 66.6 deaths per 100,000 persons.388
Early detection and prompt treatment can reduce the burden of diabetes and its complications. Table 6.17 below shows that the rates Lincoln County residents have had their blood sugar and cholesterol tested are similar to Oregon.

Table 6.17: Age-adjusted percent of adults with diabetes-related health screenings in Lincoln County and Oregon, 2012-2015

<table>
<thead>
<tr>
<th>Health screening practice</th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood sugar test within the past 3 years (45 years or older)</td>
<td>61 %</td>
<td>63 %</td>
</tr>
<tr>
<td>Cholesterol checked within the past 5 years</td>
<td>82 %</td>
<td>73 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Health screenings among Oregon adults

Diabetes among Oregon Health Plan Members

Medicaid members in Oregon report having diabetes at a rate of 11.6 percent, whereas the general adult population report a rate of 9.2 percent. The highest rate in the survey came from Pacific Islanders (22.1 percent), while other races and ethnicities were more closely bunched around 13 percent. Again, the three county region served by IHN had a slightly higher average than the state (12 percent).389
**Arthritis**

Arthritis continues to be the most common cause of disability in the United States, affecting one in five Americans. Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues and other connective tissues. The two most common types are osteoarthritis and rheumatoid arthritis.

Older adults in Oregon are disproportionately affected by arthritis. Prevalence of arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men because they live longer than men. The growth of the aging population in the region will add to the high prevalence of arthritis in the coming decades. Other risk factors include sedentary lifestyle, obesity/overweight, joint injury, and work-related joint trauma.\(^{390}\)

The latest 4-year average data available (2012 to 2015) show the prevalence of arthritis in Lincoln County is higher than Oregon’s, even after adjusting for the county’s older population. The age-adjusted rate for the county is 30 percent, while the state’s is just under 25 percent.\(^{391}\)

**Oregon Health Plan Arthritis**

Among adult Medicaid members across the state, 27.1 percent report being advised by a health care professional that they have arthritis. In terms of race and ethnicity, both Whites and American Indian/Alaska Native members have values above 30 percent. Across the region served by IHN, members report arthritis at a 29.1 percent rate.\(^{392}\)

**Asthma**

Over the past 20 years, asthma has become one of the most common chronic diseases in the United States. Oregon has one of the highest asthma rates in the nation.\(^{393}\) Asthma results in direct health care costs (e.g., hospitalizations and emergency department visits) and indirect costs (e.g., missed school and work days and days of restricted activity) that affect the quality of life for people with asthma and their families.

Common asthma triggers include:

- tobacco smoke and other smoke;
- animals with fur or feathers;
- dust mites and cockroaches;
- mold or mildew;
- pollen from trees, flowers, and plants;
- being physically active;
- air pollution;
- breathing cold air;
- strong smells and sprays; and
• illnesses, such as influenza and colds.  

Prevalence of Asthma in Adults

For the past 10 years, the percent of Oregonians with a current asthma diagnosis has been rising slowly. Oregon ranked among the top six states for the highest percentage of adults with current asthma diagnoses in 2011.

Two important risk factors contribute to the likelihood of an asthma diagnosis: tobacco use and obesity. Consequently, Oregon counties with asthma levels higher than the state average also tend to be counties with high smoking rates. Likewise, counties with high levels of obesity also tend to have increased prevalence and incidence of asthma.

Asthma rates are self-reported on the Oregon Healthy Teens survey. In 2017, 12 percent of Lincoln County 8th graders and 8 percent of 11th graders reported having asthma (Table 6.18).

Table 6.18: Asthma rates among high school students in Lincoln County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>12 %</td>
<td>10 %</td>
<td>10 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>8 %</td>
<td>11 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Just under 10 percent of Lincoln County adults have an asthma diagnosis. This is similar to the rate in Oregon, which is just under 11 percent.

Detailed information on the prevalence of asthma among other sub-populations in the region is not currently available. Even so, results from statewide surveillance suggest that prevalence varies by race/ethnicity, level of education, sexual orientation, and household income (Table 6.19).

Table 6.19: Age-adjusted prevalence of asthma in at-risk groups in Oregon, 2011

<table>
<thead>
<tr>
<th>Population characteristic</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>11 %</td>
</tr>
<tr>
<td>African American</td>
<td>12 %</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>18 %</td>
</tr>
<tr>
<td>No high school diploma</td>
<td>17 %</td>
</tr>
<tr>
<td>Gay or Lesbian</td>
<td>12 %</td>
</tr>
<tr>
<td>Bisexual</td>
<td>16 %</td>
</tr>
<tr>
<td>Household income below $15,000</td>
<td>18 %</td>
</tr>
<tr>
<td>No health insurance</td>
<td>12 %</td>
</tr>
<tr>
<td>Oregon Health Plan</td>
<td>20 %</td>
</tr>
<tr>
<td>Rural</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: African American and American Indian and Alaska Native data from 2010-2011; Gay or Lesbian and Bisexual data from 2007 – 2011 combined.
Source: Oregon BRFSS 2011
Oregon Health Plan Asthma

As far as adult Medicaid members, 16.5 percent reported having been told they have asthma. There is a wide range among different races and ethnicities, with Asian members reporting 6.8 percent and American Indians / Alaska Natives reporting 25.1 percent. Among the local region served by IHN-CCO, OHP members report an asthma rate of 17.7 percent. 398,399

Alzheimer’s disease

Alzheimer’s disease is the most common form of dementia, which is a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life. Alzheimer’s accounts for 60 to 80 percent of all cases of dementia. Alzheimer’s is also terminal, and is the 8th most common cause of death in Lincoln County. From 2014-2016, Lincoln County’s mortality rate for Alzheimer’s was about 31 per 100,000 (Figure 6.36). The Alzheimer’s mortality rate in Oregon was higher than the county when examining age-adjusted rates.

Figure 6.36: Age-adjusted Alzheimer’s disease mortality rate per 100,000 individuals in Lincoln County, the LBL Region, and Oregon, 2014-2016

Source: Oregon Health Authority: Oregon Public Health Assessment Tool

It is anticipated that the number of Oregonians with Alzheimer’s disease and related dementia will increase significantly in the next two decades, mostly due to an increase in the elderly population. Currently, about 76,000 Oregonians live with Alzheimer’s disease and this number is expected to increase to 110,000 by 2025.400

Unintentional Injury Mortality

Injuries are the number one cause of death among people under the age of 44 in Oregon and the fifth leading cause of death overall. Injury is also the number one cause of disability at all
Most of the events resulting in injury, disability, or death are preventable. According to Healthy People 2020, injuries and violence have an impact on the well-being of people by contributing to premature death, disability, poor mental health, high medical costs, and high unproductivity.

Nationally, the leading causes of death from injury are a result of motor vehicle traffic accidents, unintentional poisoning, and falls. Overall, these are the same leading causes of death resulting from unintentional injury in Oregon. However, falls is the number one cause, followed by poisoning and motor vehicle accidents. Risky behaviors, such as drinking and driving and the use of a hand-held cell phone while driving can be contributing factors to motor-vehicle traffic accidents. About three percent of Oregon adults report driving after having too much to drink on at least one occasion in the past month. About 15 percent of Oregon youth rode with a parent or other adult who had been drinking on at least one occasion in the past month.

County injury deaths differ somewhat from the state’s pattern (see Figure 6.37 below). Motor vehicle accidents contributed to 32 percent of accidental deaths between 2014 and 2016, followed by poisoning and falls. Together, these three causes comprise 80 percent of accidental deaths in the region.

Injury mortality is higher among males than females in all age groups in Oregon. Injury mortality rates increase with age for both sexes, starting at age five. The risks of different major types of injury fluctuate through a person’s life. These include, among other types, falls, unintentional poisonings, motor vehicle accidents, and self-harm.
Lincoln County residents experienced 103 total deaths by unintentional injury between 2014 and 2016, a rate of 62.3 deaths per 100,000 people per year. The Healthy People 2020 target for unintentional injury deaths is 36 per 100,000 persons.\textsuperscript{404}

**Preventing Falls**

Falls are a major cause of injury and hospitalization, and the 10\textsuperscript{th} leading cause of death among older Oregonians.\textsuperscript{405} Nearly one in three older adults experiences a fall each year, and 20-30 percent of those who fall suffer injuries. As commonly as they occur, injuries and deaths due to falls are not an inevitable consequence of aging; they can be prevented. Muscle weakness is a significant contributing factor in falls, so physical activity is widely viewed as among the most important interventions for preventing injuries related to falls among older adults.

Hospitalization rates for falls increase drastically as adults age; the rate of hospitalizations due to a fall for adults 75 years and older is more than six times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly six times more likely to be discharged into long term care compared to older adults hospitalized for other conditions. In 2013, the cost for fall injury hospitalization among adults 65 years and older in Oregon totaled to more than $219 million.\textsuperscript{406} Between 2011 and 2015, the mortality rate from falls in the region was 484 deaths per 100,000 residents age 85 and older. Figure 6.38, below, highlights the difference in mortality rates for different age groups among the elderly in the county and region.

*Figure 6.38: Fall mortality among elder adults in Lincoln County and the LBL Region, 2014-2016*

- **Lincoln**
  - 65 to 74: 30
  - 75 to 84: 113
  - 85+: 316

- **Region**
  - 65 to 74: 25
  - 75 to 84: 128
  - 85+: 484

*Source: Oregon Health Authority, Oregon Public Health Assessment Tool*
**Conclusion**

Understanding the leading causes of illness and death is a first step on the path to preventing both the loss of life and improving the quality of life within the region. While leading causes of death in the region closely mirror those of the state, examining various cancers, heart disease, and other major causes reveal areas of vast improvement, as well as areas in which the region is doing more poorly than the state average. Data on many sub-populations are noticeably absent throughout this chapter. While we know that factors such as access to health care, mental health status, and other demographics are closely linked to particular conditions at a state or national level, without more robust data we can only guess at local trends. The more detailed data we have about disparities within particular populations and illnesses, the more ability we have to address these issues effectively in the region. As discussed throughout the chapter, many of the conditions that cause illness and death within the region have well-established causes, with a number of them rooted in behaviors or risk factors that can be prevented. The following chapter takes a closer look at behaviors and risk factors that affect a person’s health and well-being across the life course.
Chapter 7
Behavioral Health

The term “behavioral health” refers to a wide range of topics, and is often used interchangeably with “mental health”. For clarity, some professionals prefer to reserve the “mental health” category for illnesses such as depression, posttraumatic stress disorder (PTSD), or schizophrenia, for example. They see substance abuse and some developmental disorders as being related to mental health but having distinct challenges that require unique classification. This chapter is organized with this consideration, so behavioral health is used as an umbrella term.

Mental Health

Mental health is often defined as our emotional, psychological, and social well-being. Mental health disorders are experienced by people of all ages, from early childhood through old age. Research suggests that only about 17 percent of U.S. adults are considered to be in a state of optimal mental health. An estimated 26 percent of Americans age 18 years and older are living with a mental health illness in any given year and 46 percent will have a mental health illness during their lifetime. These disorders include, among others, anxiety, depression, behavior disorders, persistent suicidal thoughts, schizophrenia, and Alzheimer’s disease.

County Health Rankings (from the Robert Wood Johnson Foundation) reports the number of poor mental health days each month, both as a proxy for mental health diagnoses and as an indicator of overall mental wellness. Residents of Lincoln County reported an average of 4.6 poor mental health days over the previous month. This measure is based on survey responses to the question: “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” Oregonians across the state reported an average of 4.6 poor mental health days as well. The Healthy People 2020 benchmark is 2.3, placing the region and the state in the worst 10 percent nationwide for this measure, with clear room for improvement. From 2008 to 2011, 60 to 64 percent of regional residents reported no poor mental health in the past 30 days. These rates are statistically equivalent to the statewide rate of 65 percent. From 2010 to 2013, the self-reported depression rate in Lincoln County was 31 percent, close to the state rate of 25 percent.

There is a strong link between chronic disease, injury, and mental illness. Tobacco use among people diagnosed with mental health conditions is twice that of the general population. Other associations between mental illness and chronic disease include cardiovascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer. Injury rates for both intentional and unintentional injuries are 26 times higher among people with a history of mental health conditions than for the general population. National research indicates that people with
serious mental illness die on average 25 years earlier than the general population. Sixty percent of those deaths are due to medical conditions such as cardiovascular disease, diabetes, respiratory diseases, and infectious illnesses; 40 percent are due to suicide and injury.\textsuperscript{414}

Many mental health disorders can be treated effectively, and prevention of mental health disorders is a growing area of research and practice. Early diagnosis and treatment can decrease the disease burden of mental health disorders as well as associated chronic diseases. Assessing and addressing mental health remains important to ensure that all Americans lead longer, healthier lives.\textsuperscript{415}

**Substance Abuse and Mental Health Services Administration**

The Substance Abuse and Mental Health Services Administration (SAMHSA) is a part of the U.S. Department of Health and Human Services that deals with “reducing the impact of substance abuse and mental illness on America’s communities.” SAMHSA defines “any mental illness” among adults over 18 as “currently or at any time in the past year having had a diagnosable mental, behavioral, or emotional disorder (excluding developmental and substance use disorders)” as described by the Diagnostic and Statistical Manual of Mental Disorders (published by the American Psychiatric Association). If the condition results in a “functional impairment which substantially interferes with or limits one or more major life activities”, or would have without intervention, then it meets the standard for “serious mental illness”.\textsuperscript{416}

SAMHSA conducts an annual survey, called the National Survey on Drug Use and Health (NSDUH), which provides sub-state estimates of a variety of mental health and substance abuse topics. However, SAMHSA does not evaluate individual counties but instead divides the state into regions. Region 3 includes Lincoln, Benton, and Linn counties, but includes Clatsop, Columbia, Lane, Marion, Polk, Tillamook, and Yamhill as well.\textsuperscript{417} Therefore the SAMHSA statistics represented by figures in this chapter should be interpreted in the correct context.

For both the state of Oregon and Region 3 specifically, about one quarter of individuals in the NSDUH survey age 18-25 report experiencing “any mental illness” within the last year. There is a slight drop in those rates for older adults, but they remain over 20 percent (see Figure 7.1). Approximately 1 in 20 Oregon adults experience “serious mental illness” regardless of age category (Figure 7.2), and this also remains consistent in Region 3.
Mental Illness among Oregon Health Plan Members

The Oregon Health Authority produces annual county behavioral health profiles for OHP members. The most recent publicly available profile was produced in 2015. These data provide information about the population receiving the Oregon Health Plan and that population’s mental health and demographics.
For the purposes of understanding the data from the behavioral health profile, it should be clear that it includes identified mental health conditions. Data focus on receiving mental health services or treatment, so actual prevalence is likely underestimated. As seen in Figure 7.3, a little over 1 in 3 OHP members aged 12-17 have received some type of service(s) for a mental health condition. These results are consistent from Linn County to the state level. Children under age 12 are also consistently lower, with a 5 to 6 percent difference from their older counterparts.

![Figure 7.3: OHP members age 0-17 with a mental health condition in Lincoln County, the LBL Region, and Oregon, 2015](source)

In OHP adults aged 18 and older, the profile separates “Mild or Moderate” from “Severe” mental health disorders. Severe disorders involve serious functional impairment. If someone has a Severe disorder, they cannot also be counted in the Mild or Moderate category. Though the prevalence remains the same in both age groups for mild or moderate disorders, the prevalence of severe disorders increases in the 26 and older population. This may be explained by the later onset of certain serious disorders including schizophrenia.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Severity of mental health disorder</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>Mild or moderate</td>
<td>28 %</td>
<td>24 %</td>
<td>27 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>8 %</td>
<td>9 %</td>
<td>8 %</td>
</tr>
<tr>
<td>26+</td>
<td>Mild or moderate</td>
<td>28 %</td>
<td>27 %</td>
<td>28 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>13 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority Behavioral Health Profiles
Another group of particular concern regarding mental health is the incarcerated population. In Oregon, the provision of effective mental health service has been shown to lead to positive outcomes. These outcomes include a dramatic drop in arrests, reduction in the likelihood and duration of incarceration, and fostering of self-sufficiency and well-being as a result of improved social, emotional, and vocational functioning. Approximately 3,400 adults with mental illnesses were incarcerated in prisons in Oregon in 2010. This was a prevalence of approximately 24 individuals with mental illness for every 100 incarcerated individuals.

Depression

Depression is the most common type of mental illness and it is estimated that it affects more than 26 percent of the U.S. adult population. Depression is characterized by a depressed or sad mood, diminished interest in activities which used to be pleasurable, weight loss or gain, fatigue, psychomotor agitation or retardation, inappropriate guilt, difficulties concentrating, and recurrent thoughts of death.

Depression has many degrees of severity, including dysthymia (a chronic, persistent mild depression) to major depressive disorder (clinical depression). A major depressive episode (MDE) is defined by SAMHSA as experiencing a depressed mood or loss of interest or pleasure in daily activities and a majority of specified depression symptoms lasting over 2 weeks within the last year. Both the state and Region 3 experience similar MDE rates. The data also indicate that the probability of experiencing MDE decreases with age (Figure 7.4).

Figure 7.4: Children (ages 12-17), Young Adults (18-25), and Adults (26+) that experienced a Major Depressive Episode in the Past Year in Oregon and Region 3, annual averages from 2012-2014

Source: Substance Abuse and Mental Health Services Administration
Perinatal Depression

Maternal depression, or perinatal depression, is a depressive disorder characterized by feelings of sadness or hopelessness, reduced interest or pleasure in activities, changes in weight/appetite, sleeping disruption or too much sleep, restlessness or irritability, or diminished ability to think or concentrate during pregnancy and/or soon after giving birth. Mothers with maternal depression are less likely to engage in healthy parenting behaviors. As a result, mother-infant bonding and attachment can be compromised. In extreme cases, mothers with maternal depression have harmed themselves or their babies.\textsuperscript{426}

In Oregon, nearly 1 in 5 (18.8 percent) new mothers report symptoms of depression during and/or after pregnancy. This figure has been relatively constant since 2009.\textsuperscript{427} Regional and county-level data depicting maternal depression are currently limited; however, state-level data can provide some insight into the experiences of mothers in the region.

The most recent detailed data on maternal depression and disparities among women in Oregon is from 2004 to 2008:

- Low-income women are twice as likely to report depressive symptoms as high-income women (36.2 percent versus 16.7 percent).
- Current smokers are 50 percent more likely to report depressive symptoms than non-smokers (33.5 percent versus 21.7 percent).
- Women who experienced partner stress are twice as likely to report depressive symptoms (42 percent versus 16.2 percent).
- Racial/ethnic minority mothers are more likely to report depressive symptoms than White mothers (Hispanic 31.1 percent versus White 20.8 percent).
- Teen mothers are more likely to report depressive symptoms than older mothers (36.3 percent of those < 20 years old versus 16.9 percent of 35 years and older).\textsuperscript{428}

Increased Risk of Suicide

Depression is also the most common underlying cause of suicide, which the National Institute of Health defines as “death caused by self-directed injury with intent to die as a result of the injury”.\textsuperscript{429} In Oregon, suicide rates are higher than the national average. About 70 percent of people who died by suicide from 2003 to 2012 had a diagnosed mental health condition, and the most common of those (about 70 percent) was depression.\textsuperscript{430}

Suicide

Suicide is the leading cause of injury-related death in the state and the 9\textsuperscript{th} leading cause of death overall for Oregonians. It is a serious public health concern. It relates not only to injury
and violence, but also mental health. While many unintentional injuries can be prevented by making one’s environment safer, suicide can also be effectively prevented by providing treatment to those with mental health disorders. Therefore, suicide is discussed in the context of mental health. Lincoln County recorded 26 suicides per 100,000 residents between 2011 and 2015. The statewide rate in the same period was 17 per 100,000 persons.431

Factors associated with an increased risk of suicide include:

- having a family history of suicide;
- having a family history of child maltreatment;
- having previously attempted suicide;
- having a history of mental disorders, particularly clinical depression;
- having a history of alcohol and substance abuse;
- living in an area where there is a local epidemic of suicide;
- isolation or feeling cut off from other people;
- encountering barriers to accessing mental health treatment;
- encountering loss (relational, social, work, or financial);
- having a physical illness;
- having easy access to lethal methods; and
- an unwillingness to seek help due to the stigma attached to mental health and substance abuse disorders or to suicidal thoughts.432

While protective factors against suicide have not been studied as extensively as risk factors, they are equally important. Factors that have been found to buffer individuals from suicidal thoughts or behavior include:

- effective clinical care for mental, physical, and substance abuse disorders;
- easy access to a variety of clinical interventions and support for help seeking;
- family and community support (connectedness);
- support from ongoing medical and mental health care relationships; and
- skills in problem solving, conflict resolution, and nonviolent ways of handling disputes.433

**Suicidal Ideation**

Suicidal ideation, or having suicidal thoughts, can be as seemingly minor as a fleeting notion or as considerable as planning. Regardless, it is a significant factor that increases the risk of making an actual suicide attempt.434 The NSDUH survey measured suicidal ideation among adults (Figure 7.5). Young adults ages 18-25 consider or think about suicide at more than twice the rate as adults 26 and older, and this is consistent in both Region 3 and at the state level.
Overall, the suicide rate among Lincoln County adult males is 2.7 times the rate among adult females.\textsuperscript{435} The total suicide rate increases with age, but this is due primarily to the outsize effect of male suicide rates, which increase with age. Among males of all age groups in the region from 2012 to 2016, males over the age of 65 had the highest suicide rate at 44.6 per 100,000 men (Figure 7.6).\textsuperscript{436} Females had a much lower rate of suicide, averaging 10.2 per 100,000 women, and this rate does not increase with age. The suicide rate among women peaks at 15 per 100,000 women between the ages of 45 and 64.\textsuperscript{437}

Due to the small numbers of suicides in a given year, data presented here are aggregated across the LBL Region for confidentiality and more accurate estimates.
Figure 7.6: Suicide rates per 100,000 men, per 100,000 women, and per 100,000 individuals, with regional age-adjusted averages, 2012-2016

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Race/Ethnicity

Suicide events among non-white individuals are rare in the region, therefore race/ethnicity data cannot be reported at the regional level for confidentiality and reliability reasons. However, state suicide rates in the following figure may be used to understand trends in suicide deaths by race and ethnicity among all age groups (Figure 7.7).
Suicide among Veterans

Veterans are twice as likely as nonveterans to die by suicide. Approximately 23 percent of suicides that occurred in Oregon between 2008 and 2013 were among veterans, but less than 9 percent of Oregonians were veterans during that time. Of those, 97 percent of veteran suicides were male. Overall, male veterans had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male nonveterans). However, the ratio between female veterans and female nonveterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female nonveterans). Between 2008 and 2012, 15 veterans in Lincoln County died by suicide.

Youth Bullying and Mental Health Challenges

Childhood and adolescence are formative times in a person’s life. The number and severity of adverse experiences during childhood affects an individual’s risk for alcoholism, depression, heart disease, liver disease, intimate partner violence, sexually transmitted infections, smoking, and suicide. Adverse events include emotional, physical, and sexual abuse and neglect, and various types of household dysfunctions such as violence against mothers, substance abuse, mental illness, parental separation or divorce, or an incarcerated household member.

Peer Abuse

The same factors that influence where people live and the opportunity they have to be healthy (income, employment, education) are also linked to the occurrence of violence. Violence in schools can affect the learning environment and contribute to absenteeism. Students who are bullied, harassed, and feel unsafe or otherwise victimized are more likely to miss classes, skip
school, feel depressed, or exhibit problem behaviors. Research shows that comprehensive discipline, positive behavioral support, and anti-bullying programs in schools can reduce the incidence of harassment among primary and secondary school students.442

Figure 7.8 shows the percentage of students in 2017 that did not go to school at least once in the past 30 days due to feeling unsafe at school or on their way to school. Eleventh graders in Lincoln County reported missing school at a lower rate than their peers statewide, but county 8th graders reported a much higher rate (over 12 percent) than the state.443

Figure 7.8: Percent of students, 8th and 11th grade, that did not go to school one or more times in the past 30 days due to feeling unsafe at school or on their way to or from school in Lincoln County, the LBL Region, and Oregon, 2017

Source: Oregon Healthy Teens Survey

Figure 7.9 below shows that reasons for harassment at school differ among age groups at the regional level, and that the overall incidence of harassment among county students is common. While the percentage of students who report having been harassed at school in the past month tends to decrease with age, reasons for and severity of harassment vary among age groups. Aside from all or other reasons, harassment for physical characteristics is the most reported reason for harassment across all age groups.444
Gender Identity and Sexual Orientation

Adolescence is a time of developing sexual awareness and gender expression, although many children are aware of their developing gender identity from a very early age. Because most state and national surveys do not ask questions related to sexual orientation or gender identity, it is difficult to estimate the health needs of lesbian, gay, bisexual, transgender, or queer children, youth, and adults in the region and Oregon.

Available data include survey responses on harassment among adolescents in our public schools. Across the county, region, and state during the 2016-2017 school year, 8th graders reported having been harassed by a peer who thought they were gay, lesbian, bisexual, or transgender more frequently than 11th graders (Figure 7.10). Overall, harassment based on perceptions about sexual orientation declines with age.445,446, 447
Sexual Pressure among Youth

The Oregon Healthy Teens Survey also asks 11th graders if they experienced pressure to have sex in the past year. Fifteen percent of Lincoln County 11th graders reported having been pressured to have sex, which is greater than the proportion statewide.

Source: Oregon Healthy Teens Survey
Depression and Suicide among Youth

Based on the bullying and harassment data alone, youth often face circumstances that may make them uniquely vulnerable to mental health challenges. Table 7.2 highlights the percentage of 8th and 11th grade students in the region that exhibited signs of depression, thought about suicide (suicidal ideation), or attempted suicide during 2017. The rate of attempted suicide is higher among 8th graders in the region than among 11th graders in the region.448

Table 7.2: Percent of 8th and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months, Lincoln County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major depressive episode</td>
<td>8th grade</td>
<td>35 %</td>
<td>30 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>33 %</td>
<td>30 %</td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td>8th grade</td>
<td>22 %</td>
<td>19 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>20 %</td>
<td>19 %</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>8th grade</td>
<td>12 %</td>
<td>9 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>5 %</td>
<td>7 %</td>
</tr>
</tbody>
</table>

Table notes: Major depressive episode was asked as: feeling so sad or hopeless for two weeks that the youth stopped doing most normal activities.
Source: Oregon Healthy Teens Survey

Alcohol, Tobacco, and Prescription and Illicit Drug Abuse

Alcohol and prescription medications are consumed appropriately and responsibly by most of the population. However, problems frequently occur when they are over-consumed, used inappropriately, combined with other substances, or consumed while engaging in risky activities such as driving or unsafe sexual activity. The cost to society from the misuse of alcohol, prescription medications, and other drugs is massive. Beyond direct injury and death due to misuse and overdose, there are other health-related complications. There are many potential consequences for children exposed to drugs during their mothers’ pregnancy, as well as impacts on family and the contribution to crime and homelessness. The spread of infectious disease, including through sexual transmission and needle sharing, can be at least partially attributed to drug use. The financial costs associated with lost productivity, health care, and legal expenses for individuals and the wider community are far-reaching.449

Research has shown that people are most likely to misuse drugs—including tobacco, alcohol, and illegal and prescription drugs—during adolescence and young adulthood. Misuse of substances at an early age (particularly before age 18) is shown to be an important predictor of substance use disorders later in life, making this period an important focus for prevention efforts.450

Some of the primary factors related to whether an adolescent tries drugs include the availability of drugs in the home, neighborhood, and community, as well as the home environment. Adolescents who experience violence, emotional or physical abuse, mental
illness, or drug use in the home are at increased risk of using drugs. In addition, certain genetic factors and mental health conditions (including depression, anxiety, and poor impulse control) increase the likelihood that an adolescent will use drugs.451

**Alcohol Use**

The younger a person begins drinking alcohol regularly, the greater the chance that person will develop a clinically defined alcohol disorder. Youth who start drinking before age 15, compared to those who start at age 21, are far more likely to be injured while under the influence of alcohol, to be in a motor vehicle crash after drinking, or to become involved in a physical fight after drinking.452 Overall, alcohol use among Lincoln County youth tends to increase with age, reflecting the state trend displayed in Table 7.3. In 2015, thirty-nine percent of Lincoln County 8th graders said it would be “very easy” or “sort of easy” to obtain alcohol. This proportion almost doubled to 70 percent of 11th graders, and is similar to the rest of the LBL Region and to Oregon.453

**Binge Drinking**

Binge drinking, in which a person consumes a significant amount of alcohol in a short period of time, is associated with the same serious health problems as other forms of alcohol abuse. Middle and high school youth in the region and Oregon report binge drinking at similar rates. Approximately 7 percent of Lincoln County 8th graders reported binge drinking in 2017 (Table 7.3). These rates increase to 14 percent among 11th graders.454 The county likely meets the Healthy People 2020 objective of reducing the percentage of high school seniors (12th graders) who binge drink to below 23 percent, but it is not possible to directly compare the rates between 11th graders and 12th graders.455

**Table 7.3: Percent of youth who reported consuming alcohol in the past 30 days in Lincoln County, the LBL Region, and Oregon, 2017**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumed at least one alcoholic beverage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>12 %</td>
<td>9 %</td>
<td>12 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>24 %</td>
<td>24 %</td>
<td>37 %</td>
</tr>
<tr>
<td><strong>Consumed at least 5 alcoholic beverages on one occasion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>5 %</td>
<td>5 %</td>
<td>5 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>10 %</td>
<td>12 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

**Alcohol Abuse among Adults**

Excessive drinking is a risk factor for many adverse health outcomes, such as hypertension, alcohol poisoning, unintended pregnancy, fetal alcohol syndrome, interpersonal violence, and
motor vehicle crashes. It can also contribute to a number of health issues including heart
disease and stroke, high blood pressure, cirrhosis, coma, and even death.

Excessive drinking is defined differently for men and women, due to different metabolic rates
and average body weights. Among men, excessive drinking is defined as two or more alcoholic
drinks per day for a period of 30 days. In Lincoln County, about 6 percent of men reported
excessive drinking. For women, excessive drinking is defined as one or more alcoholic drinks per
day for a period of 30 days. Eight percent of women reported excessive drinking (Table 7.4).

Binge Drinking among Adults

For adults over the age of 18, binge drinking is defined as consuming five or more drinks at one
time for men and four or more drinks at one time for women. Binge drinking is more
common across the region and in the state than drinking every day. About 17 percent of males
and 15 percent of females in Lincoln County reported binge drinking within the previous month
between 2010 and 2013 (Table 7.4). The Healthy People 2020 goal is to reduce the
percentage of adults that report having engaged in binge drinking within the previous month to
24.4 percent.

Table 7.4: Age-adjusted alcohol abuse among adults, 18 years and older in Lincoln County and Oregon, 2010-2013

<table>
<thead>
<tr>
<th>Consumption Description</th>
<th>Sex</th>
<th>Lincoln County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumed at least two alcoholic beverages per day for the past 30 days Male</td>
<td>5.8 %</td>
<td>7.9 %</td>
<td></td>
</tr>
<tr>
<td>Consumed at least one alcoholic beverage per day for the past 30 days Female</td>
<td>8.1 %</td>
<td>8.1 %</td>
<td></td>
</tr>
<tr>
<td>Consumed at least 5 alcoholic beverages on one occasion in the past 30 days Male</td>
<td>17. %</td>
<td>22.4 %</td>
<td></td>
</tr>
<tr>
<td>Consumed at least 4 alcoholic beverages on one occasion in the past 30 days Female</td>
<td>15.1 %</td>
<td>13.2 %</td>
<td></td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS

Oregon data indicate that older adults are much less likely to engage in excessive or binge
drinking. Table 7.5 demonstrates a clear decline in binge drinking as adults progress from
middle age to their retirement years.
Table 7.5: Excessive drinking and binge drinking among older adults who drink in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Excessive drinking</strong></td>
<td>Men</td>
<td>7 %</td>
<td>6 %</td>
<td>6 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>7 %</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td><strong>Binge drinking</strong></td>
<td>Men</td>
<td>21 %</td>
<td>13 %</td>
<td>8 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>13 %</td>
<td>8 %</td>
<td>3 %</td>
</tr>
</tbody>
</table>

Table notes: Excessive drinking is defined as more than two drinks (men) or one drink (women) per day for the past 30 days. Binge drinking is defined as more than five drinks (men) or four drinks (women) on one occasion within the past 30 days. Denominators are all survey respondents who reported having at least one drink in the past 30 days. Source: Oregon Health Authority, Oregon BRFSS

Binge Drinking among Oregon Health Plan Members

According to the 2014 MBRFSS report, about 10 percent of IHN-CCO members reported binge drinking in the previous 30 days. This is slightly lower than the proportion of all adult Oregon Medicaid members (12 percent). Binge drinking varied among different population groups, from 4.5 percent among Asian OHP members to 16 percent among American Indian and Alaska Native OHP members.461

Tobacco Use

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Tobacco use in any form can cause serious diseases and health problems, including cancers of the lung, bladder, kidney, pancreas, mouth, and throat; heart disease and stroke; lung diseases (e.g., emphysema, bronchitis, and chronic obstructive pulmonary disease); pregnancy complications; gum disease; and vision problems.462

Smoking patterns are predictive of increased rates of future disease and early death. Smokers die, on average, 10 years earlier than nonsmokers.463 Health impacts are more severe among those with lower socio-economic status as well. In the United States, low-income smokers are more likely to become ill and die sooner from tobacco-related diseases than smokers who have a higher income.464

Tobacco Use among Adolescents

Tobacco products are designed to deliver nicotine, an addictive drug that causes tobacco users to crave repeated doses. Youth are especially sensitive to nicotine and can become dependent more quickly than adults. Because of their dependency, nearly three out of four teen smokers continue using tobacco products into adulthood.465

There was a more than 50 percent decrease in cigarette smoking rates for 11th graders from 2008 to 2015.466,467 This decline continued in 2017, with smoking rates dropping again since the previous survey.
Table 7.6: Percent of youth who reported smoking cigarettes in the past 30 days in Lincoln County, the LBL Region, and Oregon, 2015 and 2017.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Year</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>2015</td>
<td>8 %</td>
<td>5 %</td>
<td>4 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>3 %</td>
<td>4 %</td>
<td>3 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>2015</td>
<td>7 %</td>
<td>9 %</td>
<td>9 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>6 %</td>
<td>5 %</td>
<td>8 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Due to their growing popularity, 2015 was the first year the Oregon Healthy Teens Survey asked students about electronic cigarette use. Among both 8th and 11th graders, and in all three counties, electronic cigarette use was significantly higher than smoking cigarettes (Tables 7.6, 7.7). Seven percent of Lincoln County 8th graders reported smoking cigarettes, but 10 percent reported using e-cigarettes. That difference is consistent with 11th graders, as they were also much more likely to use e-cigarettes than smoke (10 percent e-cigarette use versus 7 percent smoking). Lincoln County rates were similar to Oregon rates in all of these categories.

In 2017, Oregon Healthy Teens survey data indicated a decline in e-cigarette use among youth. This is consistent with national trends, although the rate of e-cigarette users is lower in Lincoln County than in Oregon or the U.S.

Table 7.7: Percent of youth who reported using e-cigarettes in the past 30 days in Lincoln County, the LBL Region, and Oregon, 2015 and 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Year</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>2015</td>
<td>10 %</td>
<td>10 %</td>
<td>9 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>4 %</td>
<td>6 %</td>
<td>6 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>2015</td>
<td>10 %</td>
<td>16 %</td>
<td>17 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>7 %</td>
<td>12 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Tobacco Use among Adults

The smoking rate among adults has been slowly decreasing throughout the region as a whole, but Lincoln County has consistently had among the highest smoking rates in the state. In both of the most recent BRFSS results (2010-13 and 2012-15), the county had the highest rate of smoking of all Oregon counties at over 30 percent. The current Healthy People 2020 objective is to reduce the percent of adults who currently smoke to 12 percent or below.
Statewide, far fewer older adults are current smokers than are adults between the ages of 45 and 64. Furthermore, there is a greater proportion of former smokers among the elderly than among younger adults. The data suggest that older adults are both more likely to quit and are more likely to have smoked when they were younger than adults age 45 to 64. Table 7.8 displays these data. Due to Lincoln County’s older population and high smoking rate, it is important to remember that this age and sex distribution of smoking may not reflect the county specifically.

Table 7.8: Current and former smoking status in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current smoker</strong></td>
<td>Men</td>
<td>20 %</td>
<td>19 %</td>
<td>10 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>19 %</td>
<td>17 %</td>
<td>9 %</td>
</tr>
<tr>
<td><strong>Former smoker</strong></td>
<td>Men</td>
<td>23 %</td>
<td>36 %</td>
<td>53 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>20 %</td>
<td>32 %</td>
<td>35 %</td>
</tr>
</tbody>
</table>

Tobacco’s toll on the health and economy of Lincoln County each year is significant. For example, in 2014:

- 10,000 adults regularly smoked cigarettes,
- 3,318 people suffered from a serious illness caused by tobacco use,
- 170 people died from tobacco-related deaths,
- $33.8 million was spent on medical care for tobacco-related illnesses, and
- $27.1 million in productivity was lost due to tobacco-related deaths.\(^{471}\)
Secondhand Smoke Exposure

Secondhand smoke is a mixture of the smoke exhaled by a person smoking, and the smoke from burning tobacco in a cigarette, pipe, or cigar. Secondhand smoke contains the same toxic chemicals and carcinogens as inhaled tobacco smoke, and even brief exposure has been found to put a nonsmoker’s health at risk. In adults, secondhand smoke exposure has been found to cause lung cancer and heart disease. Children exposed to secondhand smoke are more at risk for ear infections, asthma attacks, respiratory symptoms and infections, and sudden infant death syndrome (SIDS).

According to the Oregon Healthy Teens survey, approximately 36 percent of Lincoln County 8th graders and 40 percent of 11th graders live with someone who smokes or vapes. This rate is higher than the state proportions of 30 percent in each grade. Measures to reduce the amount of secondhand smoke exposure to others include, but are not limited to, quitting smoking, forbidding smoking in the home, and forbidding smoking in a shared car. Approximately 80 percent of Lincoln County residents have rules against smoking in the home.

Tobacco Use among Oregon Health Plan Members

There is a tremendous difference in tobacco use between Medicaid members and the general population among adults in Oregon. Approximately 31.3 percent of OHP adult participants either smoke or chew tobacco, compared to 18.4 percent of all Oregon adults. Only 9.9 percent of Hispanic members use tobacco, but 41.1 percent of American Indians / Alaska Natives do. The local region’s Medicaid population fares even worse than the state, with 35.2 percent of members using tobacco.

Marijuana, Prescription Drug, and Illicit Drug Use

Recreational marijuana is still illegal for all individuals under 21 years of age. The effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. Another major public health concern is the abuse of prescription drugs. When these drugs are misused or taken without a doctor’s prescription, they can be just as harmful as illegal street drugs. This section focuses on adolescents who choose to abuse prescription drugs as opposed to accidental poisonings. Discussed in this section, illicit drugs include cocaine, methamphetamine, and heroin.

In 2015, marijuana use was generally more than twice as common as cigarette smoking (Table 7.8). Lincoln County rates were higher than the rest of the region and the state among 8th graders, and marijuana use increased across geographies from 8th grade to 11th grade. In the county, one out of every four 11th graders surveyed reported using marijuana in the past 30 days in 2015. The 2017 Oregon Healthy Teens survey shows a drastic drop in marijuana use among 8th graders, from 22 percent to 5 percent. Benton and Linn counties and the state of Oregon also show decreases, although none of these other areas had a high a rate in 2015. It is
reasonable to assume that the 2015 Lincoln County estimate was high and the 2017 estimate is low.

Table 7.9: Percent of youth who reported consuming marijuana in the past 30 days in Lincoln County, the LBL Region, and Oregon, 2015 and 2017

<table>
<thead>
<tr>
<th>Grade</th>
<th>Year</th>
<th>Lincoln County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>2015</td>
<td>22 %</td>
<td>11 %</td>
<td>9 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>5 %</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>2015</td>
<td>23 %</td>
<td>21 %</td>
<td>19 %</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>21 %</td>
<td>17 %</td>
<td>21 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Approximately 1 in 20 Lincoln County youth abuse prescription drugs. There was no change in 2017.

Marijuana Use among Adults

While marijuana use is legal for individuals 21 years and older, the effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. County data are not available for marijuana use among adults. However, state data demonstrate some patterns that may hold for local populations. Statewide, two-thirds of BRFSS survey respondents under the age of 65 who reported ever using marijuana said that they were 17 or younger the first time they tried it. The 65 and older age group is an outlier, which is probably because marijuana was not culturally widespread in the United States until the late 1960s. A 65-year-old in 2014 was 20 in 1969, older than the average age of first use.

Additional data from Oregon BRFSS in 2014 is displayed below.

Table 7.10: Proportion of respondents in Oregon who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>49 %</td>
<td>54 %</td>
<td>67 %</td>
<td>27 %</td>
</tr>
<tr>
<td>Women</td>
<td>48 %</td>
<td>50 %</td>
<td>55 %</td>
<td>18 %</td>
</tr>
<tr>
<td>Both</td>
<td>49 %</td>
<td>52 %</td>
<td>62 %</td>
<td>22 %</td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS

Table 7.11: Proportion of respondents reporting marijuana use in the past 30 days in Oregon among those who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>52 %</td>
<td>35 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Women</td>
<td>23 %</td>
<td>19 %</td>
<td>15 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Both</td>
<td>48 %</td>
<td>23 %</td>
<td>16 %</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: These percentages only reflect usage among people who have ever used marijuana.
Source: Oregon BRFSS

Taken together, these two tables indicate that young adults (age 18-24) are actually less likely to have ever used marijuana than older generations (ages 45-64). However, young adults are
much more likely than older adults to be active users of marijuana, suggesting that historically many adults stopped using marijuana as they aged. There are no data available yet to indicate whether this pattern will hold after marijuana legalization, or if current young adult marijuana users will continue to use marijuana as they age.

**Marijuana Use among Oregon Health Plan Members**

About 17.6 percent of Oregon adult Medicaid members surveyed reported using marijuana in the previous 30 days, compared with 22.6 percent of all Oregon adults. There is again a wide range of rates between different races and ethnicities, with Asian Medicaid members being the lowest (3 percent) and both African American and American Indian / Alaska Native members being the highest (23 percent). The OHP population served by the IHN-CCO reported roughly the same results as the state (17.5 percent).\(^{477}\)

**Prescription Drugs, Opioids, and Illicit Drugs**

Another particular area for concern is the misuse of prescription drugs. Misuse of these drugs is highest among young adults (aged 18 to 25).\(^ {478}\) As the most commonly abused type of prescription drugs, painkillers provide a useful marker for prescription drug misuse trends. While data show little change in the self-reported pain experienced by Americans, the amount of painkillers dispensed in the U.S. has quadrupled since 1999, as have the deaths resulting from prescription painkillers. Although this epidemic represents an enormous burden to society, 2012 saw a national drop in both prescribing rates and prescription overdose deaths. This is the first decrease since the 1990s, offering promise for further progress in reversing the epidemic.\(^ {479}\) Oregon (along with the majority of states) has implemented a system in an attempt to track and improve prescribing practices around certain types of controlled substances, including painkillers. The Oregon Prescription Drug Dashboard uses information provided by Oregon-licensed retail pharmacies to help track prescription drug use, hospitalizations, and deaths.\(^ {480}\)

Opioids are a common drug class of interest, and have been getting increased media attention recently. In the 4th quarter of 2016, there were 291 opioid prescriptions per 1,000 Oregon residents, out of 395 total prescriptions per 1,000 residents. As a comparison, Lincoln County had 318 opioid prescriptions per 1,000 residents and 527 total prescriptions per 1,000 residents during the same time period. See Table 7.12 and 7.13 for more data relating to other prescription drug classes and region values.

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>All opioids</td>
<td>318</td>
<td>270</td>
</tr>
<tr>
<td>Sedatives (including Benzodiazepine)</td>
<td>150</td>
<td>128</td>
</tr>
<tr>
<td>Stimulants and pseudoephedrine</td>
<td>48</td>
<td>41</td>
</tr>
<tr>
<td>Methadone and muscle relaxants</td>
<td>11</td>
<td>9</td>
</tr>
</tbody>
</table>

*Source: Oregon Prescription Drug Dashboard*

---

Attachment 10: CHAs and CHPs
Table 7.13: Prescription rates per 1,000 residents by drug class in the LBL Region, 4th quarter of 2016 and 4th quarter of 2017.

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>All opioids</td>
<td>244</td>
<td>218</td>
</tr>
<tr>
<td>Sedatives (including Benzodiazepine)</td>
<td>115</td>
<td>100</td>
</tr>
<tr>
<td>Stimulants and pseudoephedrine</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>Methadone and muscle relaxants</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

In Lincoln County, the LBL Region, and Oregon, high prescription rates are associated with higher rates of hospitalization and death due to drug overdose. Lincoln County had an annual rate of about 42 hospitalizations per 100,000 residents due to drug overdose between 2012 and 2014 and a rate of 12 deaths per 100,000 residents due to drug overdose between 2014 and 2016.\(^{481}\) This equates to one hospitalization for every 1,200 prescriptions and one death for every 4,400 prescriptions. A comparison of hospitalizations and deaths in Lincoln County, the LBL Region, and Oregon is shown in Figure 7.13 below.

**Figure 7.13:** Annual drug overdose hospitalizations and deaths in Lincoln County, the LBL Region, and Oregon, 2012-2014 and 2014-2016.

Figure notes: Data are 3-year averages of annual rates for both drug overdose hospitalizations (2012-2014) and deaths (2014-2016). 
Source: Oregon Prescription Drug Dashboard

In Lincoln County, approximately one third of drug-related hospitalizations and three quarters of the deaths were due to opioids. Most of the others were due to other prescription drugs, with a very limited number due to illegal drugs.\(^{482}\)
Illicit Drug Use and Prescription Drug Misuse among Oregon Health Plan Members

A very small percentage (1 percent) of adult OHP members report having used meth, heroin, cocaine, crack, or ecstasy in the previous 30 days, and there are no equivalent data for the state in general. Similarly low values across races and regions for Medicaid members make it difficult to conclude any significant differences.

Similarly, about 1.4 percent of adult OHP members report misusing prescription pain relievers in the previous 30 days. Again, there are no data for the general state population. Hispanic members represent the low end of the range at 0.7 percent, while African Americans reported the high end at 3 percent. The region served by IHN reports a rate of 1.8 percent for misusing prescription pain relievers.483

Age Differences in Opioid Use and Overdose

Drug use is more prevalent among young adults. National Survey on Drug Use and Health (NSDUH) data indicate that approximately 10 percent of Oregonians age 18-25 have used prescription drugs for non-medical purposes within the last 30 days. This is about twice the rate of both children age 12-17 (5 percent) and adults age 25 and older (4 percent).484

According to the Oregon Prescription Drug Dashboard, drug overdoses are more common among older adults than children or young adults. The age groups are not strictly comparable with data from the NSDUH, but the rate of hospitalization in Oregon among adults age 45 and older is twice the rate of adults age 18-44. In the LBL Region, there were no recorded hospitalizations of adults over age 65, but the hospitalization rate was twice as high among adults age 45-64 as among young adults.

However, this trend is reversed for death rates, with the death rate among adults age 18-64 being four times as high as the rate among adults age 65 and older in both the LBL Region and Oregon. Table 7.13 displays these figures.

Table 7.13: Hospitalization and death rates per 100,000 people due to opioid overdose among adults in the LBL Region and Oregon, by age, 2012-2016

<table>
<thead>
<tr>
<th>Age group</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalization rate per 100,000 people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>0</td>
<td>1.4</td>
</tr>
<tr>
<td>18 – 44</td>
<td>7.9</td>
<td>7.9</td>
</tr>
<tr>
<td>45 – 64</td>
<td>17.6</td>
<td>17.9</td>
</tr>
<tr>
<td>65 – 74</td>
<td>0</td>
<td>17.9</td>
</tr>
<tr>
<td>75 and older</td>
<td>0</td>
<td>15.0</td>
</tr>
<tr>
<td>Death rate per 100,000 people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 18</td>
<td>0</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>18 – 44</td>
<td>7.9</td>
<td>10.0</td>
</tr>
<tr>
<td>45 – 64</td>
<td>15.0</td>
<td>10.4</td>
</tr>
<tr>
<td>65 – 74</td>
<td>5.2</td>
<td>2.6</td>
</tr>
<tr>
<td>75 and older</td>
<td>0</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

Source: Oregon Prescription Drug Dashboard
Conclusion

Mental health disorders and illnesses can be addressed and treated effectively, with prevention and early diagnosis and treatment the surest method to reduce the disease burden of mental health illnesses and any of their associated chronic physical illnesses. A number of social, environmental, and economic circumstances, such as those described in previous chapters, can influence an individual’s mental health as well as their physical health. These multifaceted inputs to poor mental health make it necessary to take a thoughtful, informed approach to address the root causes of mental illness.
Chapter 8
Health through an Equity Lens

This summary, taken from Healthy People 2020, is a good introduction to the concept of health equity:

Healthy People 2020 defines health equity as the “attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.”

Healthy People 2020 defines a health disparity as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.”

There are many challenges in describing the key health equity issues in Lincoln County and its communities. First and foremost, to describe inequities, we need data that both encompasses populations facing inequities and the health inputs or outcomes that embody those inequities. Populations and communities experiencing inequities tend to be small, marginalized, or underrepresented. In contrast, data collection efforts tend to focus on large, privileged, and well-represented groups. Therefore, health equity data frequently suffers from large margins of error, poor specificity, and sometimes the complete absence of information that truly reflects marginalized communities. These factors greatly restrict which health equities can be presented from a data perspective.

Another challenge to describing health inequities is the interconnected nature of health equity. As an example, experiencing homelessness is a major inequity. It arises from “historical and contemporary injustices”, lack of access to services, and marginalization. In addition, being homeless is a major cause of health inequities. People who experience homelessness have much worse health outcomes as a direct result of not having a home.

Different groups and communities often define health in different ways. This can make it challenging both to measure and to describe health inequities in different populations. As an example, if one community’s measure of health is to have a large household with many generations, while another community’s measure is the ability to live independently, the same question asked of people sixty-five and older (“Do you live alone?”) could provide evidence of a healthy or an unhealthy community. Even more straightforward measures of health, such as disparate cancer diagnosis rates, could represent either an inequity in outcomes or better
access to care. If cancer diagnosis rates in a community rise, it could be because cancer is an inequitable burden on that community, or it could be because access to cancer screening has improved.

The standard approach to health equity (listing distinct groups or topics), is also limited by the intersectionality of individuals and communities. Lisa Bowleg of Drexel University describes intersectionality as “… a theoretical framework that posits that multiple social categories (e.g., race, ethnicity, gender, sexual orientation, socioeconomic status) intersect at the micro level of individual experience to reflect multiple interlocking systems of privilege and oppression at the macro, social-structural level (e.g., racism, sexism, heterosexism)...Public health studies that reflect intersectionality in their theoretical frameworks, designs, analyses, or interpretations are rare.” Every topic presented in this chapter is a part of the health equity landscape of Lincoln County and cannot be considered alone.

Regardless of the challenges of describing health equity in Lincoln County, it is a critical measure of our community’s health. In this chapter, different populations are described that have generally faced inequities in their health.

**Race and Ethnicity**

About eighty-three percent of Lincoln County residents are white, non-Hispanic, according to the U.S. Census Bureau. It should be noted that residents without fixed addresses are frequently overlooked by Census Bureau surveys. These populations include migrant farmworkers and people experiencing homelessness. Nevertheless, the long history of Oregon and Lincoln County as communities that excluded or discouraged non-white immigration has led to many “historical and contemporary injustices” that contribute to inequities in health factors and outcomes.

**Poverty and Income**

Poverty rates in Lincoln County are much higher for non-white populations. The poverty rate among white, non-Hispanic Lincoln County residents is approximately 17 percent. Most other races and ethnicities have higher rates of poverty, as is shown in Figure 8.1, below. It should be noted that due to very small populations of Asian, Black or African American, and Native Hawaiian or Pacific Islander groups, the error in those estimates are quite large and the data should be interpreted with caution.
Median incomes in Lincoln County tend to be lower for non-white populations. The median income among white, non-Hispanic Lincoln County residents is approximately $41,800. Most other groups have a median income between $31,000 and $37,000. Due to small representative populations, data for Black or African American and Native Hawaiian and Pacific Islander populations is unavailable. The error for Asian and “Other race” populations are also high, so results should be interpreted with caution.
Figure 8.2. Median income, stratified by race and ethnicity. Lincoln County, 2012-2016

<table>
<thead>
<tr>
<th>Race or Ethnicity</th>
<th>Median Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>$36,200</td>
</tr>
<tr>
<td>Asian</td>
<td>$36,100</td>
</tr>
<tr>
<td>Black or African American</td>
<td>$NA</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>$35,900</td>
</tr>
<tr>
<td>Multiple races</td>
<td>$31,600</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>$NA</td>
</tr>
<tr>
<td>Other race</td>
<td>$49,800</td>
</tr>
<tr>
<td>White, not Hispanic or Latino</td>
<td>$41,800</td>
</tr>
</tbody>
</table>

Figure notes: Due to very small populations of Asians and “Other race”, the error is large and the data should be interpreted with caution. Data for Black or African American and Native Hawaiian or Pacific Islander groups have been suppressed.

Source: U.S. Census Bureau American Community Survey

Home Ownership

Home ownership is the most reliable way to build wealth in the United States. Furthermore, home ownership usually creates stability for families if they don’t have to worry about rents rising, evictions, or inability to maintain the health of their living space since they are renters, not owners.

It is important to note the term “household” in the context of race or ethnicity. Any group of people living together in a housing unit, whether as a family or not, has the potential to include individuals of different racial backgrounds. Historically, the census used the term “head of house” and this position was assumed to be the adult male in a family when one was present. Although this practice was discontinued decades ago, the U.S. Census Bureau must still identify a “householder” in any occupied housing unit with more than one resident. This is true even in cases where title or rental agreement include more than one adult. When households (instead of individuals) are described in terms of race or ethnicity, it means the race or ethnicity of the designated householder.487

Data on home ownership in Lincoln County are difficult to stratify by race due to small numbers of non-white households, but it is possible to draw a comparison between home ownership among white, non-Hispanic households and Hispanic households (Figure 8.3). Overall, about 63 percent of housing units in Lincoln County are occupied by owners (with or without a mortgage), as opposed to renters. Among white, non-Hispanic households, the ownership rises to 66 percent. However, only 34 percent of Hispanic or Latino households own the home they live in.
Early learning

A good education and opportunities to learn are key components of building a healthy life. Learning and development begins before school. The Oregon Department of Education produces a report each year on kindergarten readiness in Oregon counties and CCO regions. The Early Learning Hub of Linn, Benton, and Lincoln Counties analyzed the data and identified disparities in readiness among non-white children. Children who identify as a minority were 24 percent more likely to score below average readiness in early literacy and 13 percent more likely to score below average readiness in early math. The largest non-white race or ethnicity represented among kindergartners in the LBL Region are Hispanic or Latino children. They had a 50 percent increased risk of scoring below average on early reading and a 26 percent increased risk for scoring below average on early math. 488

Maternal health and teen pregnancy

Access to health care during and following pregnancy is an area where significant health equity issues exist. In Lincoln County, 14 percent of white, non-Hispanic pregnant women had inadequate medical care or did not have any medical care during their pregnancies. In contrast, over 18 percent of Hispanic or Latino pregnant women lacked adequate care. See Figure 8.4 below.
Figure 8.4. Inadequate or no prenatal care among pregnant women, by race and ethnicity. Lincoln County, 2009-2016.

A number of other birth risk factors also display racial inequities. These data are presented in the table below.

Table 8.1. Percent of births where the mother had a birth risk factor, by race and ethnicity. Lincoln County, 2009-2016

<table>
<thead>
<tr>
<th>Race or ethnicity</th>
<th>Maternal smoking</th>
<th>Gestational diabetes</th>
<th>Unhealthy weight gain during pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>31 %</td>
<td>5 %</td>
<td>65 %</td>
</tr>
<tr>
<td>Asian</td>
<td>6 %</td>
<td>24 %</td>
<td>42 %</td>
</tr>
<tr>
<td>Black or African American</td>
<td>13 %</td>
<td>0 %</td>
<td>38 %</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7 %</td>
<td>11 %</td>
<td>41 %</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>21 %</td>
<td>7 %</td>
<td>57 %</td>
</tr>
<tr>
<td>Two or more races</td>
<td>27 %</td>
<td>11 %</td>
<td>62 %</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>24 %</td>
<td>9 %</td>
<td>56 %</td>
</tr>
</tbody>
</table>

Teen pregnancy is another area where racial and ethnic inequities exist. While the teen pregnancy rate among Hispanics and Latinas has decreased in both Lincoln County and the LBL Region overall, those rates still remain higher than the corresponding rates for all teens. During
2013-2015, the teen pregnancy rate in Lincoln County among Hispanic and Latina women was 27.5 births per 1,000 teenage women, compared to 17.1 births per 1,000 teenage women in general region. Figure 8.5 demonstrates how most of these rates have declined over time.

**Figure 8.5. Pregnancy rates among teenagers age 15-19, Lincoln County and the LBL Region, 2009 - 2016**

![Graph showing pregnancy rates among teenagers age 15-19, Lincoln County and the LBL Region, 2009 - 2016](image)

*Figure notes: Pregnancy rates are aggregated across 3 years.*
*Source: Oregon Public Health Assessment Tool*

### Oregon Health Plan members and racial and ethnic inequities

When surveyed by the Oregon Health Authority, close to eight percent of IHN-CCO members said that they feel their experiences with health care are worse than other races and ethnicities (these data include respondents who identified as white). Statewide, Black or African American respondents were most likely to feel this way (16 percent), compared to an average of 6.4 percent of all respondents. Statewide, non-white Oregon Health Plan members were much more likely to experience physical or emotional symptoms due to treatment based on race, compared white Oregon Health Plan members.489

### Sex and gender

There are many health disparities that exist between men and women based on biology. Women are much more likely to be diagnosed with breast cancer than men, while other cancers (such as prostate cancer) only occur in men. Maternal health risks such as preeclampsia only affect women. However, other health disparities that exist between men and women are not due to intrinsic difference, but to inequities. One challenge in reporting equity issues at the county level is the scarcity of county-level data that both addresses equity and stratifies by sex. Count Her In, a report of the Women’s Foundation of Oregon, identifies 8 major topics that affect women’s health and wellbeing. These are:
1. Violence against women,
2. Cost of caregiving,
3. Gaps in reproductive health access,
4. Wage/wealth gap,
5. Economic fragility,
6. Mental health challenges,
7. Public/private glass ceiling, and
8. Systemic racism.490

**Sexual and domestic violence**

As discussed in the Injury and Violence section of Chapter 6 (Physical Health), My Sisters’ Place responded to nearly 1,000 contacts related to sexual or domestic violence from Lincoln County in 2017. The organization provided emergency shelter and other services, including 2,004 bed-nights.

This topic was also approached by several questions in the Oregon Healthy Teens Survey for 11th graders, but the results from the surveys at the county level are not given in terms of gender breakdown. The state results, however, may be able to shed some light in this regard. For example, Oregon’s statewide “yes” response rate to the question, “Have you ever been physically forced to have sexual intercourse when you did not want to?” was 6.1 percent. When observing separate rates for 11th grade girls and boys, though, girls answered “yes” at a rate of 9.6 percent and boys answered “yes” 1.7 percent of the time. In other words, girls acknowledged this had happened 6 times more often than boys did.

It should not be taken for granted that the same relative difference in response rates between genders exists in Lincoln County. The actual results could demonstrate a lower or higher difference. It is worth noting, however, that Lincoln County’s overall rate was higher than Oregon’s at 8.3 percent. If a similar difference between genders existed in the county as in the state, then 13.1 percent of 11th grade girls and 2.3 percent of 11th grade boys responded that they had been physically forced to have sexual intercourse in their lifetime. That is a rate of more than 1 in 8 girls in the 11th grade.

Applying a similar method, 16.8 percent of girls (about 1 in 6) said that an adult had had sexual contact with them compared to 4.1 percent of boys; 27.4 percent of girls (more than 1 in 4) said that an adult had physically hit or hurt them on purpose, compared to 23.5 percent of boys; and 26.3 percent (more than 1 in 4) of girls said that they had been pressured into sex when they didn’t want to, compared to 4.4 percent of boys.
Poverty and economic instability

Single women with children are at a much higher risk of poverty and economic instability compared to married women or single men with children. The median household income for a married couple with children is $57,900, but there is a stark difference in median income between single men with children and single women with children. Single-woman families make just over half of what single-men make (see Figure 8.6). This corresponds to 56 percent of single women with children living below the federal poverty line in Lincoln County, more than double the 25 percent rate of single men with children.491

Figure 8.6. Median incomes of families with children, stratified by head of household, Lincoln County, 2012-2016.

<table>
<thead>
<tr>
<th>Head of family</th>
<th>Median Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married couple</td>
<td>$57,800</td>
</tr>
<tr>
<td>Single male</td>
<td>$30,500</td>
</tr>
<tr>
<td>Single Female</td>
<td>$17,200</td>
</tr>
</tbody>
</table>

Figure notes: There are approximately 2,250 married couples with children, 1,110 single women with children, and 710 single men with children in Lincoln County. Source: U.S. Census Bureau, American Community Survey, Table B19126

For single women with children, the cost of child care can be completely out of reach. The median annual cost of child care in Lincoln County was $6,000 in 2014, over one-third of the median single mother’s income.492 This may in fact be one of the reasons that the median income of single mothers is low – child care may be too expensive for them to afford to work. However, it doesn’t explain the gap between men and women. Median annual rent in Lincoln County is $9,900, more than half of the median income among single mothers.493

Sixty-six percent of households headed by single women in Lincoln County receive SNAP benefits (food stamps), compared with 38 percent of households with children headed by single men and 24 percent of married couple families with children.
Disability status

Individuals with disabilities are not inherently less healthy than able individuals. However, many individuals with disabilities encounter barriers to achieving health which create inequities. As with many groups, specific data on health equity issues facing individuals with disabilities are scarce. According to the American Community Survey, 22 percent of Lincoln County residents have disabilities. As discussed in Chapter 2, this figure may underestimate the true proportion.

Employment is the major source of income for most individuals in the United States, especially for individuals who do not have significant wealth. Therefore the ability to find and hold a job is a powerful socioeconomic determinant of health. In addition, steady work generally contributes to an increased sense of self-worth, independence, and integration with the community. Individuals with disabilities are far less likely to work than individuals without disabilities. Only 29 percent of individuals with disabilities ages 18-64 in Lincoln County are employed, compared with 73 percent of residents the same age and without disabilities.

Figure 8.7. Labor force participation, stratified by disability status, Lincoln County, 2012-2016

The Oregon Department of Human Services tracks reports of abuse against vulnerable adults, including adults with self-care and cognitive disabilities. There is no comparable data to definitively point to an increased rate of abuses against these vulnerable adults compared to the general population. The Department of Human Services Office of Adult Abuse Prevention and Investigations reported that for 2015, there were 98 investigated allegations of abuse against adults with intellectual and/or developmental disabilities, of which 53 were substantiated. Of the substantiated claims, 26 occurred in care facilities and 27 took place in community settings.494
Age

Everyone has different health issues and health needs at different ages. Age is an intrinsic quality as opposed to a social construct, and everyone experiences different ages throughout their lifetimes. However, the society in which we live privileges some age groups and disadvantages others. In general, adults age 25 to 50 experience fewer health equity issues because they are young enough to avoid age-associated illness and old enough to work, drive, and make their own healthy decisions.

Children

Socioeconomic determinants of health

Children are at increased risk of food insecurity compared to the general population. According to the Oregon Department of Education, 58 percent of Lincoln County children in public schools qualify for free or reduced-price lunches.\textsuperscript{495} Another measure produced by Feeding America estimates that 24 percent of children under 18 in Lincoln County are estimated to be food insecure, compared to 15 percent of the general population.\textsuperscript{496}

While it is difficult to accurately measure the number of residents who experience homelessness, the data suggest that Lincoln County children are at increased risk for housing instability compared to the general population. According to the Oregon Department of Education, 11.9 percent of the Lincoln County School District students were homeless at some point in the 2016-2017 academic school year.\textsuperscript{497} The best estimate of homelessness in the general population suggests that less than 1 percent of the general population experienced homelessness in 2015.\textsuperscript{498}

Abuse

In 2017, there were a total of 1,292 reports of suspected child abuse or neglect in Lincoln County. As a result of these reports, 203 victims of child abuse or neglect were identified.\textsuperscript{499} The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94.1 percent of reports in Oregon); parents account for 77.5 percent of all perpetrators.\textsuperscript{500} Child abuse rates in Lincoln County have remained significantly higher than Oregon and the region (see Figure 8.8).\textsuperscript{501,502,503,504}
Figure 8.8: Child abuse rate per 1,000 for children under 18 years of age in Lincoln County, the LBL Region, and Oregon, 2013-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Lincoln</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>15.5</td>
<td>12.3</td>
<td>11.7</td>
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<tr>
<td>2014</td>
<td>12.6</td>
<td>11.7</td>
<td>12.0</td>
</tr>
<tr>
<td>2015</td>
<td>16.3</td>
<td>12.1</td>
<td>12.7</td>
</tr>
<tr>
<td>2016</td>
<td>21.6</td>
<td>13.6</td>
<td>12.7</td>
</tr>
<tr>
<td>2017</td>
<td>21.7</td>
<td>14.4</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Figure notes: Rates include neglect, physical abuse, sexual abuse, threat of harm, and mental injury. Population data used by Oregon DHS are one year behind the year shown and is from the Office of Juvenile Justice and Delinquency Prevention.

Source: Oregon Department of Human Services, Child Welfare Data Books

Behavioral health

Data on suicidal ideation suggests that teenagers are nearly twice as likely to seriously consider suicide as young adults and more than four times as likely as other adults. Eighteen percent of eighth graders reported suicidal ideation, compared to 9 percent of young adults age 18-25 and less than 4 percent of adults age 26 and older.\textsuperscript{505}

Older adults

Many health equity issues for older adults are related to an environment that is not supportive of older adults with mobility limitations. Older adults who do not drive and do not live near public transport systems are at risk for poorer access to health care, food insecurity, and social isolation. The driving time to a primary care medical clinic in Lincoln County can be close to an hour for some parts of Lincoln County, and there are no regularly scheduled public transportation systems that serve the outlying part of the county. There is limited access in the county to programs such as Dial-A-Ride that provide reduced-cost services to seniors in Newport and Lincoln City.

Food insecurity is a major concern among older adults, particularly when considering mobility or transportation barriers. In 2016, Meals on Wheels provided 232,000 meals to older adults in Lincoln, Benton, and Linn counties who are unable to leave their homes to get food.\textsuperscript{506}
Suicide rates among men age 65 and older are the highest of any other age group in the LBL Region; there were over 44 suicides per 100,000 men age 65 and older between 2012 and 2016, compared to 28 suicides per 100,000 men overall and about 19 suicides per 100,000 residents (men and women).507

Immigration and documentation status

Access to health care

Immigrants without documentation are excluded from receiving insurance through the Affordable Care Act.508 This means they cannot get Medicaid insurance through the Oregon Health Plan or Medicare if they are over 65. Historically, undocumented children were ineligible for insurance through the Children’s Health Insurance Plan (CHIP). Furthermore, undocumented immigrants are not able to enter into formal employment, preventing them from having employer-provided health insurance. In order to seek medical care, most undocumented immigrants turn to safety net clinics, emergency rooms, and social service agencies.

In 2017, the Lincoln Community Health Center provided care to 37 patients who were classified as agricultural workers (less than 1 percent of their total patients). There is no data specifically about immigrants without documentation.509

Since immigrants without documentation do not have legal access to most government services, there is very little data collected about their health. This is a major challenge in describing their health inequities.

Other potential sources of health inequities are supported by state or national data but lack local data:

- Many immigrants without documentation work in agricultural industries, which have higher rates of injury and exposures to pesticides than other industries, or construction, which has higher rates of injury than many other industries.510
- Immigrants without documentation are excluded from government services such as Medicaid and housing vouchers. This exacerbates poverty among this group.511
- Immigrants without documentation frequently have limited English ability, raising barriers to accessing care and services if those services are not provided in the immigrants’ languages.
- Many immigrants without documentation are at risk of deportation if they encounter immigration authorities. As a result, many immigrants avoid seeking services, and many immigrants are at higher risk of abuse due to fear of reporting abuse to authorities.
Cover All Kids

One major step to improving access to care for immigrants without documentation was taken by the Oregon Legislature when it passed the “Cover All Kids” legislation, which extends eligibility for the Oregon Health Plan to all children in Oregon living in households up to 300 percent of the Federal Poverty Level, regardless of residency status. Cover All Kids went into effect on January 1st, 2018.

Veteran status

There are approximately 5,614 veterans who live in Lincoln County, almost 15 percent of the population who are age 18 or older.

Mental health

There are no available local data detailing disparities in mental health status between veterans and non-veterans. National data indicate that combat veterans are two to four times as likely to have post-traumatic stress disorder (PTSD) as non-veterans. Reported PTSD rates among combat veterans at Veterans Affairs primary care clinics average 12 percent, compared to an estimated 6 percent among non-veterans. Another study found that the diagnosis rate of PTSD in veterans was 36 per 100,000 veterans each year between 2001 and 2014. Veterans were diagnosed with major depressive disorder at a rate of 9 diagnoses per 100,000 veterans over the same time period.

Suicide among veterans

Veterans are twice as likely as nonveterans to die by suicide. Male veterans in Oregon had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male non-veterans). The ratio between female veterans and female non-veterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female non-veterans). Between 2008 and 2012, 15 veterans in Lincoln County died by suicide.

Disability status

In Lincoln County, veterans are nearly twice as likely to have a disability as non-veterans. According to American Community Survey data, 44 percent of the county’s veterans have a disability, compared to 22 percent of non-veterans.

Lesbian, Gay, Bisexual, and Transgender populations

There is a scarcity of data indicating health inequities among the lesbian, gay, bisexual, and transgender (LGBT) population in Lincoln County and in Oregon.
National data indicates that LGBT adults are more likely to smoke cigarettes or binge drink than adults in the general population. Bisexual adults are much more likely to report experienced psychological distress than either straight, gay, or lesbian adults.\textsuperscript{519}

The Centers for Disease Control reports that “Gay, bisexual, and other men who have sex with men made up an estimated 2 percent of the population but 55 percent of people living with HIV in the United States in 2013”.\textsuperscript{520} Men who have sex with men are also more likely to contract other sexually transmitted infections such as gonorrhea. Approximately 5 percent of Oregon men are gay, but 42 percent of men who have been diagnosed with gonorrhea report sex with other men.\textsuperscript{521}

**Income and poverty**

Income is the largest single determinant of health in the United States. Individuals in poverty or with low incomes are more likely to have unstable housing, have unreliable transportation, food insecurity, poor access to health care, and live in less healthy environments. All of these trends hold in Lincoln County to various degrees.

In addition to social determinants of health, income is closely linked with health behaviors and health outcomes. A comparison of the Oregon Behavioral Risk Factors Surveillance System and its Medicaid counterpart demonstrate this very clearly:

- Out of fourteen healthy and risky behaviors, IHN-CCO (Medicaid) members scored worse on eight of them than Lincoln County as a whole. IHN-CCO members scored better in regards to tobacco use, secondhand smoke, trying to quit, and eating fruits and vegetables. Given the county’s serious challenges with tobacco use (described earlier), it is not surprising that Medicaid participants in the region scored better in these areas.
- Out of nine chronic diseases, IHN-CCO (Medicaid) members scored worse in six of them than Lincoln County as a whole (IHN-CCO members scored better on angina, arthritis, and cancer).
- IHN-CCO (Medicaid) members scored worse on all of six measures of recommended preventive health screenings and services (such as mammograms and testing for high blood sugar) when compared to the general population of Lincoln County.\textsuperscript{522}
Conclusion
Meeting Challenges Together

As highlighted throughout this Community Health Assessment (CHA) report, there are many factors that influence and affect health outcomes both positively and negatively in Lincoln County. The CHA provides an opportunity to identify the many health concerns, disparities and impacts that residents face in their daily lives.

A health assessment is truly important to help identify needs and opportunities for improvement. At the same time, it is important to highlight the various strengths and assets that are alive and well within our communities. These strengths and assets refer to the many types of human, social, and economic resources that our region can offer to address problems. Organizations, agencies, and partners within and across the three counties can collaborate to improve the health and quality of life for residents. Together we can build a road to better health for the region.

General Health Status

In 2018 Lincoln County was ranked 34 out of 36 Oregon counties for health outcomes, and 29 out of 34 for health factors.\textsuperscript{523} It is clear in these numbers that the county has a lot of opportunity ahead to work on improving overall health status for the residents who live here. The County Health Rankings look at the different factors and conditions that affect the health and well-being of county residents, and are made up of four categories: health behavior, clinical care, social and economic factors, and physical environment.

Lincoln, Benton, and Linn counties have several rich community resources that can help meet the identified challenges and needs in the region. A few highlights of the many resources are summarized here.

Knowledge and Skills in Caring for and Promoting Health

The three-county region shares a long history of collaboration and partnership among various organizations and agencies to improve and promote health.

- Across the three counties, a unified Tobacco Prevention & Education Program aims to reduce tobacco-related illness and death. There also exist other population-based prevention and chronic disease programs that reduce the onset and incidence of many chronic conditions and help residents in the region take control of their health.
- The county is home to a variety of medical care, dental care, vision care, elder care, medical clinics, doctors, nurse practitioners, and alternative medicine which can be expanded upon to meet the needs of all residents.
• The county is part of a single Coordinated Care Organization (InterCommunity Health Network CCO) which unifies services and systems for Oregon Health Plan (Medicaid) patients within the Linn-Benton-Lincoln region. This includes a broad partnership and a number of collective projects, committees, and initiatives.
• The Lincoln County health department works in close collaboration with the Benton and Lincoln County health departments. Information and surveillance is shared, resources are pooled, and expertise is lent as needed between the counties.

Social Support Networks

• Lincoln County shares a comprehensive network of social support and opportunity for the aging population with Benton and Linn counties.
• The region offers specialized support for people with mental illness, addictions, disabilities, and children with behavioral or emotional problems.
• The region shares a strong commitment to the health and wellbeing of children and youth. This commitment includes a focus on issues such as increasing family stability, kindergarten readiness, and equitable service coordination. Numerous organizations exist to address education, nutrition, and social support for children and families.

Without being able to call out every organization and project that supports the health of the region, what is shown above only highlights a few examples; each example is the result of efforts by countless community partners. A wealth of collective action and resources exists within and across the Lincoln, Benton, and Linn counties region. Overcoming the many health challenges facing residents depends on this collective action and the vitally important part that each of our community partners play.
# Acronyms used throughout the Regional Health Assessment document

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACA</td>
<td>Affordable Care Act</td>
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<tr>
<td>ACS</td>
<td>American Community Survey</td>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>BMI</td>
<td>Body Mass Index</td>
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<td>BRFSS</td>
<td>Behavioral Risk Factor Surveillance System</td>
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<td>CARDV</td>
<td>Center Against Rape and Domestic Violence</td>
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<tr>
<td>CCO</td>
<td>Coordinated Care Organization</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>CHA</td>
<td>Community Health Assessments</td>
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<td>CHIP</td>
<td>Community Health Improvement Plan</td>
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<td>CLAS</td>
<td>Culturally and Linguistically Appropriate Services</td>
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<td>CLCCHC</td>
<td>Cultural Competency in Health Care</td>
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<td>DEQ</td>
<td>Department of Environmental Quality</td>
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<td>DMAP</td>
<td>Division of Medical Assistance Programs</td>
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<td>DSM</td>
<td>Diagnostic and Statistical Manual</td>
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<td>ECD</td>
<td>Early Childhood Development</td>
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<td>EDs</td>
<td>Emergency Departments</td>
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<td>Fetal Alcohol Spectrum Disorders</td>
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<td>FPL</td>
<td>Federal Poverty Level</td>
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<td>FOBT</td>
<td>Fecal Occult Blood Test</td>
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<td>Federally Qualified Health Centers</td>
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<td>GED</td>
<td>General Education Development</td>
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<tr>
<td>GFR</td>
<td>General Fertility Rate</td>
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<td>HIV</td>
<td>Human Immuno-Deficiency Virus</td>
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<td>HPSA</td>
<td>Health Professional Shortage Areas</td>
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<td>IHN-CCO</td>
<td>InterCommunity Health Network Coordinated Care Organization</td>
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<td>IOM</td>
<td>Institute of Medicine</td>
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<td>Law Enforcement Agencies</td>
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<td>LGBTQ</td>
<td>Lesbian, Gay, Bi-sexual, Transgender, Queer</td>
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<td>MDE</td>
<td>Major Depressive Episode</td>
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<td>MSFW</td>
<td>Migrant Seasonal Farmworkers</td>
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<td>MSP</td>
<td>My Sisters’ Place</td>
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<td>NHDR</td>
<td>National Healthcare Disparities Report</td>
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<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
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<td>OCCC</td>
<td>Oregon Coast Community College</td>
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<td>Acronym</td>
<td>Description</td>
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<td>ODF</td>
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<td>Oregon Head Start</td>
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<td>Occupational Safety and Health Administration</td>
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<td>OSU</td>
<td>Oregon State University</td>
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<tr>
<td>PCP</td>
<td>Primary Care Provider</td>
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<tr>
<td>PDMP</td>
<td>Prescription Drug Monitoring Program</td>
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<td>PM&lt;sub&gt;2.5&lt;/sub&gt;</td>
<td>Particulate Matter</td>
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<tr>
<td>PPD</td>
<td>Postpartum Depression</td>
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<tr>
<td>PRAMS</td>
<td>Pregnancy Risk Assessment Monitoring System</td>
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<td>SIDS</td>
<td>Sudden Infant Death Syndrome</td>
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<td>SNAP</td>
<td>Supplemental Nutrition Assistance Program</td>
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<td>Sexually Transmitted Diseases</td>
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<td>STI</td>
<td>Sexually Transmitted Infections</td>
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<td>TFR</td>
<td>Total Fertility Rate</td>
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<td>USDA</td>
<td>US Department of Agriculture</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WIC</td>
<td>Women, infants, and children</td>
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456 Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Adult and Community Health. (2004). Sociodemographic Differences in Binge Drinking Among Adults. MMWR, 58(12); 301-304. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5812a1.htm


https://www.cdc.gov/hiv/group/msm/index.html


Oregon BRFSS 2010-2013 County tables; Oregon Medicaid BRFSS 2014.

Appendix A

Maps of Lincoln County health indicators

This appendix presents 17 maps of Lincoln County. The first eight maps (A.1 through A.8) show Lincoln County demographics and social determinants of health. The other nine maps (A.9 through A.17) show estimates of chronic disease and health risk factors, organized alphabetically. Each map is preceded by a description on the facing page.

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A.1 Population density
A.2 Median age by block group
A.3 Proportion of residents who do not identify as white, non-Hispanic by block group
A.4 Household poverty rate by block group
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A.6 Proportion of households that are renters by block group
A.7 Proportion of households that receive SNAP benefits by block group
A.8 Estimated disability prevalence by census tract
A.9 Estimated arthritis diagnosis rate by census tract
A.10 Estimated asthma diagnosis rate by census tract
A.11 Estimated binge drinking prevalence by census tract
A.12 Estimated cancer diagnosis rate by census tract
A.13 Estimated depression diagnosis rate by census tract
A.14 Estimated diabetes diagnosis rate by census tract
A.15 Estimated heart disease diagnosis rate by census tract
A.16 Estimated obesity prevalence by census tract
A.17 Estimated smoking prevalence by census tract

Definition of a census tract and census block group.

According to the U.S. Census Bureau, census tracts are small, relatively permanent statistical subdivisions of a county or equivalent entity that generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. A census block group is a subdivision of a census tract, generally containing between 600 and 3,000 people.

All demographic maps in this appendix are based on data aggregated at the block group level. All chronic disease and risk factor maps are based on data aggregated at the census tract level.

Since data is aggregated, estimated numbers may change from one side of a census border to another. This does not represent the reality on the ground, but is generally a reasonable approximation.
Health indicator shading and dot density

One challenge in overlaying health data on census tracts (or block groups) is that rural census tracts are larger but have fewer people than urban census tracts. Shading a whole rural census tract will therefore overstate the on-the-ground reality of the data, since the human eye equates larger areas with larger numbers.

In order to avoid this visual illusion, these maps illustrate population density and health indicators by using a combination of shading and dot density. The shading of the dots indicates the probability of the indicator in question. A darker shade means a higher probability. The density of the dots indicate the population density. These dots are not individuals or individual addresses. They are randomly placed in accordance with population densities calculated from census block populations. Rural census tracts have many fewer dots than urban tracts, thereby giving more appropriate weight to the smaller urban census tracts.

Throughout this appendix, all but two maps use a brown color palette for better contrast. There are two exceptions. The population density map uses blue dots across the whole county to illustrate population density. The racial and ethnic diversity map uses shades of blue to avoid creating a visual connection between more diversity and darker brown shades. Darker shading corresponds to higher numbers (probabilities). This convention is used consistently in these maps. However, higher numbers do not necessarily indicate worse (or better) indicators. For example, there is no better or worse median age from a health standpoint, just different median ages.

Siletz Tribal Lands

The Confederated Tribes of Siletz Indians owns approximately 15,000 acres of land in Lincoln County. These lands are indicated on all seventeen maps.
A.1 Population density in Lincoln County

Lincoln County, 2010

Map notes:

The population density in Lincoln County is estimated from the population counts completed during the 2010 Census. The dots do not correspond to any specific address. Each dot represents approximately 10 households in the vicinity. No actual addresses are identified in this map.

Certain, isolated addresses may exist in the unpopulated areas of Lincoln County; these addresses have been excluded in order to preserve anonymity.

Data source:

U.S. Census Bureau 2010 Census.
Population density

Lincoln County
2012-2016

Dots indicate population density. Each dot represents approximately 10 people.

Siletz Tribal Lands

StateHighways

Lincoln City
Siletz
Newport
Toledo
Waldport

American Community Survey 2012-2016 data
A.2 Median age of the population, by census block group

Lincoln County, 2012-2016

Map notes:

The median age by census block group is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. Median age estimates at the census block group level are reliable.

A darker shading corresponds to a higher median age.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Median age of the population

Lincoln County
2012-2016

Siletz Tribal Lands

- State Highways

Median age of the population
- 34 - 40
- 41 - 47
- 48 - 56
- 57 - 64

Dots indicate population density. Each dot represents approximately 10 people.
A.3 Racial and ethnic diversity, by census block group

Lincoln County, 2012-2016

Map notes:

Racial and ethnic diversity is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. The specific data used is the proportion of residents who do not identify as “White, not Hispanic or Latino”, according to the U.S. Census Bureau definition. Race and ethnicity estimates at the census block group level are generally reliable, but the U.S. Census Bureau does not survey individuals without fixed addresses, such as migrant workers. Therefore these data should be interpreted to refer only to residents with fixed addresses.

The blue color palette is used here to avoid creating a visual connection between more diversity and darker shades of brown.

The palette does align with the convention in this appendix that larger numbers correspond with darker shades. There is no “better” or “worse” proportion of non-white community members, just different proportions.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Racial and Ethnic Diversity

Lincoln County
2012-2016

Siletz Tribal Lands

Proportion of the population that does not identify as white

- 0% - 8%
- 9% - 18%
- 19% - 37%
- 38% - 48%

Dots indicate population density. Each dot represents approximately 10 people.
A.4 Household incomes below the federal poverty level, by census block group

Lincoln County, 2012-2016

Map notes:

The household poverty rate by census block group is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. The household poverty rate is the proportion of households in the block group that are below the federal poverty level. A household is defined as one or more people who occupy a housing unit. Households generally do not include shared living facilities such as dormitories, barracks, and assisted living facilities. The federal poverty level is actually many different poverty levels, one for each household size. Household poverty rate estimates at the census block group level are reliable.

A darker shading corresponds to a higher poverty rate.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Household incomes below the federal poverty level (FPL)
Lincoln County
2012-2016

Siletz Tribal Lands

| Proportion of households with incomes below the FPL |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| 6% - 12%        | 13% - 17%       | 18% - 24%       | 25% - 35%       |

Dots indicate population density. Each dot represents approximately 10 people.
A.5 Households with a housing cost burden, by census block group

Lincoln County, 2012-2016

Map notes:

The proportion of households with a housing cost burden is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. A household has a housing cost burden if 30 percent or more of annual household income is spent on housing costs (rent for renters, mortgage and taxes for owners). Housing cost burden estimates at the census block group level are reliable.

A darker shading corresponds to a higher proportion of households with a cost burden (not a higher dollar cost burden).

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Households with a housing cost burden

Lincoln County
2012-2016

Proportion of households with a housing cost burden

- 18% - 27%
- 28% - 36%
- 37% - 43%
- 44% - 57%

Dots indicate population density. Each dot represents approximately 10 people.
A.6 Households occupied by renters, by census block group
Lincoln County, 2012-2016

Map notes:

The proportion of households that are renters is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. Renter-occupied housing estimates at the census tract block group are reliable.

A darker shading corresponds to a higher proportion of renters.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Households occupied by renters

Lincoln County
2012-2016

Siletz Tribal Lands

Proportion of households occupied by renters
- 14% - 19%
- 20% - 28%
- 29% - 50%
- 51% - 77%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

American Community Survey 2012-2016 data
BRFSS 2014-2015 data
A.7 Households receiving SNAP benefits, by census block group

Lincoln County, 2012-2016

Map notes:

The proportion of households that receive SNAP benefits (Food Stamps) is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2012-2016. Estimates of households receiving SNAP benefits at the census block group level are reliable.

A darker shading corresponds to a higher proportion of households receiving SNAP benefits.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Data source:

Households receiving SNAP benefits

Lincoln County
2012-2016

Siletz Tribal Lands

Proportion of households receiving SNAP benefits

- 0% - 13%
- 14% - 21%
- 22% - 29%
- 30% - 42%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

Lincoln County
Health and Human Services

American Community Survey 2012-2016 data
BRFSS 2014-2015 data
A.8 Proportion of population with a disability, by census tract

Lincoln County, 2014-2016

Map notes:

The estimates of disability prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has any disability. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of disability for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of disability prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

A darker shading corresponds to a higher estimated proportion of individuals with disabilities.

The density of the dots indicate the population density. Each dot represents approximately 10 people, but does not represent any single individual or address.

Limitations and suggested interpretation:

Disability prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher disability prevalence, ranging between approximately 32 and 49 percent.

Data sources:


A.9 Estimated arthritis prevalence, by census tract

Lincoln County, 2014-2016

Map notes:

The estimates of arthritis prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with arthritis. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of arthritis for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the arthritis diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The arthritis diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher arthritis diagnosis rates, ranging between approximately 27 and 42 percent.

Data sources:


Estimated Arthritis Prevalence

Lincoln County
2012-2016

Siletz Tribal Lands

State Highways

Estimated probability of arthritis

- 27% - 28%
- 29% - 33%
- 34% - 37%
- 38% - 42%

Dots indicate population density. Each dot represents approximately 10 people.
A.10 Estimated asthma prevalence, by census tract

Lincoln County, 2014-2016

Map notes:

The estimates of asthma prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with asthma. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of asthma for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the asthma diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The asthma diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher asthma diagnosis rates, ranging between approximately 10 and 12 percent.

Data sources:


Estimated Asthma Prevalence

Lincoln County 2012-2016

Siletz Tribal Lands

- State Highways

Estimated probability of asthma

- 9.6% - 9.8%
- 9.9% - 10.4%
- 10.5% - 11.1%
- 11.2% - 12.2%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

Lincoln County
Health and Human Services

American Community Survey 2012-2016 data
BRFSS 2014-2015 data
A.11 Estimated binge drinking prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of binge drinking prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks: “How many times during the past 30 days did you have 4 (women) or 5 (men) drinks on one occasion?” Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of binge drinking for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of binge drinking prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

Binge drinking prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher binge drinking prevalence, ranging between approximately 12 and 19 percent.

Data sources:


Estimated Binge Drinking Prevalence

Lincoln County 2012-2016

Siletz Tribal Lands

- State Highways

Estimated probability of binge drinking
- 12.1% - 12.6%
- 12.7% - 13.4%
- 13.5% - 16.4%
- 16.5% - 19.3%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

Lincoln County
Health and Human Services

American Community Survey 2012-2016 data
BRFSS 2014-2015 data

Attachment 10: CHAs and CHPs
A.12 Estimated cancer prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of cancer prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with cancer. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of cancer for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the cancer diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The cancer diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher cancer diagnosis rates, ranging between approximately 12 and 20 percent.

Data sources:


Estimated Cancer Prevalence

Lincoln County
2012-2016

Siletz Tribal Lands

StateHighways

Estimated probability of cancer diagnosis

12%
13% - 17%
18% - 20%
21% - 20%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

Lincoln County
Health and Human Services

American Community Survey 2012-2016 data
BRFSS 2014-2015 data

Attachment 10: CHAs and CHPs
A.13 Estimated depression prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of depression diagnosis rate by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with depression. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of asthma for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the depression diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The depression diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher depression diagnosis rates, ranging between approximately 23 and 30 percent.

Data sources:


Estimated Depression Prevalence

Lincoln County
2012-2016

Siletz Tribal Lands

Estimated probability of depression diagnosis

- 23% - 24%
- 25% - 26%
- 27% - 28%
- 29% - 30%

Dots indicate population density. Each dot represents approximately 10 people.
A.14 Estimated diabetes prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of diabetes prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with diabetes. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of diabetes for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the diabetes diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The diabetes diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher diabetes diagnosis rates, ranging between approximately 10 and 17 percent.

Data sources:


Estimated Diabetes Prevalence

Lincoln County 2012-2016

Siletz Tribal Lands

Estimated probability of diabetes
- 10%
- 11% - 13%
- 14% - 15%
- 16% - 17%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport

Lincoln County
Health and Human Services

American Community Survey 2012-2016 data
BRFSS 2014-2015 data

Attachment 10: CHAs and CHPs
A.15 Estimated heart disease prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of heart disease prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with heart disease. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates heart disease diagnosis rates for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of heart disease diagnosis rates. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

The heart disease diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher heart disease diagnosis rates, ranging between approximately 3 and 7 percent.

Data sources:


Estimated Heart Disease Prevalence

Lincoln County
2012-2016

Siletz Tribal Lands

<table>
<thead>
<tr>
<th>Siletz Tribal Lands</th>
<th>Estimated probability of heart disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.4% - 3.8%</td>
</tr>
<tr>
<td></td>
<td>3.9% - 5.1%</td>
</tr>
<tr>
<td></td>
<td>5.2% - 5.9%</td>
</tr>
<tr>
<td></td>
<td>6% - 7.2%</td>
</tr>
</tbody>
</table>

Dots indicate population density. Each dot represents approximately 10 people.

Attachment 10: CHAs and CHPs
A.16 Estimated obesity prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of obesity prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks the height and weight of the respondent. These values are used to calculate the body mass index (BMI) of the person, with a BMI over 30 recorded as “obese”. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of obesity for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of obesity prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

Obesity prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher obesity prevalence, ranging between approximately 27 and 37 percent.

Data sources:


Estimated Obesity Prevalence

Lincoln County
2012-2016

Siletz Tribal Lands

State Highways

Estimated probability of obesity

- 27%
- 28% - 31%
- 32% - 34%
- 35% - 37%

Dots indicate population density. Each dot represents approximately 10 people.

Lincoln City
Siletz
Newport
Toledo
Waldport
A.17 Estimated smoking prevalence by census tract

Lincoln County, 2015

Map notes:

The estimates of smoking prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has smoked cigarettes in the previous 30 days. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of smoking for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of smoking prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2012-2016 5-year estimates.

Limitations and suggested interpretation:

Smoking prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher smoking prevalence, ranging between approximately 15 and 29 percent.

Data sources:


Estimated Smoking Rate
Lincoln County
2012-2016

Siletz Tribal Lands

State Highways

**Estimated probability of smoking**
- 15% - 18%
- 19% - 20%
- 21% - 24%
- 25% - 29%

Dots indicate population density. Each dot represents approximately 10 people.
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Partners and Acknowledgements

Linn County Department of Health Services would like to acknowledge and extend thanks to our numerous community partners who have helped make the 2017 Linn County Community Health Assessment a success, including (but not limited to):

Albany InReach Services
Boys & Girls Club of the Greater Santiam
Center Against Rape & Domestic Violence
City of Albany
Communities Helping Addicts Negotiate Change Effectively
InterCommunity Health Network’s Linn Local Advisory Committee
Kidco Head Start
Linn Benton Health Equity Alliance
Oregon Cascades West Council of Governments
OSU Extension
Regional Health Assessment Team
Samaritan Health Services
Willamette Neighborhood Housing Services
Chapter 1
Introduction and Overview

The 2017 Linn County Community Health Assessment (CHA) is the result of many dedicated hours of research, working in collaboration with community partners and agencies, leaders, and local residents across the county.

The World Health Organization defines health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”¹ Health is not just about individuals, but includes families, communities, and systems, and is a result of the interaction of complex networks of conditions and factors. Health starts long before illness occurs and is impacted by where and how we live, learn, work, play, worship and age.

The Linn County CHA incorporates this definition of health by describing a wide array of information about the conditions and factors affecting people’s health across the county as well as indicators of health status.

Assessment Goals and Objectives

The Linn County CHA:

- Identifies and gathers health status indicators in order to determine the current health status of the community;
- describes areas for potential future health improvement while building upon ongoing community knowledge and efforts;
- identifies strengths and challenges facing the county in regard to health status;
- recognizes and highlights the need for more detailed local data; and
- is a collaborative process that incorporates a broad range of community voices.

CHA data informs:

- Community, organizational, and local coordinated care organization decision-making;
- the prioritization of health problems;
- reporting requirements and funding opportunities for community partners; and
- the development, implementation, and evaluation of a range of plans, policies, and interventions to improve community health.

Report Organization

The Linn County Community Health Assessment is presented in nine chapters:

Chapter 1: Introduction and Overview, including methodology and limitations.
Chapter 2: *Who We Are*, describing the people of Linn County (and sometimes others in the region and state), including population demographics as well as a look at how the community has changed over time.

Chapter 3: *Environmental Health*, which includes information about the physical spaces in which we live, work, and play.

Chapter 4: *Social Determinants of Health*, which includes the social, economic, and community factors that influence health.

Chapter 5: *Access to Health Services*, exploring how we define and measure the ability of those in our community to get the medical care they need.

Chapter 6: *Physical Health*, which covers a number of related health outcomes, from chronic conditions to violence and injury throughout the life course.

Chapter 7: *Behavioral Health*, a look at the indicators and measurements of mental health and substance abuse throughout the community.

Chapter 8: *Health through an Equity Lens*, examining the disadvantages and barriers some populations face more than others regarding improving and maintaining their health status.

Chapter 9: *Conclusion—Meeting Challenges Together*, discussing how this data can be used to understand the health of Linn County and recognize opportunities for positive changes to improve the health of the entire community.

**Collaboration and Partnerships**

The Linn County Community Health Assessment is the result of a community committed to improving health for all in Linn County. The document was developed through a variety of community partnerships. These partners included the Linn, Benton, and Lincoln County Regional Health Assessment and Alignment (RHA) team, which was developed out of a partnership formed by Linn, Benton, and Lincoln Counties and the local Coordinated Care Organization (CCO), InterCommunity Health Network (IHN-CCO). The four partners collaborate on a series of assessments with the understanding that a regional approach to population health data allows them to identify wider health trends and pool their resources to efficiently address the issues that their individual Community Health Assessments and group Regional Health Assessment (RHA) identify. The RHA engaged a wide representation of the community who shared their personal and professional knowledge while committing to help develop strategies for health improvement. For more information, email LBLRHA@co.benton.or.us.

The first health assessment that the RHA team produced was a Regional Health Assessment which has served as a template for the community health assessments of the partners, including this 2017 Linn County Community Health Assessment. Many hours of work went in to
creating the Regional Health Assessment, and the team below is credited with the creation of the original document:

Peter Banwarth, MS  
Valerie Barnhill, MPH Intern  
Miyuki Blatt, MPH Intern  
Ann Brown, MBA  
Tatiana Dierwechter, MSW  
Jessica Deas, MPH  
Gerald Dyer, MPH  
Charlie Fautin, MPH, RN  
Ruby Kiker, MPH  
Megan Patton-Lopez, PhD, RD  
Lauren Zimbelman, MPH

The Regional Health Assessment team that assisted in the creation of the 2017 Linn County Community Health Assessment includes:

Peter Banwarth, MS  
Tyra Jansson, MPH  
Brian Leon, MPH Intern  
Noah Lininger, BS Intern

In addition to the RHA, Linn County Public Health and the Linn County Health Advisory Board developed the Linn County Community Health Improvement (LCCHI) Steering Committee. The LCCHI Steering Committee is made up of organizations representing a variety of populations across Linn County committed to providing ongoing input and oversight of the community health improvement process. This includes the development of the CHA and planning and participation in the community health improvement plan (CHIP). The committee strives to create a CHA that is a comprehensive and considerate portrayal of our community and continues to ensure a process that is inclusive and represents the diversity of our Linn County population as we move into the future and develop the CHIP.

Linn County Community Health Improvement Steering Committee:

- Albany InReach Services  
  Miao Zhao
- Boys & Girls Club of the Greater Santiam  
  Kris Latimer
- Center Against Rape & Domestic Violence  
  Letetia Wilson
- City of Albany  
  Anne Catlin
- Communities Helping Addicts Negotiate Change Effectively  
  Jeff Blackford
- Kidco Head Start  
  Audra Baca
- Linn Benton Health Equity Alliance  
  Brigetta Olson
- Linn County Health Services  
  Todd Noble
- Linn County Mental Health  
  Dana McGlohn and Tanya Thompson
- Linn County Public Health  
  Glenna Hughes and Erin Sedlacek
- Oregon Cascades West Council of Governments  
  Helen Beaman
- OSU Extension  
  Tina Dodge Vera
- Regional Health Assessment Team  
  Peter Banwarth, Tyra Jansson, Brian Leon
- Samaritan Health Services  
  Stephanie Hagerty
- Willamette Neighborhood Housing Services  
  Brigetta Olson
Methodology

The Regional Health Assessment team reviewed county, regional, and state health assessments as well as current literature to better understand how best to conduct and design a community health assessment. The team also built on its experience from having previously produced a Regional Community Health Assessment for the Linn, Benton, and Lincoln County region. Staff examined access indicators that have strong evidence for correlation with health status and outcomes. Data from secondary sources were identified through meeting with community partners, and through preexisting publications (e.g. community health assessments and hospital community health needs assessments). In addition, data sources were identified through literature research to include data ranging from local, regional, state and national levels. A variety of community partners were involved throughout this process. Staff conducted both in-person and phone presentations and consultations with members of regional and county-level governmental, nonprofit, and health system organizations. In addition, members of state and local research communities were contacted.

This process has included:

- Engaging county stakeholders and partners in the process of issue identification, data collection, data interpretation, editing, and dissemination of results;
- obtaining updated secondary data for the county;
- synthesizing existing data reports; identifying areas in which more information is needed, and including data from other sources which address these gaps;
- identifying health needs and assets that will inform additional local and regional planning processes, including county-level Community Health Improvement Plans, Public Health Division strategic planning, public health accreditation, and health care transformation initiatives, among others; and
- consulting state and national resources for guidance in the development of this community health assessment, including the following: Oregon Health Authority technical reports (e.g. health equity, asthma, chronic disease prevention); the Centers for Disease Control and Prevention’s data set directory of social determinants of health at the local level; King County’s Equity and Social Justice Annual Report; and the Statewide Health Assessment of Minnesota.

Limitations

While the Linn County CHA identifies many critical issues pertaining to community health, it is not inclusive of all health-related issues. As a result, it should not be considered a formal study or research document investigating the causes of each issue raised or providing a detailed analysis of the data. In many cases, data are not available at the regional or county level, nor are all data stratified by race/ethnicity, income, education level, zip code, etc.
When considering the many factors that contribute to health, data are lacking in part because respective theoretical models are still being developed. In addition, conclusions, hypotheses, and interpretations of the interactions between the many factors that contribute to health may not be included, in part because the underlying structures of these interactions are still not fully understood.

**Gaps in Data**

Recognizing and highlighting the need for more detailed local data was a key objective of this assessment. As mentioned above (and throughout the document) data for Linn County were often not available for particular demographics, such as age, income, education-level, race/ethnicity, or zip code. This greatly limited the ability to explore differences or disparities within particular sub-populations.

When race/ethnicity data are gathered, analysis may be further limited due to a lack of data stratification by more specific racial categories, such as U.S.-born versus foreign-born for the Latino population, or the many ethnicities and cultures represented in the category of Asian-Pacific Islander. There are limited data on disparate populations in the region however, as highlighted in later chapters, and their needs and barriers to health and health care are likely to be greater than those of the population at large.

Throughout the document, national or Oregon state-wide data are provided to illustrate trends, especially among vulnerable populations, when county level or regional data are not available. It is important to note, however, that national or state-wide rates, trends, and patterns may not necessarily reflect the reality of particular communities, counties, or regional rates and trends. As regional partners continue to gather information to inform their practices and services, it is important to collect demographic data (i.e. zip codes, level of education, etc.) so that more accurate information can be used to inform future health improvement planning and other public health initiatives.

**The Role of Public Health Data and the Cycle of Assessment**

Health assessment is a cyclical, data-informed process. Many organizations in Linn, Benton, and Lincoln counties are conducting assessments of some kind, on different timelines, and focused on diverse populations. Documents relating to this process are often called Community Health Assessments (CHA) and Community Health Improvement Plans (CHIP).

Shown on the next page is a simplified ‘cycle of assessment,’ which helps to demonstrate the role that data (like the data included in this report) can play in the assessment process. Data can illustrate the health status and disparities within communities (needed for the CHA), and inform health priorities and measure progress (for the CHIP). In addition, data can be used to measure progress on projects and activities aimed at improving the health of the community.
A Framework for Public Health Action: The Health Impact Pyramid

Health is made up of many conditions and factors. Worldwide, a growing body of research reveals how conditions, and social and economic opportunities determine health outcomes. The Health Impact Pyramid framework shown on the next page provides guidance for a comprehensive public health approach to community assessment and program development across multiple domains of behavioral influence. This model has been incorporated into the Linn CHA to inform this assessment process.

In this 5-tier pyramid, efforts to address socioeconomic factors are at the base, followed by public health interventions that change the context for health (e.g., smoke-free laws, safe parks, bike lanes), protective interventions with long-term benefits (e.g., immunization, smoking cessation) come next, followed by direct clinical care, and at the top, counseling and education. In general, public action and interventions represented by the base of the pyramid require less individual effort and have the greatest population impact overall.
A similar model shown on the next page, called the Ecological or Social Ecology model, is used in a variety of disciplines in order to better understand the larger forces that impact individuals. This model emphasizes the interaction between factors across all levels of a health problem, such as how an individual’s behavior both shapes and is shaped by the social, built, and natural environments.11

The movement from an understanding of health focusing on the individual to one focused on communities and systems is also evident in the development of the U.S. Department of Health and Human Services Healthy People.12 Healthy People 2020 is the most recent national 10-year agenda for improving health of all Americans with the goal of providing a framework for national, state and local health initiatives.
The Health Impact Pyramid aligns with the factors that the U.S. Department of Health and Human Services cite as influencing the development of healthy communities:

A healthy community is one that continuously creates and improves both its physical and social environments, helping people to support one another in aspects of daily life and to develop to their fullest potential. Healthy places are those designed and built to improve the quality of life for all people who live, work, worship, and play within their borders—where every person is free to make choices amid a variety of healthy, available, accessible, and affordable options.¹³

These factors inform the selection of indicators the RHA team used to describe the health of residents, the neighborhoods in which they live, and the issues that most impact their well-being.

Community Voices

If you have a story you would like to share for potential inclusion in this constantly evolving document, you are invited to contact Linn County Public Health via email at LCCHIP@co.linn.or.us.
How to Use This Document

Timeframes for Data

This report attempts to balance the importance of comparing data from common years with the goal of presenting the most recent data. Different data sources update and release data on independent timeframes. The U.S. Census Bureau is the main source of data for demographic and socioeconomic information used in this report. The most recent data available for county-level demographic and socioeconomic data is the Census Bureau’s American Community Survey (ACS) 2011-2015 five-year aggregates. This aggregation combines data from the five years in order to produce more accurate estimates.

In an effort to compare data from common years, many statistics reported are from 2015, even if more recent data is available. These statistics reflect measures of health that have historically changed gradually, so differences between 2015 and the present are likely to be minor. However, some measures of health have changed greatly in the past several years, such as the implementation of the Affordable Care Act in 2014, which had huge impacts on insurance coverage rates and Medicaid membership. In this case, and for other rapidly changing measures, more contemporary data is reported in order to best reflect current health status and the current health system.

As with the ACS 2011-2015 5-year aggregates, many data sources aggregate statistics over a number of years to improve the reliability of the estimates. A common example of this is reporting the incidence (number of new cases) of cancer. For example, in the state of Oregon there were approximately 98,860 new cases of cancer in Oregon between 2008 and 2012. This statistic is reported as an incidence of 448 cases for every 100,000 people. This means that each year, for every 100,000 people in Oregon there were 448 cancer diagnoses. It does not mean that 448 cases per 100,000 people were diagnosed over the course of 5 years.

Correlation versus Causation

Many health indicators are related to one another or to other group or individual characteristics. For example, diabetes and obesity are related, in that individuals with diabetes are more likely to be obese than the rest of the population, and vice versa. This is a statistical correlation. However, this alone does not imply that diabetes causes obesity, or that obesity causes diabetes. Throughout this document, many correlations are presented, because they are important for understanding which groups may have increased risk for poor health outcomes. Terms like “risk factor” and “association” indicate a correlation.

It is important from a public health standpoint not to assume causation without evidence, because that can lead to stigma against individuals or groups as well as a misunderstanding of the relationship between health indicators. When there is a clear causal link between two health indicators or other factors it is explicitly stated with supporting evidence.
Regional and County-level Data

The Linn County CHA document is focused on the health status of Linn County. However, because of the partnership between Linn, Benton, and Lincoln counties and IHN-CCO, data that encompasses the three-county region is included to illustrate the larger context of which Linn County is a part. Important differences between counties exist and are often identified along with the regional totals. If county level data is not displayed, the regional totals are approximately representative of all three counties, or county-specific data is not available.

For more information on time-trends, color-schemes and decisions around displaying regional and county-level data, please see the following ‘Tables, Graphs, and Maps’ section.

Oregon Health Plan data

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). The Oregon Health Plan collects a large amount of health-related information about its members. It is a valuable resource for understanding the health of our community. Many topics in this Community Health Assessment have sections with Oregon Health Plan data. These data are for OHP members in Linn, Benton, and Lincoln Counties, since they are organized by CCO. Not all low-income community members have insurance through the Oregon Health Plan, and not all OHP members get their insurance through a CCO. These groups are not included in the data and therefore the data should not be interpreted as completely representative of under-resourced community members.

Benchmarking

Benchmarking is an important tool in many fields, including public health. Benchmarking makes a comparison between data (in this case health status data) and a standard for best practice. In other words, benchmarking involves comparing a particular health status in our region, and what is possible for that health status. Major organizations like Healthy People 2020 dedicate significant resources to provide benchmarks for use by local health authorities. As stated on their website, Healthy People has established benchmarks and monitored progress over time in order to:

- encourage collaborations across communities and sectors;
- empower individuals toward making informed health decisions; and
- measure the impact of prevention activities.
Healthy People 2020 has also taken a lead in developing a shared set of overarching goals for public health practice, which are listed in the following text.\(^\text{14}\)

### Healthy People 2020 Overarching Goals

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all life stages.

### Tables, Graphs, and Maps

When exploring the Linn CHA document, a number of visuals are included to display data across Linn County, the Linn-Benton-Lincoln region (LBL Region), and the state. For consistency, color-coding has been used. Linn County has been assigned shades of green, the LBL Region has been assigned shades of purple, and the state has been assigned shades of red. There are also some instances where Benton and Lincoln County data is shown individually, in which case their colors are blue and orange, respectively.

When working with time-trends, multiple years are included only when data was comparable across time. However, comparisons are not always possible, as methods for data collection can undergo significant changes.

Some graphs and tables may not include certain geographies. As mentioned earlier, Linn County level data are not included when not available or when the regional data are similar to Linn County-specific data. Occasionally the regional total was not included, which meant it was not possible to aggregate the counties (usually because the data was age-adjusted at the county-level).

When creating all visuals, there were times that numbers were too small to be meaningful or were small enough to be identifiable. In both of these cases the data have been suppressed and it has been noted in the table, graph, or map accordingly.
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Chapter 2
Who We Are

The history of Linn County begins with the Native American tribes that have lived in the region for thousands of years. Native Americans lived in the valleys and the hills, along rivers and oceans.

Contact with non-native groups began with trappers and explorers in late 18th century, then with pioneers and settlers who moved to the Oregon Territory during the mid-1800s. In 1855, the United States established a 1.3 million acre reservation in what is now Lincoln County. The U.S. government moved many of the coastal and Willamette Valley tribes to this reservation, which at the time included Yaquina Bay.

Over the next 150 years, the three counties incorporated, grew in population, and developed strong local industries. Today, Linn County is a major agricultural producer, with additional industries in manufacturing and forestry.

Health Equity

In discussing the health of our county, it is important to recognize that specific subpopulations may experience worse health outcomes than the general population. This chapter describes many of the sub-populations that will appear later in a health equity context. In order to understand the impact of these inequities, it is helpful to understand the variety of demographics that make up Linn County. In this chapter, these include: geographic distribution, age, disability status, race and ethnicity, veteran status, and other categories.

Population Overview

Linn County is home to approximately 124,000 residents. Approximately 46,000 residents (37 percent) live in Albany, the county seat and most populous city in the county, and around 32 percent of Linn County residents live in rural areas. Rural geography often isolates families through their limited daily interactions with other residents. Isolation is increased by limited public transportation options as well as the variable cost of gasoline.
Map 2.1 shows the distribution of population centers in the county. The county seat of Albany is the largest city in Linn County, although a portion of the town referred to as “North Albany” is actually in Benton County. The next largest population center is Lebanon.

Map 2.1: Population centers in Linn County, 2016

![Map of Linn County population centers](attachment:map.png)

Source: Portland State University 2015 population estimates

In 2015, there were 45,100 households in Linn County. Household distribution follows roughly the same pattern as overall population distribution across the county. The average household size is about 2.6 people. Families made up 68 percent of the total households. This figure includes both married couple families and other family households. About 52 percent of households consist of married couple family households. Among persons 15 years of age and older, 53 percent of those in Linn County are currently married. Linn County’s married population proportion is about 4 percent higher than the Oregon proportion.

Non-family households made up 32 percent of all homes in Linn County. Most non-family households are composed of people living alone, but some are people living in households in which no one is related to the head of household. Linn County has 4 percent fewer non-family households than the proportion of non-family households for the entire state.
Twenty-eight percent of all households in Linn County have one or more people under the age of 18, below the Oregon average of 29 percent. Approximately 11 percent of households are individuals aged 65 years or older and living alone. 

**Student Population**

There are two institutions of higher learning in the county: Linn-Benton Community College (LBCC) and the College of Osteopathic Medicine of the Pacific-Northwest (COMP-Northwest). LBCC is based in Albany, with campuses in Sweet Home and Lebanon and an additional campus in neighboring Benton County. LBCC had 19,484 students enrolled in the 2015-2016 school year. Just under one third of LBCC students are enrolled in Benton County, with the other two thirds attending Linn County campuses. In addition, many students are dual-enrolled at both LBCC and Oregon State University, based in nearby Corvallis (Benton County).

COMP-Northwest is a medical school in Lebanon that opened its doors in 2011. They train approximately 100 osteopathic physicians every year, and the majority of their graduates are initially placed as primary care doctors.

**Veterans**

The 2011-2015 American Community Survey (ACS) report the veteran population in Linn County at 11,226. Veterans are defined as people who have previously served on active duty in the U.S. Army, Navy, Air Force, Marine Corps, Coast Guard, or who served in the U.S. Merchant Marine during World War II. This equates to veterans composing approximately 9 percent of the civilian population ages 18 years and older in Linn County. As this population ages, the number of individuals with veteran status is expected to decrease over time.

**Demographics: Population by Age and Sex**

Based on 2015 U.S. Census data, the percentage of males and females in the county is approximately equal in most age groups. Within the county, children under 18 years of age constitute 17.3 percent of the population and adults 65 years and older constitute 16.7 percent of the population. The median age is 39.5 years old, slightly higher than the Oregon median age of 39.1 years. From 2010 to 2016 the population of Linn County grew 4.8 percent, from 116,672 to 122,315.

Linn County has a very even population distribution, in terms of age and sex, but there is a relatively larger population of people age 50 to 65, as shown in the population pyramid displayed below (Figure 2.1). It more closely resembles the distribution of the state than the other counties in the region. The population pyramid for Oregon is shown next in Figure 2.2.
Figure 2.1: Linn County population by age group and sex, 2011-2015.

Figure notes: The population of Linn County, as recorded in this ACS data, is approximately 119,000.  
Source: U.S. Census Bureau, American Community Survey 5-year estimates, Table S0101

Figure 2.2: Oregon population by age group and sex, 2011-2015

Figure notes: Oregon’s population pyramid displays a classic shape for an aging society, with roughly equal percentages of individuals between 0 and 65 years old. Oregon’s 2015 population, as recorded by this ACS data, is approximately 3,900,000. 
Source: U.S. Census Bureau, American Community Survey 5-year estimates, Table S0101

Growing Diversity

Native and Foreign Born

In 2015, 96 percent of the people living in Linn County were native residents of the United States. Nearly 56 percent of these residents were born in Oregon. Approximately 4 percent of
the people living in Linn County are foreign born. Of the foreign born population, 40 percent are naturalized U.S. citizens. Three percent of foreign born residents entered the country after the year 2009.28

Race/Ethnicity

With an increasingly global view of health and a stronger understanding of research outlining the social constructs of race and ethnicity, a culturally sensitive definition of race should be considered. In order to do so, and following the CDC Office of Minority Health’s lead, populations defined by race and ethnicity will more generally be referred to as ‘specific population groups’. Mandated in 1997 by the Office of Management and Budget, data presented by the U.S. Census Bureau and the American Community Survey follow the U.S. Office of Management and Budget updated guidelines for race and ethnicity reporting. This update provided for the inclusion of individuals to self-identify as two or more races in the 2000 Census. It came after recognition and advocacy of race as a social construct and to include missed populations who identified with more than one racial category.29 The inclusion of individuals to self-identify as two or more races has been adopted almost universally across other agencies collecting and reporting demographic data. It is important to understand the data for individuals along the lines of racial divide as later issues of health disparities will be presented. Without understanding the populations impacted by these health disparities, health authorities would be limited in their ability to address the specific issues creating the disparities.

U.S. Office of Management and Budget defines race and ethnicity categories accordingly:

**American Indian or Alaska Native** – people having origins in any of the original peoples of North or South America (including Central America), and who maintain a tribal affiliation or community attachment.

**Asian** – people having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent.

**Black or African-American** – people having origins in the black racial groups in Africa.

**Hispanic or Latino** – a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin, regardless of race.

**Multiracial** – people having origins in two or more of the federally designated racial categories.

**Native Hawaiian or Other Pacific Islander** – people having origins in any of the original people of Hawaii, Guam, Samoa, or other Pacific Islands.

**White** – people having origins in Europe, the Middle East, or North Africa.30

In this report, the non-Hispanic categories are used for races, so, for example, the category denoted White includes white, non-Hispanic individuals.

Throughout this report, race or ethnicity will be reported in alphabetical order, as shown above.
White, not Hispanic or Latino individuals comprise 86.4 percent of the population of Linn County, as shown in Figure 2.3. The largest non-white populations in Linn County are Hispanic or Latino (8.3 percent) and American Indian or Alaska Native (1.6 percent). The Hispanic or Latino population increased by 67 percent from 2000 to 2015. Linn County is less diverse than the state of Oregon, which has fewer White, not Hispanic or Latino individuals (77 percent).

Figure 2.3: Population by Race and Ethnicity in Linn County, 2015

Figure notes: The population of Linn County, as recorded in this ACS data, is approximately 119,000. Percentages reflect some double counting of Hispanic/Latino populations, which include individuals who identify both as Hispanic Latino and as a race other than White.

Source: U.S. Census Bureau, American Community Survey 5-year estimates, 2011-2015, Table DP05

Native American Population

The Confederated Tribes of Siletz Indians are an important presence in the area and possess a rich history. The Confederated Tribes of the Siletz Indians is headquartered in Siletz, Lincoln County. The Tribe lists 5,001 members in its registry. This includes 720 members residing in Siletz, with an additional 444 members elsewhere in Lincoln County. Beyond Lincoln County, 174 members live in Linn and Benton counties, and approximately 2,000 additional members live throughout Oregon. The Tribe maintains a Federal Tribal Community Health Clinic and a USDA Food distribution center in Siletz. The Tribe also owns and operates the Chinook Winds Casino Resort in Lincoln City.

Now a federally recognized confederation of 27 bands, the Siletz tribes originated from the area spanning from Northern California to Southern Washington. The Tribe’s population was concentrated along the coastal areas of Lincoln, Tillamook, and Lane counties. Termination was imposed upon the Siletz by the United States government in 1955. In November of 1977, they were the first tribe in the state of Oregon and second in the United States to be fully restored to federal recognition. In 1992, the Siletz tribe achieved self-governance. Self-governance
allowed for direct agreements to be made with the US Government, ensuring control and accountability over tribal programs and funding, including provision of health services.\textsuperscript{36}

The Siletz tribe occupies and manages a 3,666 acre reservation located in Lincoln County, including valuable resources of water, timber and fish. Geographically, this reservation is contiguous with the city of Siletz on its east side and lies to the north and southeast of the city as well.\textsuperscript{37}

Other Native American residents of the region include members of the Confederated Tribes of Grande Ronde, which is headquartered in Polk County, north of Benton County and east of Lincoln County. Members of other Native American tribes based in Oregon and the United States also live in the region.

**K-12 Population**

During the 2015-2016 school year, the seven public school districts with schools in Linn County served 22,904 students. Table 2.1, below, presents racial and ethnic diversity in Linn County public schools, grouped by school district. These data do not include private school students. The category names are displayed as presented to students.

**Table 2.1: Linn County School Districts and County Total, student demographics by race/ethnicity, 2015-2016**

<table>
<thead>
<tr>
<th>School district</th>
<th>Number of students</th>
<th>American Indian/Alaskan Native</th>
<th>Asian Pacific Islander</th>
<th>Black</th>
<th>Hispanic/Latino</th>
<th>Multi-Ethnic</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Linn</td>
<td>649</td>
<td>1.2%</td>
<td>0.5%</td>
<td>0.9%</td>
<td>13%</td>
<td>2.9%</td>
<td>82%</td>
</tr>
<tr>
<td>Greater Albany</td>
<td>9,515</td>
<td>0.6%</td>
<td>1.1%</td>
<td>0.7%</td>
<td>20%</td>
<td>6%</td>
<td>71%</td>
</tr>
<tr>
<td>Harrisburg</td>
<td>895</td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.1%</td>
<td>12%</td>
<td>5.3%</td>
<td>81%</td>
</tr>
<tr>
<td>Lebanon Community</td>
<td>4,202</td>
<td>1.4%</td>
<td>1.4%</td>
<td>0.4%</td>
<td>10%</td>
<td>5.4%</td>
<td>81%</td>
</tr>
<tr>
<td>Santiam Canyon</td>
<td>4,341</td>
<td>1.3%</td>
<td>1.9%</td>
<td>1.5%</td>
<td>11%</td>
<td>7.3%</td>
<td>77%</td>
</tr>
<tr>
<td>Scio</td>
<td>785</td>
<td>1.9%</td>
<td>1.3%</td>
<td>0.4%</td>
<td>6.1%</td>
<td>3.1%</td>
<td>87%</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>2,318</td>
<td>0.9%</td>
<td>0.8%</td>
<td>0.2%</td>
<td>5.1%</td>
<td>5%</td>
<td>88%</td>
</tr>
<tr>
<td>Linn County total</td>
<td>22,705</td>
<td>1%</td>
<td>1.2%</td>
<td>0.7%</td>
<td>14%</td>
<td>5.8%</td>
<td>77%</td>
</tr>
</tbody>
</table>

*Source: Oregon Department of Education, Student Ethnicity statistics*
The K-12 population shows significantly higher racial and ethnic diversity than the regional population as a whole, particularly for Hispanic/Latino and Multi-ethnic populations (Figure 2.4). The Oregon Department of Education uses a different racial/ethnic classification system than the U.S. Census Bureau; in particular, it aggregates Asian and Hawaiian or Pacific Islander into one group, and does not include a category for “Other race.”

Figure 2.4: Race/Ethnicity of total population versus regional public school K-12 population

Figure notes: Race and ethnicity categories from ACS data have been adjusted to correspond to ODE race and ethnicity categories. The population of Linn County, as recorded in this ACS data, is approximately 119,000. The population of Linn County K-12 students is approximately 22,900.

Sources: Oregon Department of Education, Student Ethnicity statistics, academic year 2015-2016, U.S. Census Bureau, American Community Survey 5-year estimates 2011-2015, Table DP05

Language Spoken at Home

2011-2015 U.S. Census data for the county reports that 7.4 percent of residents who are at least 5 years old spoke a language other than English at home (Table 2.2). Of those speaking a language other than English at home, 73 percent spoke Spanish, 8 percent spoke an Asian or Pacific Islander language, 15 percent spoke an Indo-European language other than Spanish, and 4 percent spoke some other language. Across the county, about 27 percent of the population who spoke a language other than English at home reported that they did not speak English “very well”. In comparison with the county, 15 percent of Oregon residents at least 5 years old speak a language other than English in the home, and of those residents, 40 percent reported that they did not speak English “very well.”

38
Table 2.2: Percentage of the population 5 years and over who speak English, Spanish, or another language; Linn County, the LBL Region, and Oregon 2011-2015

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent who speak a language other than English at home</td>
<td>7.4%</td>
<td>9.4%</td>
<td>15.1%</td>
</tr>
<tr>
<td>Spanish</td>
<td>5.4%</td>
<td>5.6%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Other languages</td>
<td>2.0%</td>
<td>3.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Does not speak English very well</td>
<td>2.0%</td>
<td>2.8%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, American Community Survey 5-year estimates

Disabilities

Understanding and measuring disability is a very complex task. The complexity comes from the fact that the definition of “disability” includes a number of populations, and because the definition is still being discussed and further developed. Definitions of disabilities from a source such as the World Health Organization (WHO) can help shed light on the particular health issues facing these populations, but it must be noted that this definition is not the same as that used to gather many types of data.

Disability itself is not an indicator of poor health—rather, disability can (and often does) become a barrier to employment, adequate housing, social inclusion, transportation, access to health care, and other essential components of a healthy life.

According to the World Health Organization,

Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations.

Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers.39

Mental illness, that substantially limits one or more major life activities, is also included in definitions of disability.40 This is particularly worth noting, as institutionalized populations generally experience a greater prevalence and severity of mental illness than the broader population. However, these populations are not captured in much of the data collected around disability.41
From 2011 to 2015, among the civilian non-institutionalized population, approximately 17 percent reported a disability in Linn County, where disability is “defined by a person’s risk of participation limitation when he or she has a functional limitation or impairment.” Disability encompasses many different conditions; for instance, the most common disability in Linn County among those aged 5-64 is cognitive difficulty, with ambulatory difficulty ranking the highest for the 65 and older population. The prevalence of disability increases with age, from 1.4 percent of people under 5 years of age, up to 14.8 percent of people between 18 and 64 years of age, and 40.5 percent of those 65 and over. Seventeen percent of Linn County residents reported to the American Community Survey that they are living with a disability, compared to 15.5 percent in the LBL Region. As these values are not age-adjusted, it is important to note that some of this difference may be related to Linn County’s older population.

Figure 2.5: Disability rates in Linn County and the LBL Region, all ages, 2011-2015

The American Community Survey (ACS) is generally a reliable source for demographic data, but there are some concerns with its accuracy regarding disability rates. The Behavior Risk Factors Surveillance System (BRFSS) is another national survey that asks about disability. BRFSS data indicates that approximately 38 percent of Linn County residents report a disability, compared to only 17 percent in ACS data, and 34 percent of LBL Region residents report a disability, compared to 16 percent in ACS data. One difference is that BRFSS data only includes individuals age 18 and older, while this ACS data includes all ages. But this only accounts for about 2 percentage points of the difference between the ACS data and the BRFSS data.
Older adults

Among those living in Linn County, 17 percent are 65 years of age and over, compared with 15 percent in Oregon overall. A number of health issues, needs, and concerns are associated with an aging population.

Ninety-five percent of adults in Linn County who are over 65 years of age are white and non-Hispanic. Of older adult households, 20.3 percent are renters and 40.3 percent of households have only one resident. Eight percent of aging residents live below the federal poverty line, and 13.6 percent of 65+ households receive Food Stamps/SNAP benefits. This population faces higher rates of disability than other age groups, with a rate of 40.5 percent. Civilian veterans make up 26 percent of this group, and 16.3 percent of adults aged 65 or older in Linn County hold a bachelor’s degree or higher, well below the Oregon average of 27.8 percent.

Family structure

There are 45,100 households in Linn County, with an average household size of 2.6 people. The Census defines a family as a household consisting of two or more people, at least two of whom are related by birth, marriage, or adoption. Close to half of Linn County households are formed by married couple families. This is similar to the state average. About 30 percent of households are held by individuals living alone, which is also similar to the state average. About 7 percent of Linn County households with more than one person are non-family groups compared to 9 percent in Oregon. This category includes two or more unrelated individuals living in the same household.

A little under 17 percent of households in Linn County are single-parent households, with the majority of those (12 percent of all households) headed by women. See Figure 2.6.

The American Community Survey does not track same-sex partnerships at this time, but does include married same-sex couples in the “married couple family” category.
Figure 2.6: Composition of households in Linn County, 2011-2015

Approximately 14,230 households in Linn County have children under the age of 18, 32 percent of all households in Linn County. Close to 2 out of 3 households with children are headed by a married couple; 9 percent are headed by a single male, and 27 percent are headed by a single female. See Figure 2.7.

Figure 2.7: Composition of families with children in Linn County, 2011-2015

Figure notes: There are approximately 45,000 households in Linn County. The Census defines a family as at least two people in a household related by birth, marriage, or adoption.

Source: U.S. Census Bureau, American Community Survey
Veterans

The American Community Survey estimates that approximately 12 percent of Linn County residents over the age of 18 are veterans of the U.S. military. This is a slightly higher percentage than in the rest of the LBL region (see figure 2.8).

Figure 2.8: Percent of population over the age of 18 with veteran status in Linn County and the region, 2011-2015

There are approximately 91,000 people in Linn County ages 18 and older.

Source: U.S. Census Bureau, American Community Survey

Lesbian, Gay, Bisexual, and Transgender (LGBT) populations

There are not local data on the population of LGBT residents of Linn County. Recent estimates suggest that approximately 5 percent of Oregonians are LGBT, translating to about 6,000 residents of Linn County.47

Conclusion

In order to understand the health of the county, it is vital to understand the people who live here. Differences in age, race or ethnicity, and geography all influence health. Vulnerable populations, such as individuals with disabilities or older adults, merit further description, both because they may require different services, and also because they may present different health concerns. The people of Linn County are growing more diverse and represent many different groups, such as students, Native Americans, and retirees. The history of the region has shaped the residents of the county into its makeup today. In exploring the many determinants of health, it is evident that the people of Linn County are deeply connected with the environments in which they live. The next chapter explores these environments and the effects they have on the health of the region.
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Chapter 3  
Environmental Health

Human beings interact with their environment in everything they do. Some of these interactions have the potential to improve health, while others can negatively impact it. The natural environment is made up of the interactions of air, water, open spaces, and weather or geologic activity. The human-made environment consists of homes, communities, and infrastructure. These two environments are closely linked in their effects on human health. Humans benefit from clean water and air, places to exercise and enjoy the outdoors, safe living and working spaces, and opportunities to engage in healthy behaviors such as active commuting and consuming healthy food. However, when an environment lacks these characteristics, the complex interactions of health and environment can worsen health issues. Poor air quality can raise the risk of asthma, heart attack, or stroke; the design of communities can limit opportunities for recreation or access to quality food; and infrequent but intense natural disasters can disproportionately affect vulnerable populations.

Linn County has a population that values open spaces for recreation, clean air, and clean water. At the same time, the county faces many food access and transportation issues. An understanding of the natural and human-made environments forms a foundation for an analysis of the health of our county.

Natural Environment

The natural environment changes slowly and usually influences health through long-term, cumulative effects. As a result, many of the data described in this section use longer time frames than elsewhere in this report. Furthermore, it is important to recognize that our natural environment is affected by factors (such as natural disasters) beyond the policies and collective behaviors of the local community. What can be controlled, however, are the systems and practices put in place to react and adapt to the natural environment in order to improve health.

Terrain and Natural Resources

Linn County is the 15th largest county in Oregon, covering about 2,290 square miles and spanning from the Willamette River to the Cascade Range. Linn County shares borders with 6 other counties, including Benton and Polk to the west, Marion to the north, Jefferson and Deschutes to the east, and Lane to the south. The county produces a variety of specialty crops and is the nation’s leader in ryegrass production. Linn County is also home to traditional logging and wood products industries.
Located in the mid-Willamette Valley, Linn County’s rich agricultural and forest land, mountains, valleys, rivers and wetlands are highly prized economically, culturally, recreationally, environmentally and aesthetically. The eastern side of Linn County offers thrilling views of several members of the Cascade Range. The western edge of the county, where the majority of the population resides, is dominated by farmland.

### Annual Weather Patterns

Linn County experiences seasonal variation, with hot, dry summers, and cold, wet winters. On average, 44 inches of rain fall per year in the valley and 75 inches in the mountains, some of which falls as snow or ice. Most of the county’s annual precipitation occurs from October to March. Temperatures frequently dip below freezing from November through April in the lower elevations, while highs above 90 degrees Fahrenheit are common in July and August.53,54,55

### Recreation and Outdoor Spaces

Beginning at the Willamette River, Linn County transitions from floodplain to the foothills of the Cascade Mountains. Much of the eastern half of the county is national or state forestland. An extensive network of trails traverses these forests, which include approximately 600,000 acres of the Willamette National Forest and over 25,000 acres of the Santiam State Forest. The slopes of the Cascades are dotted with lakes and reservoirs, including Detroit Lake on the North Santiam River, Green Peter Lake on the Middle Santiam, and Foster Lake at the confluence of the Middle and South Santiam Rivers. The South Fork of the Santiam River runs through Cascadia State Park, while the Middle Fork of the Santiam River is designated a National Wild and Scenic River. The North Fork of the Santiam River, which forms the border with Marion County, is a popular rafting waterway. The Pacific Crest Trail runs along the eastern border of Linn County. Other trails provide access to rock climbing and mountaineering destinations such as Three-Fingered Jack and Mount Jefferson, the second highest point in Oregon. During the winter, Hoodoo Ski Resort, located at the eastern edge of Linn County in the Willamette National Forest, is popular with skiers and families due to its accessibility from the Willamette Valley.

Forming the border of Linn and Benton counties, the Willamette River is a major recreation site, used by boaters, paddlers, and fishers. The Willamette River Trail maintains a network of 11 campsites and 7 boat ramps between Harrisburg and Albany. However, the Willamette River also has a history of contamination from agricultural runoff, storm water drainage, and industrial byproducts. This contamination has limited the healthy use of the river, but efforts are continuing to clean up the river and restore it to health.56

### Recreational Access

Access to recreational facilities and opportunities demonstrates the intersection of natural and human-made environments. Research demonstrates a strong relationship between access to
recreational facilities and physical activity among adults and children. Studies have shown that proximity to places with recreational opportunities is associated with higher physical activity and lower obesity levels.\textsuperscript{57} Public recreation areas include parks, schools, public forests and trails, beaches, and waterfronts. The county’s rural areas are largely accessible to residents.

Recreational opportunities that include walking and bicycling are efficient, low-cost, and available to many. By walking and bicycling, residents can help develop and maintain livable communities, make neighborhoods safer and friendlier, save on motorized transportation costs, and reduce transportation-related environmental impacts, auto emissions, and noise. They can also create transportation system flexibility by providing alternative mobility options, particularly in combination with transit systems. Furthermore, creating walkable and bikeable communities can lead to healthier lifestyles. In Linn County, 39 percent of residents live within one half mile of a public recreation area, ranked 12\textsuperscript{th} among Oregon counties.\textsuperscript{58}

**Water Quality**

The quality of water sources has a significant impact on population health. Drinking water, recreation, manufacturing processes, and irrigation all rely on clean, safe water.

Water quality in the Linn County is considered to be good overall. Water quality problems may include issues around sedimentation due to soil erosion, warm water temperatures occurring as a result of low summer flows, and over-use by private and municipal water systems. Potential sources of contamination in watersheds can be mitigated by proper and effective management practices. There are two primary sub-basins in Linn County that provide drinking water to residents: the North Santiam sub-basin and the South Santiam sub-basin.\textsuperscript{59}

The Oregon Department of Environmental Quality (DEQ) maintains monitoring stations at many locations along major Oregon rivers, including waterways that provide water to communities in Linn County. Average measurements of water quality in the rivers of the region are generally good to excellent, with annual trends improving over time (Table 3.1).
Table 3.1: Water Quality in Linn County rivers, 2005-2014 averages and trends

<table>
<thead>
<tr>
<th>River</th>
<th>Sample site</th>
<th>Water quality</th>
<th>2005-2014 Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Santiam River</td>
<td>Idanha*</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
<tr>
<td>North Santiam River</td>
<td>Gates</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
<tr>
<td>North Santiam River</td>
<td>Jefferson*</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
<tr>
<td>South Santiam River</td>
<td>Crabtree</td>
<td>Excellent</td>
<td>Consistent</td>
</tr>
<tr>
<td>Calapooia River</td>
<td>Albany</td>
<td>Fair</td>
<td>Improving</td>
</tr>
<tr>
<td>Calapooia Creek</td>
<td>Tangent/Albany</td>
<td>Good</td>
<td>N/A</td>
</tr>
<tr>
<td>Willamette River</td>
<td>Harrisburg</td>
<td>Excellent</td>
<td>Improving</td>
</tr>
<tr>
<td>Willamette River</td>
<td>Albany</td>
<td>Good</td>
<td>Improving</td>
</tr>
</tbody>
</table>

Table notes: * The towns of Idanha and Jefferson are in Marion County, but the North Santiam River forms the northern border of Linn County, so Linn County residents come in contact with the water in these areas.

Source: Oregon Department of Environmental Quality, Water Quality

Fluoridated Water

Water fluoridation is the controlled addition of a fluoride compound to a public water supply, intended to prevent tooth decay. Community water fluoridation is an evidence-based practice recommended by the Community Preventive Services Task Force based on strong evidence of effectiveness in reducing dental cavities across populations.\(^{60}\) It is an effective, affordable, and safe way to protect children from tooth decay and is recognized as one of the 10 greatest public health achievements of the 20\(^{th}\) century.\(^{61}\) Water fluoridation complements, but does not replace other efforts to improve oral health. Water fluoridation is a valuable tool in addressing oral health disparities, since everyone who can access public water benefits from it regardless of age, income level, or race or ethnicity. As of 2014, Oregon was ranked very low in the United States (48\(^{th}\) out of the 50 states) for the percentage of people receiving fluoridated water. About 74 percent of the U.S. population served by community water systems received fluoridated water, while about 23 percent of Oregon’s public water supplies are fluoridated.\(^{62}\) This low state fluoridation rate is a direct consequence of some of Oregon’s most densely populated regions lacking fluoridation, including Portland and Eugene. In Linn County, three of the 43 public water systems provide fluoridated water for residences, including Albany, Lebanon, and Sweet Home, covering approximately 58 percent of the county’s residents.\(^{63}\)

Annual Snowpack and Summer Water Flows

Annual Cascade snowpack is measured in a number of places in Linn County. Snowpack levels are reported as snow water equivalent – the inches of water that could be melted out of the column of snow. The April 1\(^{st}\) snowpack is typically an indicator of water supplies and quality for the summer in Linn and Benton counties. There is no evidence of a significant trend in snowpack between 1979 and 2015, but the large year-to-year variability causes uncertainty and hardship for the agriculture, fishery, and forestry industries. There have been years in which the snowpack at various monitoring stations in the Willamette Basin was well below the 30-year median. Recently, the Willamette Basin 2015 April 1\(^{st}\) snowpack was the smallest
recorded, at only 8 percent of the 30-year median snowpack. In contrast, the 2017 April 1st
snowpack measured at 134 percent of the 30-year median.64

As climate change progresses, snowpack in higher elevations of the Cascade Range is expected
to be smaller and to disappear more quickly in summer.65 This will have the effect of reducing
summer water flows and increasing the temperature of snow-melt fed rivers, such as the
Santiam and Willamette river systems. Since the winter snowpack largely determines how
much water is available from May through October in the Willamette Valley each year, reduced
flows and higher temperatures put increased pressure on fish stocks and agriculture. This
results in losses in biodiversity and more challenging conditions for farmers. Additional impacts
of climate change are discussed in more detail later in this chapter.

**Air Quality**

Air quality has a direct impact on the health of individuals. According to the Environmental
Protection Agency (EPA), small particles (less than 10 micrometers in diameter) can be inhaled
depthly into the lungs and may even penetrate into the bloodstream. Exposure to particle
pollution has been linked to many serious health problems, including:

- Premature death in people with heart or lung disease,
- Nonfatal heart attacks,
- Irregular heartbeat,
- Aggravated asthma,
- Decreased lung function, and
- Increased respiratory symptoms.66

Sensitive groups, including infants, the elderly, and individuals with preexisting conditions, are
at heightened risk of complications from breathing particulate matter. Furthermore, unhealthy
air days can prevent individuals from participating in other healthful activities such as exercise
or enjoying the outdoors. The EPA conducts a National Air Toxics Assessment every three years
that evaluates 178 high priority toxic air pollutants to help provide a better understanding of the
air quality in Oregon.67 The Oregon Department of Environmental Quality then prioritizes areas of
Oregon to determine air toxics reduction strategies, if needed. Linn County is not a priority area in
Oregon, presumably due to their low levels of toxic air pollutants.

Linn County enjoys clean and healthy air. The Oregon Department of Environmental Quality
records a qualitative measure of air quality each day at multiple locations throughout the state,
including Albany and Sweet Home. The qualitative measure is based on the level of fine
particulate matter (PM$_{2.5}$; particulate matter less than 2.5 micrometers in diameter) and ozone
levels in the air. The measure has six levels ranging from Good to Hazardous. * Between 2007
and 2015, Albany averaged 328 days of Good air quality each year. Most of the remaining days
were of Moderate air quality, with at most a few Unhealthy days in any given year. Sweet

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* The full list is Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, Very Unhealthy, and Hazardous.
Home averaged fewer days at Good air quality (314) during the same time period, but the difference was made up in Moderate days and did not translate to increased Unhealthy days. However, different areas can experience good or poor air quality due to local factors such as topography or local pollution.

Between 2002 and 2011, the level of fine particulate matter ($\text{PM}_{2.5}$) measured in the air in Linn County averaged 9.81 micrograms per cubic meters ($\mu g/m^3$). This is well below the national standard of 12 $\mu g/m^3$. Furthermore, between 2002 and 2011 the Linn County averaged less than 2.5 days per year with $\text{PM}_{2.5}$ levels above the 12 $\mu g/m^3$ standard.

Contributors to poor air quality include wildfires, inversion events, and seasonal pollen. The main driver of poor quality air in the region is wildfire, which can increase the level of fine particulate matter levels on smoky days. However, the available data does not specify on which days the fine particulate matter levels spiked, so it is not possible to determine the differential effect of summer versus winter on air quality. The worst wildfire season between 2001 and 2014 was in 2007. During that wildfire season, Linn County averaged 10.9 $\mu g/m^3$ over the course of the year. In addition to smoke from summer wildfires, the Willamette Valley can experience high levels of particulate matter in the winter when an inversion of cold air traps exhaust and other pollutants close to the ground.

Seasonal allergies caused by pollen also have a major health impact in the Willamette Valley and the surrounding foothills. A combination of wet springs, warm summers, and large acreage devoted to grass cultivation causes the Willamette Valley to routinely have the highest seasonal pollen counts in the United States. Based on 2015 data, pollen counts begin to rise strongly in May, peaking in late June or early July before slowly tapering off for the rest of the year. However, day-to-day weather patterns can affect both pollen counts and the impact they have on allergy sufferers.

**Natural Hazards**

Linn County is generally considered to be at low risk of frequent natural disasters. Unlike many communities in the United States, the county is not at risk from tornados, hurricanes, or other major storms. Nevertheless, localized flooding and ice or snowstorms are an annual occurrence in some parts of the region, and there are risks from wildfire, major flooding, drought, and earthquakes.

The risk of a natural hazard depends both on the characteristics of the hazard, such as magnitude, duration, probability of occurrence and spatial extent, and also on the systems that are vulnerable to the disaster. These can include individuals, infrastructure, community assets, and also the ability and resources available to respond to the hazard. Many of the social and demographic factors that put people at risk for health issues also make them more vulnerable to natural disasters, including age, income, race or ethnicity, and access to health care.
The major natural hazard in the region is flooding. Linn County does not receive as much precipitation as the coastal Lincoln County portion of the region does. However, localized flooding of tributaries of the Willamette is common every couple of years. Linn County’s steep mountain slopes lead to increased rainfall and higher risks of mudslides and flooding. More rare winter flood events in the region can lead to the Willamette River itself causing flood damage in urban and rural areas along waterways in Linn County.

Other natural hazards include winter storms, wildfires, and earthquakes. Ice storms and landslides are frequent in Linn County during the winter and can lead to temporary power outages in urban and rural areas.

Earthquake and Tsunami Hazards

One of the most high-profile natural hazards, whose notoriety has grown recently, is the potential for a Cascadia Subduction Zone earthquake occurring off the Oregon coast. Geologists estimate a 7 to 12 percent chance of a magnitude 9.0 earthquake within the next 50 years (before 2065).\(^73\) The last Cascadia Subduction Zone earthquake occurred in the early 1700s. Although the impact of such an event would likely be larger than any other natural disaster in the written history of the West Coast, the rarity of the event itself makes it difficult for communities and individuals to internalize its potential for destruction.

Much of the health and service infrastructure in Linn County are located on liquefaction zones (where the soil behaves like a liquid under stress) or are not constructed to withstand such an earthquake. Furthermore, houses built before 1993 were not required to meet seismic standards such as securing the frame to the foundation.\(^74\) This means as many as 70 percent of houses in Linn County could be at risk of collapse if the Cascadia earthquake were to occur.

While it remains difficult to address the potential destruction of such an event, individuals and communities are still able to prepare for lesser disasters, including earthquakes. This can include anything from ensuring infrastructure is strong enough to weather a lesser disaster, to storing survival supplies at home for use during an emergency.

Climate Change

Climate change is a worldwide phenomenon with global causes and many potential regional and local effects.\(^75\) The effects of rising temperatures will be felt locally in:

- Rising sea levels, leading to eroding beaches and more damaging storm surges;
- warmer, dryer summers, creating a higher risk for heat-related illness;
- decreased winter and summer snowpack leading to more potential for drought and groundwater stress;
- greater variability in weather, as storms are predicted to be more intense and less predictable;
• greater risk of larger, more intense, and more frequent wildfires;
• higher prices for goods dependent on climates affected by global climate change;
• changes in how and what agricultural goods are produced in the region;
• effects on recreational activities dependent on current climate, including fishing, skiing, and summer outdoor activities; and
• Potential increase in human and agricultural diseases associated with vectors and organisms that require a warmer climate.\textsuperscript{76}

Many of the environmental indicators already discussed have been linked with climate change, both theoretically and through modeling. These include wildfires, air quality, and winter snowpack. However, the variability of annual weather and the complexity of the interactions that influence climate change effects make it difficult to demonstrate these links without many years of observable data. As a result, this report emphasizes the acute effects of these indicators rather than their long term trends.

One of the few indicators of global warming for which there is a long record of data is air temperature. Seasonal temperatures have shown long-term upward trends both globally and locally for as long as data has been recorded. The National Oceanic and Atmospheric Administration maintains monitoring stations at many locations in the region that track temperatures and record daily maximum temperatures. Daily maximum temperatures above 90 degrees Fahrenheit constitute extreme heat from a health standpoint. Extreme heat can have a number of harmful effects on health. Heat-related illnesses tend to strike those whose health is already fragile, such as infants, elderly, and the infirm.

On average, there are fifteen above-90 degree days at the Lacomb Station (east of Lebanon), and the long term trend in temperatures has been rising in Linn County. Between 1947 and 2016, the number of days above the 90\textsuperscript{th} temperature percentile (89 degrees F) rose at a rate of about 1 day every 12 years at Lacomb Station. This represents an increase of about 8 more days of extreme heat in 2016 than in 1940. This trend is statistically significant, notwithstanding fluctuations from year to year. Figure 3.1 illustrates this progression. This trend is expected to continue as global warming accelerates in the 21\textsuperscript{st} century.\textsuperscript{77}
Human-made Environment

Human-made (or built) environments contribute to health in a variety of ways. People need schools, workplaces, and homes that do not expose them to physical or chemical hazards and places to walk and recreate outdoors that are clean, safe, and free of debris. They also need access to quality and affordable food and transportation options, as well as the confidence that their local communities have not been contaminated with human-made pollutants.78

Healthy Homes

Indoor environmental quality, as defined by the Centers for Disease Control and Prevention, is the quality of a building’s environment in relation to the health and well-being of those who occupy the space within it. Key factors that influence a structure’s indoor environmental quality include dampness and mold in buildings, building ventilation, construction and renovation, chemicals and odors, indoor temperatures, and relative humidity.79 Buildings in the region are often exposed to winter storms with winds in excess of 30 mph and heavy rainfall, with 24 hour accumulations of greater than three inches. This combination often results in moisture entering buildings, creating conditions for the growth of mold. Examining the health effects of specific contaminants in buildings is very complex, but research has shown that some respiratory symptoms and illnesses can be associated with damp buildings.80
Housing Characteristics

The age of a house can predict many other factors that affect the health of the occupants, including exposure to lead, asbestos, or other hazardous materials, mold or pest infestations, and weather resistance and temperature stability. Sixty-one percent of the housing units in Linn County were built before 1979, the year when lead paint was banned from use in homes (Figure 3.2).

Figure 3.2: Construction year of housing stock in Linn County for houses built before 2015, 2011-2015 averages

![Pie chart showing construction years of housing in Linn County]

Figure notes: There are approximately 45,000 housing units in Linn County.
Source: U.S. Census Bureau American Community Survey

Lead Screening

Lead poisoning is a significant health concern. Laws and regulations are in place to help protect people; however, lead poisoning still threatens many Oregonians, especially children. The Centers for Disease Control and Prevention reports that “even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement.”81 Blood levels between 1 and 9.9 micrograms per deciliter (μg/dl) are of medical concern; concentrations of ten μg/dl or above are considered lead poisoning.

Although leaded paint and gasoline can no longer be legally sold in the United States, many children are still exposed to dangerous amounts of lead. Lead paint dust is the most common way children are exposed, and it is common inside and outside homes built before 1978.82 Ordinary household repair and maintenance activities can stir up lead-contaminated dust. People can also get lead in their bodies by eating foods contaminated with lead from exposure to soil or lead paint chips.

Oregon has a relatively low overall prevalence of lead poisoning compared to other states, and prevalence rates have declined through the years. This decline is consistent with national
trends. In Oregon an estimated 1,000-2,000 children have blood lead levels equal to or greater than ten μg/dl. This gives a rate of 1.16 – 2.32 children per 1,000 children. In 2016, there were a total of 7 reported cases of lead poisoning in Linn County (blood levels equal to or greater than ten μg/dl).

Radon

Radon is a gaseous radioactive element that occurs from the natural breakdown of uranium in the soil and rocks. It is colorless, odorless, and tasteless. In indoor settings, radon poses a risk by emitting atomic particles that can enter the lungs and alter the DNA, increasing a person’s lung cancer risk. Radon is the second leading cause of lung cancer in the nation and, according to the Environmental Protection Agency, is classified as a Class A carcinogen. In residential housing and other buildings, radon typically enters through the surrounding soil (such as at the basement level) and radon levels are measured by the Oregon Public Health Division. Radon levels of four picocuries of radon per liter (pCi/L) of indoor air are considered dangerous to health. Radon is found in varying concentrations throughout the United States with moderate levels found in Oregon, generally under the four pCi/L level. When the annual average concentration in a home exceeds four pCi/L, it is recommended that measures be taken to lower the concentration to below the four pCi/L level.

Linn County radon levels vary throughout the area. The most recent test results were released in late 2015. In Albany, the average reading for radon in 60 locations was 1.5 pCi/L (low risk). In Lebanon, the average was 2.5 pCi/L (moderate risk) from 34 locations. Other areas tested in the county fell within those values.

Tobacco-free Spaces

Tobacco use is still the leading preventable cause of death and disability in Linn County. Statistics on tobacco related diseases and deaths are discussed in Chapter 6: The Health of Our Bodies.

As stated in Oregon’s Tobacco Prevention and Education Program (TPEP) report, tobacco use is a major risk factor for developing heart disease, diabetes, arthritis, asthma, and many cancers. Secondhand smoking, or exposure to a smoker’s exhaled smoke, has also led to significant chronic disease and death. In light of this, the county and the state have taken steps to reduce exposure to tobacco and cigarette smoke in public places. Promoting smoke-free environments is a proven strategy to reduce tobacco use and exposure to secondhand smoke.

The Oregon Indoor Clean Air Act prohibits smoking and other tobacco products in most workplaces, schools, bars, and other indoor public spaces. It was recently expanded to inhalant delivery systems such as e-cigarettes and vaping equipment.

Albany Public Libraries have established tobacco free properties. The cities of Lebanon and Sweet Home have banned smoking at city parks. Within the county, a number of non-governmental entities also restrict or ban tobacco on their properties.
Services and other health providers ban tobacco products. Linn-Benton Housing Authority is smoke free at most of its units, with restrictions in place on the few that permit smoking.\textsuperscript{90}

**Transportation**

Transportation links people and places, making it possible to get to work, to school, to recreational opportunities, and to the grocery store. Transportation includes more than roads, walkways, or bridges; it also involves investments in the promotion, education, access, and safety of all transportation methods. It also covers public transit systems, policies that dictate the location and construction of roads, and guidelines for accommodating different kinds of users. Guidelines are important for providing avenues for physical activity, and for reducing the potential of driver, cyclist, and pedestrian injury.

**Access to Public Transportation**

Access to public transportation is an important public good. Not only does taking public transportation provide additional opportunities for exercise, but its presence also makes it easier for individuals and families without private transportation to access goods and services vital to maintaining health. These include grocery stores, health and dental care, and recreation facilities. As of 2013, approximately 17 percent of Linn County residents live within one quarter of a mile from a bus stop.\textsuperscript{91} Albany is the only city in the county with regularly scheduled public transportation, which is the primary reason for the low percentage. Although distance to a public transit route is one measure of the strength of a public transportation system, additional factors impact the strength of public transport, including frequency and hours of operation, direct routes, safety, and connections to other routes.

People of color, people experiencing poverty, people with disabilities, and people who experience language barriers are more likely to depend on public transit. However, they often live in areas with poor transit service, fewer destinations, and poor connectivity. These unfair burdens increase transportation costs and stress, and limit access to economic and educational opportunities, housing, healthy foods, and physical activity. Vulnerable populations often have unsafe transportation conditions, including limited safe crossings, areas with high-speed traffic, and poor sidewalk and bicycle infrastructure.

**Active Commuting**

There is a strong correlation between access to public transportation and using active transportation (which includes public transit, cycling, and walking) to commute to work. Among Oregon counties with public transit systems, an increase of five percent of the population within one quarter mile of a bus station is associated with a one percent increase in the percent of the working population that commutes by active transportation.\textsuperscript{92} This trend is reflected in regional statistics as well. As of 2011, approximately four percent of Linn County
residents (the fourth-lowest among Oregon counties) commute using bus, bicycle, or foot travel, compared to 10 percent of all Oregonians.\(^93\)

**Commuting Patterns**

Most workers in the region drive to work. Among Linn County residents, 78 percent of the workforce drives to work alone, with an additional 11 percent carpooling.\(^94\)

Commuting to jobs outside of one’s city of residence is common for many Linn County residents. Approximately 31 percent of county residents who work report driving for 30 minutes or more to work, similar to the statewide value of 30 percent.\(^95\) A longer commute is associated with negative health effects in a number of ways. Longer commutes have been associated with greater levels of stress. Car commuting has also been linked with physical ailments such as lower back pain, increased likelihood of obesity, and less time for recreation, relaxation, or sleep. Working outside one’s city of residence can also make it more difficult to access medical care, either for the worker or his or her family.

Workers in the county average about a 25 minute commute, however the travel time varies greatly between cities. Smaller cities generally have a larger proportion of workers who travel long distances for work. Brownsville and Sweet Home are smaller communities approximately 15-30 minutes away from their closest metropolitan neighbors and all have correspondingly higher rates of long-distance commuting. Albany has a lower proportion of workers (about 20 percent) who commute for more than 30 minutes each way than the rest of the county.\(^96\)

The location where residents work compared to where they live also influences transportation choices. Workers who must travel outside of the county may find that public transportation and ride sharing is not an option due to distance, time and availability. Approximately 32 percent of Linn County workers travel outside the county for work.\(^97\)

**Access to Healthy Foods**

Transportation options and limited public transit for residents contributes to challenges in the region with regard to nutritious food access. For households without private vehicles, the ability to shop for food at grocery stores is highly dependent on proximity. Thirteen percent of households in Linn County are within one half mile of a grocery store, less than the state average (19 percent). The average distance between a household and the nearest grocery store is 2.3 miles.\(^98\) However, since grocery stores tend to be located in larger towns, the county average may overestimate the urban average and underestimate the rural average.

Access to nutritious foods can be particularly difficult for residents with unreliable transportation or tight budgets. A rural community is considered to have low access to food when it is ten or more miles from a supermarket or large grocery store.\(^99\) Rural residents must often travel long distances for food. For rural residents this could mean traveling as much as 20
miles to the nearest full service grocery store. Rural grocery stores throughout the county report barriers that may limit rural low-income families’ access to healthy food. These include: administrative barriers to becoming an authorized vendor for SNAP and WIC programs, economic barriers to offering fresh fruits and vegetables, meat, dairy and other refrigerated foods. For residents in non-rural areas, the most accessible grocery store may also not be the most affordable.

Nearly three times as many residents live within one half mile of a tobacco vendor compared to those who live within one half mile of a grocery store or a WIC authorized store (Table 3.2). Approximately nine percent of Linn County residents do not live “close” to a grocery store (defined as within 1 mile for urban residents or within 10 miles for rural residents).101

Table 3.2: Proximity to grocery stores compared to tobacco vendors in Linn County, 2012

<table>
<thead>
<tr>
<th>Store type</th>
<th>Average (mean) walking distance in miles</th>
<th>Percent of population living within ½ mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery stores</td>
<td>2.3</td>
<td>13%</td>
</tr>
<tr>
<td>WIC-authorized stores</td>
<td>2.8</td>
<td>9%</td>
</tr>
<tr>
<td>Tobacco vendors</td>
<td>1.4</td>
<td>38%</td>
</tr>
</tbody>
</table>

Source: Oregon Environmental Public Health Tracking Tool

In addition to access to nutritious food, proximity to fast food can affect the health of the community. Although complex in nature, the food environment can impact what people eat, and providing healthy options is vital for the health of the community. Although not causal, studies have shown an increase in the prevalence of obesity and diabetes with increased access to fast food outlets in a community. Thirty-eight percent of restaurants in Linn County are fast food vendors, compared to 21 percent in Lincoln County and 46 percent in Benton County.102

**Food Safety and Health Inspections**

Food safety falls under the jurisdiction of county health departments when food is served in restaurants or from mobile vendors. The Centers for Disease Control and Prevention has five categories of foodborne illness risk factors. These are:

- Improper holding temperatures;
- Contaminated equipment;
- Poor personal hygiene;
- Unsafe sources; and
- Inadequate cooking.103

Linn County health inspectors only conducted 39 percent of the required 542 restaurant inspections for the county in 2015, as well as 65 reinspections. The county also did not report counts for food complaints, foodborne illness complaints, or foodborne illness investigations.

* “Close” is defined as within 1 mile for urban areas and within 10 miles for rural areas
There was also no data for failure-to-comply notices, summary closures, or voluntary closures.\textsuperscript{104}

Food sold in grocery stores is under the jurisdiction of the Oregon Department of Agriculture. A total of 275 facilities in Linn County are licensed by the Oregon Department of Agriculture, which includes grocery stores, bakeries, distilleries, and meat and egg processors.\textsuperscript{105}

**Environmental Hazards**

The majority of the regional population does not come into contact with large-scale, human-caused environmental hazards on a regular basis. However, the presence of contaminants in the community, such as sewage overflows, environmental clean-up sites, and pesticide applications, demonstrates some of the broader potential for health exposures that can impact the health of the region.

**Domestic Sewage Systems**

The majority of waterborne disease outbreaks are caused by bacteria and viruses present in domestic sewage. Septic tanks are the largest contributor to bacterial and viral groundwater contamination. Health risks are higher in areas where older, failing septic systems discharge untreated or partially treated sewage above or below ground, potentially contaminating nearby streams and wells.

As of August 2017, there were 51 certified wastewater system collection operators and 49 certified wastewater system treatment operators in Linn County.\textsuperscript{106}

The Oregon Department of Environmental Quality (DEQ) has 167 active permits for wastewater disposal in Linn County as of August 2017.\textsuperscript{107} These permits are designed to limit storm water run-off, industrial wastewater, sewage, and other sources of water pollution.

**Environmental Clean Up Sites and Leaking Underground Storage Tanks**

The Oregon Department of Environmental (DEQ) Cleanup Program protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances. The program's objective is to improve sites to the point where no further cleanup action is necessary.

The Oregon Community Right to Know and Protection Act (ORS 453.307-453.414) is a law that makes information about hazardous materials in Oregon available to emergency service personnel, emergency planners, health officials, and the public. Facilities throughout Oregon that are storing a reportable quantity of hazardous substances are required to annually report this information to the State Fire Marshal.\textsuperscript{108} Incidents that release hazardous materials into
the environment may occur in facilities that manufacture, use, or store these substances. Incidents may also occur during transport of these materials or by equipment malfunction.\textsuperscript{109}

As of August 2017, the DEQ is tracking and monitoring 102 environmental clean-up sites in Linn County.\textsuperscript{110} Sites contain different levels and types of contamination from hazardous substances including petroleum from residential heating oil tanks, regulated tanks at gas stations, and other commercial facilities. Some sites may have one contaminant in a small area of shallow soil, while others may have high concentrations of many substances in soil, surface water, sediments or groundwater.

The DEQ’s Land Quality Division also runs Oregon’s Leaking Underground Storage Tank Program. An underground storage tank system is a tank or any underground piping that is attached to the tank and has about ten percent of its combined volume underground.\textsuperscript{111} These underground storage tanks may store petroleum or other hazardous substances that can pose a risk to groundwater quality if leakage occurs. Oregon’s program handles issues related to clean up of soil and groundwater contamination from spills or releases and enforces state and federal rules. In 2016, Linn County documented six leaking underground storage tanks (all of which were used to store heating oil).\textsuperscript{112}

**Pesticide Exposure**

Residents of the region may come into contact with pesticides either through personal use or as a by-product of commercial use for agriculture or forest management. Many pesticides have the potential to harm humans, birds, fish and aquatic organisms, and land-based vertebrates and invertebrates. Due to this potential for harm, the Oregon Department of Agriculture restricts the use of 495 distinct pesticide products, comprising over 100 different active ingredients.\textsuperscript{113} Some well-known compounds include atrazine, permethrin, and organophosphates. A 2013 study of pesticides and herbicides lists glyphosate as one of the most common active ingredients in aerial spraying.\textsuperscript{114} Glyphosate is also widely available in home products. Many agricultural operations such as wheat, annual rye-grass, and other cash crops also rely on herbicides. Grass and crop fields are sprayed on an annual basis to clear the fields for a new crop the following year.

In the 2009-2011 period, Linn County reported eight cases of acute pesticide related illness, compared to Benton County’s seven reported cases, and Lincoln County’s zero reported cases. Generally, these exposures are controlled by the appropriate precautions limiting direct contact or inhalation, and avoiding accumulation by washing clothing and equipment. The number of pesticide related illnesses for Linn County is well above the mean (4.75 cases) and median (1 case) of all Oregon counties. Statewide, the majority of pesticide related illness occurs in residential use (69 percent), as opposed to work, agricultural, or industrial use. The majority of residential illnesses were due to exposures not related to actual use of a pesticide (63 percent), but rather as accidental contact with pesticides applied earlier. A further 28 percent of
residential exposures occurred during application of pesticides. These proportions were similar for work-related pesticide exposures.\textsuperscript{115}

**Conclusion**

From particulate matter to ocean temperature, the health and stability of the environment that we live in creates opportunities and hazards for our own health. We rely on the natural resources of our region to maintain our livelihoods while being available for our enjoyment. We expect our built environment to function in our day-to-day lives and help us make healthy lifestyle choices. Our environment shapes who we are, even as we shape our environment. Slow trends and sudden disasters can have wide-reaching effects for everyone living in our region. Intersections between individual health and environmental factors are often complex but undeniable. In subsequent chapters, the complex nature of environmental factors will be better understood and highlighted through the lens of social determinants of health and health across the life course.
Chapter 4
Social Determinants of Health

Opportunities for health among residents Linn County begin within the community, including their homes, neighborhoods, places of worship, workplaces, and schools. A growing body of scientific research shows that all people benefit when communities invest in health.

The World Health Organization defines social determinants of health as “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”. These non-medical factors contribute to a large percent of preventable poor health outcomes. Social determinants include influences such as: “early years’ experiences, education, economic status, employment and decent work, housing and environment, and effective systems of preventing and treating ill health.” These aspects of health are often referred to as “upstream factors” since their effect occurs well before illness manifests and curative intervention becomes necessary. In this chapter regional data will be presented for education, employment, income, poverty, economic challenges, food security, home ownership, and homelessness. Environmental factors have been presented in Chapter 3, and access to medical systems will be presented in Chapter 5.

Income, Poverty, and Economic Challenges

Income and Poverty

Income is the strongest predictor of health among all social determinants of health. Not only are there many studies showing a strong association between income and health, but income also affects all other social determinants of health, including education, food security, and housing. The National Longitudinal Mortality Survey found that people in the top five percent of incomes had life expectancies 25 percent longer than people in the bottom five percent of incomes. While income is not a “one size fits all” measure of health, understanding the income of the region provides a solid foundation for measuring social determinants of health in Linn County.

Income

Income incorporates more than money earned from a job. It also includes assets such as bank accounts, equity in a home, and access to other economic resources. Income influences an individual’s ability to choose where to live, what food to eat, participation in physical activities (especially those that require fees or special equipment), and availability of leisure time.
Regional data is highlighted here, as the story of economic disparity is similar across all three counties.

**Median and Per Capita Incomes**

The median income of a population is one measure of the overall income in that population; 50 percent of the population earns more than the median income, and 50 percent of the population earns less. The median (inflation-adjusted) household income in Linn County is higher than Lincoln County, but lower than Benton County and the state. (Table 4.1).

<table>
<thead>
<tr>
<th></th>
<th>Linn</th>
<th>Benton</th>
<th>Lincoln</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median household income</td>
<td>$45,644</td>
<td>$49,802</td>
<td>$42,101</td>
<td>$51,243</td>
</tr>
</tbody>
</table>

*Source: U.S. Census Bureau American Community Survey*

Per capita income is another measure of income. It is the average income of a person. Per capita income is lower than median household income because it is per person, not per household. Figure 4.1 below displays the per capita income of different racial and ethnic subpopulations in Linn County.

**Figure 4.1: Per capita income by race or ethnicity in the Linn County, 2015**

Figure notes: Black or African American and Native Hawaiian or Pacific Islander data is suppressed due to small sample sizes.

*Source: U.S. Census Bureau American Community Survey, 5-year estimates, Table B19301*

**Income Inequality**

Income inequality (the distribution of wealth between richer and poor segments of the population) is associated with many health outcomes. Regions with higher inequality are more likely to experience increased infant mortality, lower life expectancy, higher rates of depression, and lower health status overall. Income inequality is commonly measured by
calculating the ratio of the 80\textsuperscript{th} income percentile to the 20\textsuperscript{th} income percentile of the population.\textsuperscript{*}\textsuperscript{120} In Oregon, the 80\textsuperscript{th} income percentile is 4.7 times the 20\textsuperscript{th} income percentile (Figure 4.2). Linn County has a ratio of 4.2, lowest in the region and lower than the state, meaning the residents of Linn county experience less income inequality.

**Figure 4.2: Ratio of the 80\textsuperscript{th} income percentile of residents to 20\textsuperscript{th} income percentile of residents in Linn, Benton, and Lincoln counties, and the state of Oregon, 2011-2015**

Figure notes: This measure of income inequality is taken by computing the 80\textsuperscript{th} income percentile – the dollar amount that is greater than 80 percent of household incomes in the geography, computing the 20\textsuperscript{th} income percentile, and dividing the result. A larger ratio indicates more income inequality.  
*Source: U.S. Census Bureau American Community Survey, 5-year estimates, Table B19301*

**Poverty**

Poverty is strongly linked to poor health outcomes. Poverty is related to both limited income and lack of economic stability, limited choices in education, employment, and living conditions, and reduced access to safe places to live, work, and play. It can also frequently hinder choices and access to healthy food.

The United States Census Bureau determines the Federal Poverty Level (FPL) each year. The FPL was originally an estimate of the amount of money required to meet the cost of living for individuals or families. Currently, the FPL is a statistical threshold of poverty.\textsuperscript{121} It is not generally recognized as an accurate measure of true poverty, but it is used for determining eligibility for assistance programs. Below, in Table 4.2, the FPL for individuals and families is presented, as well as additional FPL ratios that are used for eligibility and comparison purposes.

\textsuperscript{*} The 80\textsuperscript{th} income percentile is the income of the individual who earns more than 80 percent of the population. The 20\textsuperscript{th} income percentile is the income of the individual who earns more than 20 percent of the population. Those who earn more than the 80\textsuperscript{th} income percentile are the richest 20 percent of the population; those who earn less than the 20\textsuperscript{th} percentile are the poorest 20 percent of the population.
### Table 4.2: Annual Income and Federal Poverty Levels and related ratios for 2013

<table>
<thead>
<tr>
<th>Family size</th>
<th>Percent of Federal Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Individual</td>
<td>$6,041</td>
</tr>
<tr>
<td>Three person family</td>
<td>$9,436</td>
</tr>
<tr>
<td>Four person family</td>
<td>$12,129</td>
</tr>
</tbody>
</table>

*Source: U.S. Census Bureau, Historical Poverty Threshold Table*

Approximately 19 percent of Linn County’s population lives below the federal poverty line, compared to 17 percent of Oregon’s total population. One worrisome statistic is that children less than five years of age are among the age groups with the highest percentage living below the federal poverty level, accounting for about one-third of children under five years of age in Linn County. Figure 4.3 illustrates each age group’s contribution to the overall poverty rate in Linn County.

### Figure 4.3: Percent of population living below the federal poverty line by age group in Linn County, 2011-2015

Earning less than a high school education increases the risk of experiencing poverty. Of the adults in Linn County over the age of 25 who did not complete high school, 24 percent are below the federal poverty line, compared with 13 percent of those who at least completed high school (or equivalent). Variation also exists between racial and ethnic population groups. As shown in Figure 4.4, most racial and ethnic groups in the region have a higher poverty rate than the White, non-Hispanic/Latino population, which is similar to Oregon overall. Individuals in Linn County who identify as Hawaiian or Pacific Islander and Hispanic or Latino are among the racial/ethnic
groups with the highest poverty rates at 75.2 percent and 37.4 percent, respectively.\textsuperscript{125} It is important to note, however, that the population for some racial/ethnic groups is small relative to other groups within the county, which creates more uncertainty in the estimates.

Figure 4.4: Percent of Linn County population living below the federal poverty line by race and ethnicity, 2011-2015

<table>
<thead>
<tr>
<th>Race or Ethnicity</th>
<th>Poverty rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>34.8 %</td>
</tr>
<tr>
<td>Asian</td>
<td>25.5 %</td>
</tr>
<tr>
<td>Black or African American</td>
<td>11.6 %</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>37.4 %</td>
</tr>
<tr>
<td>Multiple races</td>
<td>21.8 %</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>75.2 %</td>
</tr>
<tr>
<td>Other race</td>
<td>24.6 %</td>
</tr>
<tr>
<td>White, not Hispanic or Latino</td>
<td>16.7 %</td>
</tr>
</tbody>
</table>

Figure notes: The population of Linn County for whom poverty status has been determined, is approximately 118,000. The estimates for Black or African American, American Indian or Alaska Native, and Native Hawaiian or Pacific Islander poverty rates are potentially unreliable and should be interpreted with caution.

Source: U.S. Census Bureau, American Community Population, Table S1701

Children Living in Poverty

A growing body of research shows that children who are raised in families experiencing long-term poverty are at greater risk of significant and long-term deficits in health.\textsuperscript{126} Across Linn County, approximately 34 percent of children under the age of five were living in poverty in 2015.\textsuperscript{127} That same year, an estimated 28 percent of children under 18 years of age in the region were living in households earning less than the federal poverty level.\textsuperscript{128} This accounts for approximately 7,600 residents of Linn County. Rates of childhood poverty are higher in Linn County than in Oregon and the United States (each about 22 percent).

Low Income and Cost of Living

Many regional residents earn incomes higher than the federal poverty level but still struggle economically to meet their everyday needs. Approximately 38 percent of Linn County’s population earn less than 185 percent of the federal poverty level ($21,775 annually for an individual or $44,863 annually for a family of four in 2015).\textsuperscript{129,130} This is the threshold that many assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), use for income eligibility.
Research suggests that the cost of living in Linn County is well above the federal poverty level. Table 4.3 below shows the cost of living for three family types in Linn County and the corresponding percentage of the Federal Poverty Level. These figures take into account costs such as housing, child care, food, transportation health care, and taxes.\textsuperscript{131}

<table>
<thead>
<tr>
<th>Family Type</th>
<th>Annual Cost of Living</th>
<th>Percentage of FPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>One adult, one preschooler</td>
<td>$29,415</td>
<td>187%</td>
</tr>
<tr>
<td>One adult, one preschooler, one school-age</td>
<td>$33,809</td>
<td>171%</td>
</tr>
<tr>
<td>Two adults, one preschooler, one school-age</td>
<td>$41,866</td>
<td>176%</td>
</tr>
</tbody>
</table>

Source: The Self-Sufficiency Standard for Oregon

**Employment**

Stable and secure employment influences health, not only by being a source of income, but also by providing access to health insurance. Compared to unemployed workers, individuals who are employed fulltime have higher incomes and standards of living, less stress, and may be less likely to turn to unhealthy coping behaviors such as alcohol consumption or smoking.\textsuperscript{132} The seasonally-adjusted unemployment rate for Linn County in 2016 was 5.8 percent, compared with 4.9 percent statewide.\textsuperscript{133} The unemployment rate has been decreasing steadily since 2009.\textsuperscript{134} Generally an unemployment rate of 5 percent is considered “full employment” as there is always a certain amount of turnover in the labor force.

**Economic Opportunities**

The education, health care, and social assistance sector employs approximately 24 percent of the workforce in Linn County, comparable with 23 percent of the population statewide. The next most populous economic sectors are the manufacturing and retail trades, each employing approximately 14 percent of the county workforce.\textsuperscript{135}

**Education**

Health and education are closely connected. Education levels are the strongest predictor of income and wealth, which strongly influence lifelong health. As a result, educational access and attainment are very important predictors of health status. Individuals with higher levels of education are less likely to die prematurely or report acute diseases.\textsuperscript{136} Furthermore, education levels are the strongest predictor of income and wealth, which strongly influence lifelong health.\textsuperscript{137}
Early Learning

Early childhood development supports nurturing relationships and learning opportunities that foster children’s readiness for school. The early years are crucial for influencing health and social well-being across a child’s lifetime. Research evidence accumulated over the past 40 years supports the conclusion that children who participate in high-quality early childhood development (ECD) programs benefit from a broad range of immediate and long-term health benefits.138

The Head Start Program is one such federal program that promotes the school readiness of children from low-income families by enhancing their cognitive, social, and emotional development. Head Start programs provide a learning environment that supports children’s growth from birth to age five in several areas, such as language, literacy, and social and emotional development. Head Start programs also emphasize the role of parents as their child’s first and most influential teacher and support the development of healthy familial relationships and well-being.139 In Oregon, Head Start programs include at least the Oregon Head Start Prekindergarten (OHS PreK) program, which serve children from age three to five in low-income families. Some Head Start programs also include Early Head Start (EHS), which is a comprehensive program for children below the age of three and pregnant women from low-income families. Oregon children whose families are below the federal poverty level ($24,250 for a family of four) are eligible for these benefit programs.140

The OHS PreK and EHS programs that serve children and families in the region are shown in Table 4.4 below for the most recently published data (2014-2015 school year). Kids and Company Linn County (KIDCO), the organization that serves Linn County families, also serves school districts in Benton County and even one district in Marion County (Jefferson). For the 2016-2017 school year, KIDCO estimates that about 380 families (not including Early Head Start) from Linn County were served.141

Table 4.4: Oregon Head Start PreK and Early Head Start programs and enrollment by county, 2014-2015

<table>
<thead>
<tr>
<th>OHS PreK and EHS program</th>
<th>County</th>
<th>OHS PreK enrollment</th>
<th>EHS enrollment</th>
<th>Total enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kids and Company Linn County</td>
<td>Linn and Benton</td>
<td>466</td>
<td>52</td>
<td>518</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education, Early Learning Division, Oregon Head Start Pre-kindergarten Programs Directory

Despite strong research showing the positive impact of high-quality early education, many families in the region who are in need of child care may not be served. While data are not available for informal child care options, for every 100 children there were 12 available child care slots in Linn County for 2014.142 There were 17 available child care slots per 100 children in Oregon, and the goal for the state is 25 slots per 100 children.143 The average annual cost of toddler care in childcare centers in Linn, Benton, and Lincoln counties are shown in Figure 4.5 on the following page. To give an example, two parents, both earning $9.75 per hour (Oregon’s minimum wage) in full time jobs would make approximately $39,000 for their household.
(before taxes, credits, or adjustments). The median annual cost of childcare for one child in Linn County is $8,100, which is close to one-fifth of these parents’ household income.144

Figure 4.5: County-level median annual cost of childcare for a toddler, 2014

Figure notes: There are approximately 7,400 children under the age of 5 in Linn County. The median annual cost of childcare is approximately 17 percent of the median annual income in Linn County households with children. 
Sources: Oregon State University, Child Care and Education in Oregon and Its Counties: 2014
U.S. Census Bureau American Community Survey, Table B19125

High School Education

High school graduation is a strong predictor of future employment and earnings. Conversely, dropping out of school is associated with lower income, multiple social and health problems,145,146 and health risks.147 For example, 32 percent of Oregonians who do not have a high school degree smoke, compared with 24 percent of high school graduates, 18 percent with some post-secondary education, and seven percent of college graduates (age-adjusted).148

In the 2015-2016 school year, Linn County experienced a high school dropout rate of 51 students per 1,000 9th–12th graders, above the Oregon rate of 39 per 1,000 high school students. The dropout rates for Linn County and Oregon are shown in Figure 4.6.149
Within the county, the high school dropout rate for minority youth populations is generally higher compared to the total county dropout rate of 5 percent. This is particularly true for Native American students (9.1 percent) and Native Hawaiian/Pacific Islander students (12.5 percent). Homeless students in Linn County had a dropout rate of 11.5 percent in the 2015-2016 school year.\textsuperscript{150}

In 2011, Oregon set a goal of 40-40-20, meaning that by 2025, 40 percent of Oregonians age 25 and above would have a bachelor’s degree or higher, an additional 40 percent would have an associate’s degree, and the remaining 20 percent would have graduated high school. This translates to a goal of 100 percent of Oregonians having a high school degree or higher and 80 percent having an associate’s degree or higher.\textsuperscript{151} As of 2015, approximately 90 percent of Linn County residents 25 and older had completed high school or GED equivalent. Out of all Linn County residents, 41 percent had an associate’s degree or some college, while 17 percent had a bachelor’s degree or higher (Figure 4.7). The proportion of individuals who have a bachelor’s degree or higher in Linn County is significantly lower than the overall state percentage of 31 percent.\textsuperscript{152}
Education among Oregon Health Plan Members

When reviewing education measures, differences between Oregon Health Plan members and the general state population are quite clear. According to the 2014 Medicaid Behavioral Risk Factor Surveillance System (MBRFSS) survey, 23.3 percent of OHP adults did not receive a high school diploma or GED (compared with 11.1 percent in the general population). The same study revealed that 12.8 percent of those on OHP had graduated college, less than half of those in the general population (26.5 percent).153

Food Security

Food security is defined as having enough to eat, and being able to purchase or obtain healthy food in socially acceptable ways.154 Adequate nutrition is particularly important for children, as it affects their cognitive and behavioral development. Children from food insecure, low-income households are more likely to experience irritability, fatigue, and difficulty concentrating on tasks, especially in school, compared to other children.155 Feeding America, a national nonprofit that monitors food security, estimates that about one in four (26 percent) children in the county are living in food insecure households as of 2015.156
Oregon Department of Education data report that 38 percent of regional K-12 students were eligible for free or reduced lunch during the 2016-2017 school year. The percentage of students eligible for free or reduced lunch varies significantly from school-to-school within and between the counties, from 19 percent to 65 percent of students attending schools with at least 100 students (Table 4.5). Students whose family incomes are below 130 percent of the federal poverty level ($31,525 annually for a family of four) are eligible for free lunches, and students whose family incomes lie between 130 and 185 percent of the federal poverty level (between $31,525 and $44,863 annually for a family of four) are eligible for reduced-price lunches.

Table 4.5: Percentage of children eligible for free and reduced-price lunch, 2015-2016.

<table>
<thead>
<tr>
<th>School district</th>
<th>Eligible for free lunch</th>
<th>Eligible for reduced-price lunch</th>
<th>Percent of total students eligible for free or reduced lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Linn</td>
<td>357</td>
<td>53</td>
<td>63%</td>
</tr>
<tr>
<td>Greater Albany</td>
<td>3628</td>
<td>695</td>
<td>45%</td>
</tr>
<tr>
<td>Harrisburg</td>
<td>390</td>
<td>104</td>
<td>55%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1953</td>
<td>272</td>
<td>53%</td>
</tr>
<tr>
<td>Santiam Canyon</td>
<td>248</td>
<td>36</td>
<td>7%</td>
</tr>
<tr>
<td>Scio</td>
<td>220</td>
<td>34</td>
<td>32%</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>1293</td>
<td>144</td>
<td>62%</td>
</tr>
<tr>
<td>Linn County</td>
<td>8153</td>
<td>1338</td>
<td>42%</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
<td></td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: Oregon Department of Education, Report: Students Eligible for Free/Reduced Lunch

An analysis of factors determining food insecurity suggests that in 2015, 16 percent of the Linn County population, or nearly 19,000 individuals, were residing in households that were food insecure. Among those who were food insecure, 16 percent earned incomes above 185 percent of the federal poverty level, making them ineligible to receive government assistance programs (Table 4.6). The childhood food insecurity rate was higher, at 26 percent of the children in the region. Of the children living in food insecure households in the region, it is estimated that 25 percent of these children are likely ineligible for federal nutrition assistance programs as they live in households with incomes above 185 percent of the federal poverty level.

* Factors include indicators of food insecurity such as poverty, unemployment, median income; food budget shortfalls; a cost of food index; and national average meal costs.
Table 4.6: Food insecurity in the Linn County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Linn County</th>
<th>Number of food insecure individuals</th>
<th>Percent of population that is food insecure</th>
<th>Percent of food insecure population ineligible for benefits *</th>
</tr>
</thead>
<tbody>
<tr>
<td>All residents</td>
<td>18,560</td>
<td>16%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>7,240</td>
<td>26%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>LBL Region</td>
<td>39,350</td>
<td>16%</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>12,170</td>
<td>24%</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>23%</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Percent ineligible figure is produced by modeling and is an estimate

Source: Feeding America

Supplemental Nutrition Assistance Program Participation

The Federal Supplemental Nutrition Assistance Program (SNAP) is the largest domestic food and nutrition assistance program for low-income Americans. U.S. households must meet certain eligibility criteria, such as income, to receive benefits. As of 2015, an estimated 22 percent of all households (9,984 of 45,100 households) in Linn County received SNAP benefits, compared to 19 percent in Oregon. Of the households in Linn County that received SNAP benefits, 48 percent (4,760 households) had an income in the past 12 months below poverty level, and 52 percent (5,224 households) had an income in the past 12 months at or above poverty level. Of the remaining 88 percent of households (35,116 households) that did not receive SNAP benefits, 9 percent (3,047 households) were below the poverty level. Furthermore, 50 percent of benefit-receiving households that received Food Stamps/SNAP benefits during this time supported children under the age of 18. This rate is higher than Oregon’s 46 percent.

Women, Infants and Children (WIC)

WIC is a public health nutrition program that is vital to the health of women, infants, and children across Oregon. The WIC program provides health and nutrition services to pregnant and breastfeeding women and children ages 0 to 5 that have a household income less than 185 percent of poverty guidelines. Overall in 2016, a total of 3,059 families, or 5,490 individuals, were served by WIC in Linn County; 72 percent of these individuals were infants and children under five, and 28 percent were pregnant, breastfeeding, and post-partum women. Approximately 43 percent of pregnant women in Linn County were served by WIC, as well as 67 percent of all working families in the county.

Emergency Food Support

Linn Benton Food Share, the regional food bank system, distributes emergency food boxes to 23 food pantries (emergency food box agencies) located in both Linn and Benton counties. In addition to the pantries, Linn Benton Food Share also provides assistance through programs,
such as emergency meal sites (soup kitchens), supplemental programs, and gleaners and wood share.\textsuperscript{165}

Below are the most salient demographic characteristics of the population that is served by the Linn Benton Food Share:

- 36 percent of those receiving emergency food are children;
- 7 percent of those receiving emergency food are 65 years and older;
- 55 percent of households have children;
- 46 percent of households had at least one member working;
- 30 percent of households have one or more member working a full-time job;
- 58 percent of households report delaying medical care;
- 68 percent of households report delaying dental care;
- 47 percent of households delay filling medical prescriptions due to cost;
- 56 percent report medical/hospital debts.\textsuperscript{166}

Linn Benton Food Share distributed over 47,000 food boxes from July 2015 through June 2016.\textsuperscript{167} One food box typically contains enough groceries for a four day supply.\textsuperscript{168} In addition, the Food Share served over 272,000 meals in soup kitchens and shelters. Between food boxes and emergency meals, Linn Benton Food Share provided enough meals to feed nearly 2,500 people three meals a day for the whole year.\textsuperscript{169}

**Food Security among Oregon Health Plan Members**

As previously mentioned, about 16 percent of the region’s population is food insecure. Among Medicaid recipients, this number climbs to 50.7 percent. That value is also slightly higher than the reported 48.6 percent for Oregon’s state-wide Medicaid population. About 24.7 percent of the region’s OHP members reported hunger, compared with 22.3 percent of members across the state.\textsuperscript{170}

**Housing and Home Ownership**

Housing is an important part of the built environment and another key factor contributing to good health. Older housing in particular can present multiple threats to health, including the presence of mold, asbestos, lead-based paint, and lead solder in plumbing and in the soil.

Poor quality and inadequate housing contribute to health problems such as infectious and chronic diseases, injuries, and poor childhood development. Indoor allergens and damp housing conditions play an important role in respiratory conditions including asthma, which currently affects over 20 million Americans, and is the most common chronic disease among children. Approximately 40 percent of diagnosed asthma among children is believed to be attributable to residential exposures.
Residential exposure to environmental tobacco smoke, pollutants from heating and cooking with gas, volatile organic compounds and asbestos have been linked with respiratory illness and some types of cancer. People who have difficulty paying rent, mortgage or utility bills are less likely to have an established source of medical care, more likely to postpone treatment, and more likely to use the emergency room for treatment. Families who lack affordable housing are more likely to move frequently. Residential instability is associated with emotional, behavioral and academic problems among children, and with increased risk of teen pregnancy, early drug use, and depression during adolescence.

**Housing Affordability**

Affordable, quality housing provides shelter that is safe and healthy for all people. Housing that costs more than 30 percent of household income is considered to be “unaffordable.” Figure 4.8 below shows the distribution of Linn County residents who rent and own their homes.

**Figure 4.8: Home ownership in the region, 2011-2015**

![Graph showing home ownership distribution]

Figure notes: There are approximately 45,100 households in Linn County. Source: U.S. Census Bureau, American Community Survey, Table S2502

Table 4.7 shows the similarities in housing affordability between Linn County, the region, and Oregon. Similar to Oregon, 51 percent of renters in Linn County spend 30 percent or more of household income on housing rent. Of home owners with mortgages, 35 percent spend 30 percent or more of household income on housing, compared to 36 percent in Oregon. Of home owners without mortgages in Linn County, 15 percent spend 30 percent or more of household income on housing, the same proportion as across Oregon.
### Table 4.7: Occupants with housing cost burden more than 30 percent of income, 2011-2015

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent with housing cost burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linn County</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>36%</td>
</tr>
<tr>
<td>Renters</td>
<td>51%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>35%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>58%</td>
</tr>
<tr>
<td>LBL Region</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>30%</td>
</tr>
<tr>
<td>Renters</td>
<td>55%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>35%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>62%</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
</tr>
<tr>
<td>All residents</td>
<td>32%</td>
</tr>
<tr>
<td>Renters</td>
<td>54%</td>
</tr>
<tr>
<td>Owners with mortgages</td>
<td>36%</td>
</tr>
<tr>
<td>Owners without mortgages</td>
<td>15%</td>
</tr>
<tr>
<td>Residents with annual incomes below $50,000 (renters and owners)</td>
<td>66%</td>
</tr>
</tbody>
</table>

*Source: U.S. Census Bureau, American Community Survey, 5-year estimates*

### Home values

Higher home values can support health, as more valuable homes tend to have design or construction features that support health, such as adequate insulation and weather-proofing. Homes are also a major source of wealth, which helps people afford health care and other health promoting activities. However, high median home prices can also signal inequality or housing insecurity in a community. Unaffordable housing has strong negative effects on health for many of the same reasons that stable housing promotes health.

Home values as reported by the U.S. Census Bureau, American Community Survey, tend to be out of date. Currently this means that home values are underestimated by ACS data. Zillow.com, a housing website, tracks home values based on recent sales and other assessments, and produces more contemporary estimates. Zillow.com currently estimates the median Linn County home value to be $194,000 (as of May 2017), compared to the ACS estimate of $178,000. The median list price of houses listed on Zillow in Linn County is $219,000. Figure 4.9 shows the change in home values and list prices in Linn County over the past 8 years.
Homelessness

Oregon’s Ending Homelessness Advisory Council defines homelessness as being without a decent, safe, stable, and permanent place to live that is fit for human habitation. Understanding homeless populations is a daunting challenge for public health. Even counting the number of people experiencing homelessness is a difficult task, because they tend to lack a fixed address or living location, and many individuals change homeless status over time. Each January, Oregon Housing and Community Services requires communities to conduct a point-in-time count of homeless populations. This snapshot of the homeless population is limited in scope and depth. Canvassers visit shelters, transitional housing, and known homeless encampments. Individuals staying with other people out of economic necessity are not counted, nor are homeless people who are in areas not covered by the canvassing. Furthermore, the one-night count misses any individual who is homeless at other points during the year. Notwithstanding these limitations, the point-in-time estimates have the benefit of being a consistent approach across years and geographies, and therefore may give some insight into the homeless community in each county.

In 2011, the Linn County point-in-time survey counted 135 individuals experiencing homelessness (Table 4.8). All of these individuals were in shelters or transitional housing. There were no street counts conducted in the region in 2011. Sixty-two percent of the homeless population was male. In Linn County, men on average spent 22 months homeless, while women spent 13 months.

The most recent data on homeless populations is from 2016 (Table 4.8). In 2016, there were 253 individuals identified in the January point-in-time survey, an increase of 87 percent in five
years. However, in 2016 the count included unsheltered individuals, which may indicate a larger canvassing effort as well as an increase in the homeless population.

In both 2011, approximately one quarter of the recorded individuals were members of families, both adults and children, but that proportion decreased to approximately 15 percent of recorded homeless individuals in Linn County being members of families. (Table 4.8).

<table>
<thead>
<tr>
<th>Table 4.8: One-night count homeless population figures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Total count</td>
</tr>
<tr>
<td>Sheltered count</td>
</tr>
<tr>
<td>Unsheltered count</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Transgender</td>
</tr>
<tr>
<td>Individuals</td>
</tr>
<tr>
<td>Family members</td>
</tr>
</tbody>
</table>

Table notes: * indicates that cells do not sum to total
Source: Oregon Housing and Community Services, 2011, and Community Services Consortium, 2016

Another source for recording the number of homeless individuals is the set of statistics gathered by federally qualified health centers (FQHCs). Among the data that FQHCs are required to collect is housing status, which they report each year to the federal government. According to the Bureau of Primary Health Care, a patient’s status should be recorded as homeless if the patient was residing in a shelter, transitional housing, on the street, if the patient was doubled up or temporarily living with others, had been homeless within the last 12 months, or resided in a housing program targeted to homeless populations. Compared with the one-night counts, FQHCs may identify homeless individuals who were not staying in shelters or in canvassed encampments or who were homeless at other times throughout the year. However, only those individuals who were able to seek out medical care at an FQHC and chose to do so were identified. Nevertheless, the records provided by the FQHCs indicate a much broader level of homelessness than the one-night counts. In 2015, the Benton-Linn FQHC served approximately 710 homeless patients, or 8 percent of the total population served. This number is a decrease from 2014, when 835 homeless patients were served.174

Student homelessness is a recurring problem in Oregon as well. Across the state, an increasing number of Oregon’s K-12 public school students are homeless at some point during the school year. Homelessness among students has more than doubled since the 2003-2004 academic school year. Just over 6 percent of students in grades K-12 experienced homeless during the 2015-2016 school year (Table 4.9).
Table 4.9: Homeless students grades K-12 in Linn County and Oregon, 2015-2016

<table>
<thead>
<tr>
<th>School District</th>
<th>Number of students in grades K-12 experiencing homelessness</th>
<th>Proportion of student body experiencing homelessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Linn</td>
<td>67</td>
<td>10.5%</td>
</tr>
<tr>
<td>Greater Albany *</td>
<td>342 *</td>
<td>3.6% *</td>
</tr>
<tr>
<td>Harrisburg</td>
<td>46</td>
<td>5.2%</td>
</tr>
<tr>
<td>Lebanon Community</td>
<td>219</td>
<td>5.1%</td>
</tr>
<tr>
<td>Santiam Canyon</td>
<td>13</td>
<td>0.3%</td>
</tr>
<tr>
<td>Scio</td>
<td>46</td>
<td>6.1%</td>
</tr>
<tr>
<td>Sweet Home</td>
<td>243</td>
<td>10.4%</td>
</tr>
<tr>
<td>Linn County *</td>
<td>976</td>
<td>6.0%</td>
</tr>
<tr>
<td>Oregon</td>
<td>--</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Table notes: * Results are reported by school district, not by school. Schools in North Albany (a part of Benton County) do not have specific data and are included in Greater Albany Public Schools and Linn County statistics.

Source: Oregon Department of Education, 2016

Housing and Homelessness among Oregon Health Plan Members

There is a significant disparity in home ownership between Oregon’s Medicaid and non-Medicaid populations. About 21.5 percent of OHP adults own their home, contrasted with the 64.7 percent reported by the state’s general population. In addition, a little over 1 percent of the state’s OHP members are homeless. 175

Conclusion

Socioeconomic factors, income and wealth, form the base of Frieden’s Health Impact pyramid (p. 7) 176 and are powerful determinants of health. Furthermore, socioeconomic factors that are affected by income and wealth, such as education, food security, and housing, in turn have powerful effects on a person’s health. Social determinants of health interact with individual characteristics such as age, and environmental factors such as air quality and proximity to healthy or unhealthy built environments. People with a strong set of social resources are more resilient to challenges to their health, and are better able to navigate the health care system. In the next chapter on access to medical care, many of the disparities seen in social determinants of health recur when people try to access health care services.
Chapter 5
Access to Health Services

Access to medical care is important to physical, mental, and social health. The Institute of Medicine (IOM) defines access to health care as “the timely use of personal health services to achieve the best health outcomes,” with a special focus on the importance of equity of health care usage and health outcomes among and across different groups of people. The ability to access healthcare can impact other areas of life, including employment, education, family life, nutrition, and emotional outlook, which play major roles in one’s overall health status. Scarcity of health services, rising health care costs, lack of insurance coverage, and other limiting factors create barriers that prevent individuals and families from accessing quality health care. Persistent or cumulative barriers to health care lead to worsening health conditions, preventable hospital visits, limited use of preventive care, and other negative health outcomes.

According to the Agency for Healthcare Research and Quality (AHRQ) 2013 National Healthcare Disparities Report (NHDR), there are three steps to attaining adequate access to health care:

- Gaining entry into the health care system,
- Getting access to sites of care where patients can receive needed services, and
- Finding providers who meet the needs of individual patients and with whom patients can develop a relationship based on mutual communication and trust.

Healthy People 2020 cites both the IOM and AHRQ documents on access to health care, and divides access into four major components:

- **Insurance Coverage and Affordability** – Health insurance coverage is highly emphasized by current policy in the United States as a means to affordable health care services.
- **Service Availability** – Having a usual and ongoing source of care, especially a primary care provider, leads to better health outcomes. Existence of preventive services and emergency medical services are also key.
- **Workforce** – Health care centers must be staffed with appropriate employees in order for people to access health care. Healthy People 2020 focuses on tracking the number of primary care providers.
- **Timeliness of Care** – Timeliness is defined as receiving care quickly after a need is recognized. This can be measured both in appointment and office wait times as well as the time lag between identifying a needed service (such as a test or course of treatment) and receiving it.

It is important to examine medical care access and capacity in the larger context of overall factors that contribute to health. “Health care is necessary but not sufficient for improved
health; in fact, health care accounts for only about 10–20 percent of health outcomes, according to some experts.” Social determinants of health, the upstream factors listed in Chapter 4, are responsible for a much larger percentage of health outcomes than medical care alone. People need a healthy and accessible environment to achieve good health. This includes the broader community context, as well as the characteristics of the local health care system itself. Both a strong health system and good population health are needed, and can be mutually reinforcing to achieve optimal health in a community.

Many of the forces that shape the opportunity for better health in the Linn, Benton, and Lincoln tri-county region – education, employment, and transportation, for instance – can also affect access to medical care. Upstream factors play a large role in any individual’s ability to make healthy choices and decisions, and this holds true for accessing medical care. For example, the ratio of providers to patients in a region may be considered excellent, but a prospective patient may work during clinic hours, find transportation difficult to navigate, or be unable to find childcare options during the time of the visit. While having access to good doctors and health care facilities are visible indicators of access to medical care, there are numerous other factors that influence opportunities for health. This chapter will highlight recent data on the four major components discussed above.

**Demographic Differences in Access to Medical Care**

Some populations face increased barriers to accessing care and receive poorer quality care when they get it. In its 2011 reports on health care quality and disparities, the Agency for Healthcare Research and Quality (AHRQ) finds that, at a national level, low income individuals and people of color experience more barriers to care and receive poorer quality care. Moreover, other research shows that individuals with limited English proficiency are less likely than those who are English proficient to seek care even when insured. Research also finds differing patient experiences and levels of satisfaction by race, gender, education levels, and language.

**Health Insurance Coverage**

Lack of adequate health insurance coverage is often a major barrier to medical care. People who are uninsured or underinsured receive less medical care than their insured counterparts. To be underinsured means that out-of-pocket costs for health services are (or would be) a high share of an individual’s income or would discourage seeking prompt, needed care even though an individual has some form of coverage. Inadequate coverage creates a financial barrier between a patient and needed medical care services. People without health insurance are less likely to know about or seek out preventive services, and are more likely to have new and worsening health problems, and shorter lifespans. In general, even when uninsured or underinsured persons receive medical care, care is often postponed (due, in part, to concerns about cost). These individuals suffer significantly worse health outcomes than those who have adequate medical coverage.
Recent changes in policy on both the national and state level have altered the landscape of health care and health insurance access in the past five years. The Affordable Care Act (ACA), enacted on a federal level in 2010, made it illegal to deny coverage due to pre-existing medical conditions, mandated health coverage for most individuals, expanded Medicaid funding and coverage, and subsidized health insurance through exchanges for lower income individuals,* among other provisions. Most of these provisions went into effect by 2014. As part of the ACA, Oregon accepted federal funding to expand Oregon Health Plan (OHP) membership, setting targets for enrollment and expanding the variety of services (e.g. dental services). Statewide, membership in OHP increased 58 percent over less than 4 years, from 627,000 members in August 2013 to 992,000 members in May 2017. Linn County enrollment has swollen from 24,000 to 36,000 over the same time period. In addition to OHP expansion, 80 percent of the consumers registered to the new health care exchange received tax credits and/or cost-sharing subsidies as of April 2014.

Insurance coverage rates in the region, and across the nation, have risen recently, largely due to the ACA and other healthcare transformation policies. The regional insurance coverage rate in 2012 was 76 percent, rising to 97 percent in 2014. As of 2014, 98 percent of Linn County, 95 percent of Benton County, 96 percent of Lincoln County residents have insurance. These rates include adults age 65 and older, which is important because that age group has insurance coverage rates of close to 100 percent due to Medicare.

**Uninsured Rates**

Insurance coverage rates have increased over the past eight years, and corresponding uninsured rates have decreased. Figure 5.1 displays this trend for those under age 65.

* Health insurance exchanges are online, state or federally run marketplaces where an individual can compare plans from different insurance companies and purchase individual health insurance. Individuals with a qualifying level of income can receive federal subsidies to help pay premiums on health insurance plans.
Figure 5.1. Proportion of individuals aged 0 to 64 without health insurance in Linn County, the LBL Region, and Oregon, 2010-2015

*Figure notes: There are approximately 98,000 individuals in Linn County under age 65. The data represents individuals who lacked health insurance at the time the data was collected. Individuals age 65 and older are excluded from this figure.*

*Source: U.S. Census Bureau, Small Area Health Insurance Estimates*

Because of the rapidly shifting health care and health insurance landscape, local data points that accurately capture these changes are still forthcoming. With that in mind, data from before the ACA expansion showed major disparities among the population based on age, race, and income. Examining these disparities across the region can help provide a baseline for future comparisons with disparities which exist after ACA expansion once the data is available.

Uninsured rates differed greatly between age groups before the ACA. In 2015, the uninsured rate among children across the region was lower than the rate for working-age adults (Table 5.1).192 Overall, in both age groups, county uninsured rates were somewhat higher compared to the rest of Oregon. Across the county and state, less than one percent of individuals 65 and older lack health insurance.

<table>
<thead>
<tr>
<th>Table 5.1: Uninsured rates in the Linn County and Oregon, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linn County</td>
</tr>
<tr>
<td>Under 18 years old</td>
</tr>
<tr>
<td>18 to 64 years old</td>
</tr>
<tr>
<td>65 years old and older</td>
</tr>
</tbody>
</table>

*Source: U.S. Census Bureau, American Community Survey 1-year estimates*

Insurance coverage rates were also pronounced across racial and ethnic categories, employment status, and citizenship status. In 2015 in Linn County, approximately 11 percent of Latino individuals were uninsured, compared to 8 percent of the White population. Data on other races does not have a large enough sample size to estimate uninsured rates for a single year, but five-year averages from 2011-2015 indicate that Black or African American, American
Indian and Alaska Native, and Some Other Race groups have uninsured rates approximately twice as high as the uninsured rates of White, Asian, and Two or More race groups. Additionally, over 35 percent of the unemployed are uninsured, compared to 15 percent of those currently employed. The foreign born and non-citizens have very high uninsured rates, at 41 percent and 60 percent, respectively.\textsuperscript{193} Insurance coverage data is not available for undocumented immigrants, and undocumented immigrants are excluded from both Medicaid and the health insurance exchange.\textsuperscript{194} However, the Oregon Legislature passed a “Cover All Kids” bill during the 2017 legislative session that guarantees that all individuals under the age of 18 will be covered by Medicaid, regardless of immigration status.

Among the employed, those working less than full time year-round were uninsured at a higher rate (12 percent) compared to those working full time year-round (9 percent). Residents earning less than 200 percent of the federal poverty level are more likely to be without insurance coverage than those with higher incomes, 15 percent versus 5 percent.\textsuperscript{195}

The implementation of the Affordable Care Act has had a major impact on insurance coverage rates in the region as Figure 5.1 demonstrates. However, even given the growth in insurance coverage rates over the past 5 years, insurance gaps and inequalities remain, especially for people of color, individuals living in rural areas, and low income workers.\textsuperscript{196} As data for recent years become available, it will be important to measure these disparities.

**Health Insurance Among Children**

Examining insurance coverage rates among children up to age 18 (Figure 5.2) shows a gradual increase in all three counties in the region from 2006 to 2014. As of 2014, all three counties had an insurance coverage rate of 92 to just over 95 percent for children under the age of 18.
Figure 5.2. Proportion of children age 0 to 17 without health insurance in Linn County, the LBL Region, and Oregon, 2006-2015

Figure notes: There are approximately 28,000 children age 0-17 in Linn County. The data represent children without coverage at the time the data were collected.

Source: Kids Count Data Center

Insurance Types and Sources

People secure insurance from many different sources, including employer-based insurance, private insurance and public insurance. Figure 5.3 illustrates the distribution of the type of health insurance coverage among tri-county residents as of February 2015; with employer-based health insurance constituting the majority of coverage. The Oregon Health Plan provides health care coverage to low-income Oregonians. Medicare is the federal health insurance program for people who are 65 or older, certain younger people with disabilities, and people with end stage renal disease.¹⁹⁷
Figure 5.3: Percent of population covered by different insurance types in Linn County, 2011-2015

Figure notes: Two or more insurers includes individuals with two or more private insurers, two or more public insurers, and other combinations. All other categories represent individuals with only one source of insurance. The population underlying this data is approximately 118,000.

Source: U.S. Census Bureau, American Community Survey, 5-year estimates

Medicare

Medicare provides insurance to 21,880 Linn County residents over the age of 65 and 4,100 younger Linn County residents with permanent disabilities (about 22 percent of all Linn County residents).\(^{198}\) The program helps pay for primary care, prescription drugs, home health care, hospitalization, and other health services. Part of Medicare is funded by a payroll tax, and other parts are funded by premiums paid by Medicare recipients. Medicare does not pay for all services and supplies that are needed by older adults and individuals with disabilities. For example, Medicare does not pay for routine dental care and does not cover long-term care. Most Medicare recipients have additional coverage to make up these gaps, whether private insurance or public insurance such as Medicaid.\(^{199}\) Sixty-nine percent of Linn County residents who have Medicare have another source of health insurance.\(^{200}\)

Oregon Health Plan

The Oregon Health Plan (OHP) provides health care coverage to low-income Oregonians through programs overseen by Oregon Health Authority. Service to OHP members in the region is largely provided through the local coordinated care organization (CCO), InterCommunity Health Network-CCO (IHN-CCO). Eighty-five percent of OHP members in Linn County are enrolled with IHN-CCO. The other 15 percent of the county’s OHP membership are enrolled in another CCO, Managed Care, or Fee for Service (Figure 5.4).\(^{201}\)
The OHP population increased greatly from 2010 to 2015. In 2010, approximately 17,500 Linn County residents were OHP members. In 2017, there were 34,600 members, an increase of almost 100 percent from 2010.\textsuperscript{202,203}

\section*{Cost of Medical Care}

Insurance coverage is only part of the cost of medical care. Additional costs are referred to as cost-sharing and include costs such as copayments, coinsurance, and deductibles. Health reform legislation has reduced financial burdens for many people with a lower income or significant health care needs. Nevertheless, one in three Americans say they have put off getting medical treatment that they or their family members need because of cost.\textsuperscript{204} According to the most recently available data (from 2006 to 2012), 17 percent of adults in Linn County, 10 percent of adults in Benton County, and 19 percent of adults in Lincoln County reported they did not see a doctor in the past 12 months because of cost.\textsuperscript{205}

\section*{Cost of Health Care Services}

Oregon has one of the highest hospital adjusted expenses per inpatient day when compared with all 50 states. The average cost per inpatient day in Oregon is $3,368 as of 2015, while the average cost across the United States is $2,271.\textsuperscript{206} Data that is specific at the county or tri-county level is not publically available.
Cost of Insurance Premiums

When insurance is purchased through an employer, the cost of the premium may be shared by both the employee and the employer. Premium costs are set by the insurer, but the employer decides how much of the cost to pass on to their employee. Individuals who do not purchase insurance through an employer can purchase insurance through the Marketplace Exchange or directly through a private insurance company. The ACA also provides subsidies to reduce premiums, thus making options more affordable for consumers when bought in the marketplace. Regardless of where insurance is purchased, costs have steadily climbed over time. Since at least as far back as 1970, growth rates of health spending per capita have exceeded the rate of growth for GDP per capita. Within the U.S. between 2002 and 2012, the average annual premium for family coverage through an employer nearly doubled from $8,003 to $15,745. Oregon insurance premiums are slightly below the U.S. average for insurance premiums. In 2015, the average cost of employer-based family insurance premiums in the U.S. was $17,322 annually; the average cost in Oregon was slightly lower at $17,141.

Table 5.2 provides a snapshot of insurance premium costs for Oregon. It includes average monthly health care insurance premium costs paid by employee and employer, as well as the monthly cost for an individual purchasing non-employer provided insurance through the health insurance exchange. Individuals purchasing private, non-employer based coverage in Oregon are paying considerably more than individuals who purchase insurance through an employer.

<table>
<thead>
<tr>
<th>Source of insurance</th>
<th>Type of coverage</th>
<th>Individual/Employee contribution to annual premium</th>
<th>Employer contribution to annual premium</th>
<th>Total annual premium cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer-purchased insurance</td>
<td>Individual</td>
<td>$ 898</td>
<td>$ 4,924</td>
<td>$ 5,822</td>
</tr>
<tr>
<td>Employer-purchased insurance</td>
<td>Family</td>
<td>$ 4,729</td>
<td>$ 12,412</td>
<td>$ 17,141</td>
</tr>
</tbody>
</table>

Comparable data for individual or family marketplace plans are not available, but in 2013, an individual marketplace-purchased plan cost $2,460.

Looking at the average cost for insurance premiums does have limitations due to the number of variables that influence costs for insurance premium (e.g., age, gender, health risk factors, zip code). However, it can give a general picture of the financial burden to both employers and employees for their health insurance coverage.
Medical Care Hardship Due to Cost

Uninsured Americans are still the most likely to report having put off medical treatment because of cost. However, even among those who have insurance, cost can be a barrier to care. Data from national studies report that families with private, non-employer sponsored insurance and with low income earnings face barriers to accessing services.\(^{211}\)

National studies have found a number of challenges to meeting premiums and deductibles for low and middle income families with insurance, including the fact that households with the lowest incomes (100 percent to 249 percent FPL) lack resources to meet health insurance cost sharing demands, such as deductibles, co-pays, and co-insurance.\(^{212}\) The majority of these families (68-80 percent) surveyed by the Kaiser Family Foundation in 2013 reported that they could not afford to cover the cost of their insurance deductible.\(^{213}\) Similarly, among families earning 250-400 percent of the federal poverty level, between one third and one half reported that they were unable to afford the out-of-pocket deductible limits.\(^{214}\)

Findings from the national studies reported above suggest that households in the region with insurance coverage may also experience significant barriers to health care services due to cost of care.

Access Capacity

Primary care, mental health, and oral health are foundational to a comprehensive offering of medical care for a population. Examining the table below can help to provide insight on the number of providers in each of these categories. It displays one way to measure access capacity: the number of residents per health care provider.

While primary care provided by physicians is important to the quality of the health care system, as the Robert Wood Johnson Foundation writes,

> Physicians are not the only providers of primary health care. Other professionals can serve as usual sources of routine, preventive care including nurse practitioners (NP), physician assistants (PA), and clinical nurse specialists. The Health Services Research Administration estimates that the primary care NP and PA workforces are projected to grow far more rapidly than the physician supply in the next ten years, and could help alleviate shortages as demand increases.\(^{215}\)

One reason for the expected rapid increase in the supply of NPs and PAs is that those qualifications typically take less time to obtain than a physician’s Doctor of Medicine (MD) or Doctor of Osteopathy (DO) license. Other primary care providers are especially vital in rural areas that may not have the population density to support a full time physician. Many rural communities in the region have clinics staffed by nurse practitioners and other primary care
providers. In the State of Oregon, NPs have independent prescribing authority, while PAs must abide by the practice agreement of a supervising physician.\textsuperscript{216}

Table 5.3 below shows the number of residents per provider for primary care physicians and other types of providers. The numbers assume that the residents would be equally distributed across providers within a given provider type. Therefore, a smaller number of residents to providers indicates more capacity.

<table>
<thead>
<tr>
<th>Provider type</th>
<th>Number of residents per provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Linn</td>
</tr>
<tr>
<td>Primary care physicians</td>
<td>1,470</td>
</tr>
<tr>
<td>Other primary care providers (non-physicians)</td>
<td>3,444</td>
</tr>
<tr>
<td>Mental health providers</td>
<td>780</td>
</tr>
<tr>
<td>Dentists</td>
<td>1,700</td>
</tr>
</tbody>
</table>

Table notes: Other primary care providers include nurse practitioners, physician assistants, and clinical nurse specialists

Source: County Health Rankings

Having a usual primary care provider (PCP) is associated with improved health outcomes, increased health equity, and lower healthcare costs. Effective PCPs work to maintain sustainable relationships with patients, connect them with additional health resources in the community, and coordinate their care. Patients with ongoing access to PCPs and other healthcare services have better relationships with their providers and are more likely to receive appropriate care than patients without a regular healthcare provider.\textsuperscript{217}

A 2012 study concluded that a primary care team (PCP and non-PCP staff) could reasonably care for a panel size between 1,387 and 1,947 patients.\textsuperscript{218} The region has a ratio of 1,168 patients for each primary care physician. Using these ratios as benchmarks, the tri-county region has a good ratio of patients per PCP. Linn County has a higher ratio than the region, but it is important to consider the dynamics of the area. Benton County is a regional health hub whose providers often see patients from Linn and Lincoln counties.

Behavioral/mental health services include an array of resources including assessments, individual and group therapy, case management, and other supportive therapies for people with a mental illness and/or addictions. A continuum of behavioral health services is available in Linn, Benton, and Lincoln counties. Included in these services are acute care inpatient facilities for adult psychiatric patients, specialty mental health services for adult and child mental health and substance use disorders, residential services, and therapeutic services for clients with mild or moderate behavioral health needs. However, many residents have difficulty accessing these services due to limitations in geography, income, cultural competency, or time.
The Benton, Lincoln, Linn Regional Oral Health Coalition has recently completed a needs assessment which provides a more comprehensive look and analysis of oral health needs in the region. Regionally there are about 1,730 residents for each oral health provider. This ratio is worse than the ratio in Oregon, which has about 1,360 residents per provider. Additionally, there is less variation between counties compared to primary care providers. The oral health provider ratios range from 1,600 to 1,850 residents per provider across the counties.

**Oregon Health Plan Access to Care**

According to public data from IHN-CCO, as of 2017 there are 85 providers practicing in Linn County who accept Oregon Health Plan insurance. There are an additional 4 providers in North Albany (Benton County). Of these 89 providers, 73 are physicians and 16 are NPs or PAs.

As mentioned above, patients having an established primary care team is critical for a variety reasons. An important trend among Medicaid participants in the region is the percentage of members that are enrolled in a primary care home. In 2015, IHN was 2nd in the state at 94 percent. This value dropped to just under 85 percent in 2016, the worst decline in the state.

For oral health, the percentage of OHP members in Linn County receiving any dental service in 2015 was 39.3 percent. This is slightly higher than the regional value of 38.5 percent.

IHN-CCO members were also asked a series of questions in a CAHPS* survey in 2015 to understand the access to care and quality of care they receive. Of those who responded:

- Eighty eight percent of respondents reported that they always or usually received immediate care when they needed it.
- Seventy nine percent of respondents reported that the always or usually got an appointment for routine care as soon as they needed it.
- Ninety percent of respondents reported that their provider always or usually explained things in a way that was easy to understand.
- Ninety percent of respondents reported that their provider always or usually listened carefully to them.
- Ninety percent of respondents reported that their provider always or usually showed respect for what they had to say.
- Eighty seven percent of respondents reported that their provider always or usually spent enough time with them.
- Ninety five percent of respondents reported that their health plan’s customer service staff were always or usually courteous and respectful.

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*CAHPS stands for Consumer Assessment of Healthcare Providers and Systems and is developed and maintained by the Centers for Medicare and Medicaid.
Medical Services and Workforce

Medical needs of people who live, learn, work and play in Linn County are met through a variety of medical services, and residents of the county often travel to other counties for the care they need. Private group and individual practices offer primary care, dental, mental health, services for the developmentally disabled, specialty care, and alternative medicine services. Corvallis functions as a center for regional healthcare and enjoys unusually sophisticated health services for a community of its size. Albany and Lebanon are the two main cities providing medical care in Linn County. The range of services include the 79-bed Samaritan Albany General Hospital, an acute care facility, and the Samaritan Lebanon Community Hospital, a 25-bed critical access hospital. Safety net providers serve a large proportion of low-income, uninsured, and rural populations through community health centers, rural health centers, school-based health centers, public health, and other community service organizations. Traditionally, safety net clinics focus on primary care and may also provide mental health, oral health, and pharmacy services.

Safety Net Services & Community Benefits

The health care “safety net” refers to the component of the health care system serving low-income and uninsured people. Safety net services are complemented by community funding, programs, and activities.

Federally Qualified Health Centers* (FQHCs) and Free Clinics or “charity” clinics are the most common types of safety net clinics. FQHCs in the region provide primary care, mental/behavioral health, and oral health services. Linn County has two federally qualified health centers: one in Lebanon and one in Sweet Home. These clinics operate under the umbrella of the Community Health Centers of Benton and Linn Counties. The Community Health Centers of Benton and Linn Counties served just over 9,000 patients in 2015. Several auxiliary safety net providers also serve the region’s vulnerable populations, such as women and children, persons experiencing homelessness, and people who are HIV-positive. Albany InReach Services is a volunteer-based group that provides medical, dental, and mental health care to those in poverty and living in Albany, Millersburg, and Tangent.

Cultural and Linguistic Competency

One measure of workforce competency is quantifying the level of cultural and linguistic ability among providers. The Center for Linguistic and Cultural Competency in Health Care (CLCCHC) has created National Standards for Culturally and Linguistically Appropriate Services (CLAS) in Health and Health Care in order to “…improve health care quality and advance health equity by establishing a framework for organizations to serve the nation’s increasingly diverse population.”

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* FQHCs have a legal mandate or expressly adopted mission to serve all patients, regardless of ability to pay or legal status.
These standards are used by many health and medical care organizations as a tool in order to improve cultural competency. Cultural competency alone cannot address disparities in health, but is seen as a way to increase access for all patients and promote health equity.

Cultural competency, while often framed in terms of language barriers, includes more than having a provider who is able to speak the same language as the patient. By using the National CLAS Standards as a framework, it is clear that communication must include respect, engagement, and overall health literacy as well. This includes the ability to effectively communicate with and understand diverse patients, including those from at-risk populations such as LGBTQ, developmentally diverse, elderly, and those with chronic mental health issues.

Low-income Latinos, and migrant and seasonal farm workers living in the tri-county region face multiple barriers to accessing culturally and linguistically appropriate health care and other related prevention, treatment, and disease self-management services. Many are employed in agriculture sectors that provide few or no employment benefits, or live in geographically isolated rural areas with limited access to public transportation. Cultural, linguistic, and literacy barriers further reduce access to needed information. Oregon’s Latino population is expected to grow by an anticipated 184 percent from 2010 to 2025, increasing the need for health services by this population.

**Oregon Health Plan Race/Ethnicity Perceptions**

Medicaid recipients’ perception of treatment when seeking health care is different among races and ethnicities. Overall, 6.4 percent of the state’s adult OHP population feel that their health care experience is worse than other races and ethnicities. This value grows to 7.8 percent when looking at the local region.

**Health Care Professional Shortage Areas**

Knowing the number of providers and types of services are very important for gauging the capacity and presence of a health care system. However, an understanding of the geographical distribution of these services helps paint a more accurate picture.

While the region enjoys a good ratio of health care providers to overall population, geographic distribution of providers can make it difficult for those with limited transportation to access services. Because rural areas of the region have either no or very few medical care providers, portions of the region are designated as geographic Health Care Professional Shortage areas (HPSA). Designation as an HPSA means that there is an increased risk of poor access to health professionals. Linn, Benton, and Lincoln counties all qualify in part as an HPSA for primary care, dental health, and mental health.
In addition to the geographic designation, the region also has population-based HPSAs for migrant seasonal farmworkers and low income individuals. Migrant seasonal farmworkers and their families are a particularly vulnerable subgroup of the Latino/Hispanic population.

Farmworkers have different and more complex health problems than those of the general population. Many of the Latino/Hispanic migrant seasonal farmworkers are documented but have undocumented family members with them. Many are employed in agriculture sectors that provide few or no employment benefits. While most are low income, many immigrants and migrant seasonal farm workers do not qualify for Medicaid due to their residency status or they are unable to access Medicaid due to language, transportation and cultural barriers.\textsuperscript{233}

**Emergency Responders**

Emergency Management Services (EMS) responses serve an important role in the community. According to the Oregon Office of Rural Health, the mean travel time to the nearest hospital for rural service areas is 23 minutes. Estimated travel time is calculated from the largest town/city in each of the rural service areas to the nearest town/city with a hospital. This is the protocol unless the city already has a hospital, in which case driving time is defaulted to 10 minutes.\textsuperscript{234} Seven areas in the region have a mean travel time to the nearest hospital which is greater than 23 minutes, with the longest mean travel time in eastern Linn County at approximately one hour.\textsuperscript{235}

**Timeliness**

Once a health need is recognized, a health care system must be able to respond to this need in a timely manner. Measures of timeliness include the length of time it takes to get a medical appointment, wait time in doctors' offices and emergency departments, and the interval between identifying a need for specific tests and treatments and actually receiving services.

According to Healthy People 2020, in 2013, 4.9 percent of the U.S. population reported delays in receiving necessary care. For families below 200 percent of the poverty line, the proportion increased to nearly 7 percent.\textsuperscript{236} Individuals enrolled in InterCommunity Health Network (IHN-CCO), the Coordinated Care Organization (CCO) for the region, reported that they received appointments and care when needed 85.5 percent of the time in 2015, up from approximately 82 percent of the time in 2011.\textsuperscript{237} When looking at Oregon CCOs as a whole, timeliness for children increased from 76.1 percent to 88.7 percent between 2011 and 2015; the percentage of adults reporting timely care increased only 0.8 percentage points, from 79.4 percent to 80.6 percent.\textsuperscript{238}

There is evidence that type of insurance can affect the timeliness of care for an individual. A 2014 study, in which researchers called primary care providers to set up mock appointments, found significant disparities in the ability to successfully set up an appointment by insurance type.\textsuperscript{239} Callers representing themselves as privately insured in Oregon were able to secure a
timely appointment 75 percent of the time, while those calling as Medicaid beneficiaries were only able to do so 37 percent of the time. It is possible that this disparity was magnified at the time of the study (calls were made in 2012 and 2013), as the health care transformation plan in Oregon created a new pool of Medicaid patients looking for services without expanding workforce capacity. However, this appears to be a similar trend across the nation. When the privately insured were turned down, the reason was largely because the doctor was not taking new patients. Conversely, 69 percent of Medicaid callers across multiple states were explicitly told their type of insurance was not accepted. Uninsured patients in Oregon were able to book an appointment 71 percent of the time; however that was with an up-front cash payment that averaged $176. Only 20 percent of uninsured appointments cost less than $75. In addition to causing economic hardships, expensive medical services can also cause delays in receiving medical care, as individuals have to seek alternative, less expensive sources of care, or wait until they have enough money to pay for care.

**Timeliness in Access to Care for the Oregon Health Plan**

Statewide, the percentage of OHP members who thought they received timely care was about 84 percent in 2016. This varies widely by race, ranging from 62.8 percent (Asian Americans) to 86.6 percent (American Indians or Alaska Natives) in adults. The IHN region 2016 results (82.5 percent) were down from the 2015 results (85.5 percent).

**Preventable Hospitalizations**

Preventable hospital stays are another way to measure timely health care. Measurement focuses on hospital admissions for conditions that might otherwise have been controlled in an outpatient setting. Effective management of chronic conditions (e.g. asthma, heart disease and diabetes) on an outpatient basis can help avoid hospitalizations. Likewise, timely outpatient care for conditions such as pneumonia or cellulitis can often prevent deterioration and hospitalization. Local data is available for Medicare enrollees and preventable hospital stays as of 2014. Linn County has a rate of 40 preventable admissions per 1,000.

**Emergency Services**

Emergency services are an important indicator of timely access to medical care, as they represent the most time-sensitive and critical medical conditions. Samaritan Albany General Hospital had approximately 29,000 emergency department visits (not unique patients) in 2015. Samaritan Lebanon Community Hospital had approximately 20,000 emergency department visits in 2015. The following table (Table 5.4) provides further statistics for Samaritan Albany General Hospital and Samaritan Lebanon Community Hospital regarding timely care in the emergency department in 2015-2016.
Table 5.4: Emergency room statistics for Linn County hospitals, 2017

<table>
<thead>
<tr>
<th></th>
<th>Samaritan Albany General Hospital</th>
<th>Oregon average for hospitals of similar traffic to Albany</th>
<th>Samaritan Lebanon Community Hospital</th>
<th>Oregon average for hospitals of similar traffic to Lebanon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median wait time</strong></td>
<td>16 minutes</td>
<td>29.5 minutes</td>
<td>16 minutes</td>
<td>19 minutes</td>
</tr>
<tr>
<td>patients spent in an emergency department before being seen by a medical professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Median wait time for pain medication among emergency department patients with broken bones.</strong></td>
<td>37 minutes</td>
<td>53 minutes</td>
<td>32 minutes</td>
<td>53 minutes</td>
</tr>
<tr>
<td><strong>Percent of emergency department patients who left before being seen</strong></td>
<td>1 %</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: Hospital Compare, Medicare.gov

Transportation to Medical Care for Oregon Health Plan Members

Oregon Cascades West Council of Governments coordinates the Cascades West Ride Line, which provides transportation to and from non-emergent medical appointments for Oregon Health Plan and Medicaid members. Beginning from the expansion of Medicaid in 2013, the Ride Line has increased its service from 2,300 clients in the third quarter of 2013 to 3,300 clients in the second quarter of 2015. The total number of trips increased from 25,000 trips to 41,500 trips over the same time period.245

Oral Health Services

Oral health is a key indicator of wellbeing, and, especially among children, access to oral health services is important in creating a foundation of health.246 There is little county level data on access to oral health care.

The Oregon Pregnancy Risk Assessment Monitoring System (PRAMS) asks new mothers and parents of two-year-olds about their dental care. In 2011, 52 percent of pregnant women visited the dentist during their pregnancy. In 2011, 24 percent of two-year-olds in Oregon had had a dental visit. 247

According to the Oregon Smile Survey, in 2012, 38 percent of children age 6-9 had protective sealants on at least one permanent molar, and 3 percent of children age 6-9 were in need of urgent dental care. 248
Oregon Healthy Teens data indicates that 71 percent of Linn County 8th graders and 72 percent of Linn County 11th graders had seen a dentist for preventive care in the past year. These proportions are slightly lower than among Oregon students (73 percent and 75 percent, respectively). \(^{249}\)

There is no available county level data on adult oral health access. Sixty-seven percent of all Oregonians had seen a dentist within the past year. The most common reason given for not visiting a dentist was lack of insurance or inability to pay (44 percent of respondents who do not usually visit a dentist). \(^{250}\)

### Oral Health Services for Oregon Health Plan members

Among dentists in Oregon, 58.5 percent report that they do not see Medicaid members. Among dentists who do see OHP members, 46.1 percent have less than 25 percent Medicaid patients in their mix. \(^{251}\)

Seventy-seven percent of children and 49 percent of adult OHP members had a regular dentist in 2015. \(^{252}\)

When examining service rates by race and ethnicity, Hawaiian and Pacific Islander Medicaid members receive the lowest rates of dental services at 29.8 percent, while Asian American members have the highest rates at 39.3 percent. \(^{253}\)

In 2016, 20 percent of all IHN-CCO members reported receiving a preventive dental service during the previous year. 51 percent of IHN-CCO members who were children had a preventive dental service during the previous year. However, only 16 percent of IHN-CCO members who were children received at least two topical fluoride applications during the past year. And only 6 percent of IHN-CCO children age 6 or below had an oral health assessment in 2016. \(^{254}\)

### Behavioral Health Services

Residents of Linn County with behavioral health illness such as mental illness and substance abuse disorders are served by a number of different types of providers, including the hospital system, private clinics, county behavioral health, residential facilities, and individual practitioners. Many residents with behavioral health issues are also treated within the criminal justice system in Linn County and Oregon.

There are approximately 320 Linn County residents who are being treated at the Oregon State Hospital or in a residential facility. This represents a rate of 266 individuals per 100,000 residents, compared with a rate of 574 individuals per 100,000 residents statewide. This is due to higher statewide institutionalization rates at all facilities, and especially at the Oregon State Hospital and in supportive housing. \(^{255}\)
There are longstanding gaps between the need for behavioral health services and the capacity of these services. The National Survey on Drug Use and Health estimates that 4 percent of youths, 7 percent of young adults, and 2 percent of adults age 26 and up are in need of services but are not receiving treatment for illicit drug use. The gap for alcohol treatment is generally wider, with 13 percent of young adults and 6 percent of other adults needing but not receiving treatment.256

Oregon Health Plan members

The Oregon Health Plan covers mental health and substance abuse disorder treatment, and as a result, treatment rates for these conditions are substantial. In Linn County, 4,311 Oregon Health Plan members are receiving mental health services through OHP, and 796 members are receiving substance abuse disorder treatment services.

Table 5.5 shows the percentage of OHP members who receive treatment for mental health conditions and substance abuse disorders. These proportions demonstrate both the burden of disease and also access to care, with the caveat that disease burden is always higher than treatment rates, but by how much is unknown. Young adults are generally less likely to seek treatment, so the treatment rates may understate the comparable disease burden.

Table 5.5: Percent of OHP members in Linn County receiving treatment for mental health conditions and substance abuse disorders, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Mental health conditions</th>
<th>Substance abuse disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children age 0 – 17</td>
<td>8.2 %</td>
<td>1.5 % *</td>
</tr>
<tr>
<td>Young adults 18 – 25</td>
<td>9.8 %</td>
<td>3.6 %</td>
</tr>
<tr>
<td>Adults 26 and older</td>
<td>12.9 %</td>
<td>4.8 %</td>
</tr>
<tr>
<td>All members</td>
<td>10.7 %</td>
<td>4.1 %</td>
</tr>
</tbody>
</table>

Table notes: * Substance abuse statistics for children under 18 were only reported for those aged 12-17
Source: OHA Linn County Behavioral Health Profile

Conclusion

Examining the ways in which various populations interact with the health care system is important to help us recognize the barriers that many residents face when obtaining medical care. As highlighted throughout this chapter, the data-driven exploration of healthcare access is still developing, as are the frameworks that act as a guide. In addition, the impact of the Affordable Care Act on access to health care is still forthcoming and major changes in access are expected after the expansion of health insurance and restructuring of the health care delivery system. Beyond the lack of data surrounding the ACAs impact on access to health care, major gaps exist in our understanding of the disparities experienced by different populations in accessing health care. We still have little knowledge on a local scale of how factors such as race and ethnicity, education level, disability status, language ability, immigration status, and gender identity influence an individual’s ability and desire to access medical care. Finally, closing gaps in quantifying the workforce would provide a better understanding of the co-development of
the health care system with those it serves. The data presented in this chapter can support an initial understanding and baseline of access to medical care in the region, while calling attention to challenges faced by many in our community when accessing medical care.
Chapter 6
Physical Health

Traditional measures used to evaluate the health of populations are morbidity (incidence of disease) and mortality (deaths). Examining various cancers, heart disease, and other major causes can highlight notable improvement as well as areas in which the region is in need of improvement. The more detailed data available about disparities within particular populations and illnesses, the better communities can address these issues effectively in the region. Many of the conditions that cause illness and death within the region have well-established causes, a number of them rooted in behaviors or risk factors that can be prevented.

Throughout this chapter, many statistics are aggregated over a set of years in order to report reliable data. When incidence or prevalence rates are reported across many years, the statistic is per person per year. For example, the all-cancer incidence rate in Oregon across 2008-2012 was 448 cases per 100,000 people; this means that in each of the five years between 2008 and 2012, 448 cases were diagnosed for every 100,000 people in the population.

Maternal and Infant Health

All fertility and maternal/infant health data is based on the county of residence of the mother, not the county where the infant was born.

Fertility Rate (Total Fertility Rate, TFR)

The total fertility rate (TFR) is the total number of births per 1,000 women in a given year. The TFR is based on the age-specific fertility rates of women in their “child-bearing years”, which is ages 15 to 44. Figure 6.1 below illustrates the TFR of Linn County among different racial/ethnic groups. While the overall TFR for the region is lower than that of Oregon, both Linn and Lincoln counties have a TFR that is higher than the state’s and nearly twice that of Benton County. Among racial/ethnic groups, women who identify as Hispanic or Latina have the highest TFR in the region, equating to about 1.5 times the TFR of women who identify as White. In Linn County, women who identify with multiple races had a slightly higher fertility rate than women who identified as Hispanic or Latina.
Figure 6.1: Fertility rate, total (births per 1,000 women) by race/ethnicity in Linn County, 2013-2015

Figure notes: These data represent 4,367 births over 3 years. Fertility rate data is based on county of residence, not county of birth.

Source: Oregon Healthy Authority, Center for Health Statistics, Birth Certificate Data

Compared to Oregon, women between 18 and 29 in Linn County tend to have a higher fertility rate. The highest fertility rate in Linn County occurs for women between ages 25 to 29. This is also true when observing rates for the tri-county region and the state.257

Figure 6.2: Age-specific fertility rates (births per 1,000 women) by maternal age in Linn County, 2013-2015

Figure notes: These data represent 4,367 births over 3 years.

Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data
Prenatal Care and Healthy Pregnancy

Infants born to mothers who receive no prenatal care are three times more likely to have a low birth weight, and five times more likely to die of complications than those whose mothers received prenatal care. Prenatal care with/by a medical professional includes discussing a mother’s healthy choices and body changes; prenatal testing and counseling; identifying and treating medical complications like gestational hypertension, diabetes, and anemia; promoting optimal weight gain; testing for and treating sexually transmitted infections; oral health assessment and treatment; and maternal mental health, tobacco and substance abuse screening.

Across the tri-county region from 2013 to 2015, a total of 87.7 percent of all mothers were able to access adequate prenatal care, slightly higher than the 86.7 percent of Oregon mothers during the same time period. Across all age groups in the region, the percentage of mothers that accessed adequate prenatal care was consistently higher when compared with Oregon. There are disparities that exist among different age groups within the county, however, as shown in Figure 6.3. When examining the more common age groups for giving birth (15-39), younger mothers in the county are less likely to access adequate prenatal care than older mothers. Women under the age of 25 are 1.3 times as likely as those over 25 to receive inadequate or no prenatal health care.

Figure 6.3: Percent of births for which mothers accessed inadequate or no prenatal care in Linn County by age group, 2008-2015

Figure notes: Data is based on county of residence of the mother at the time of birth, not county of birth. Age groups 10 to 14 and 44 to 49 have a low number of births, so data should be interpreted with caution. Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data

There also exist disparities in prenatal care access among mothers of different race/ethnic groups in the county. Overall, mothers who identify as Black or African American and White
tend to access adequate prenatal care more frequently when compared to all other racial/ethnic groups (Figure 6.4).\textsuperscript{260}

**Figure 6.4: Percent of births for which mothers accessed inadequate or no prenatal care by race/ethnicity in Linn County, 2008-2015**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent of births</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>17.5%</td>
</tr>
<tr>
<td>Asian</td>
<td>13.3%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>5.4%</td>
</tr>
<tr>
<td>Hispanic or Latina</td>
<td>15.5%</td>
</tr>
<tr>
<td>Multiple races</td>
<td>16%</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>25%</td>
</tr>
<tr>
<td>White, not Hispanic or Latina or Latino</td>
<td>11.1%</td>
</tr>
</tbody>
</table>

Figure notes: Data is based on county of residence of the mother at the time of birth, not county of birth. Results should be interpreted with caution for the Pacific Islander group due to a low number of births.

*Source: Oregon Health Authority, Center for Health Statistics, Birth Certificate Data*

**Smoking During Pregnancy**

Smoking during pregnancy is one of the most common preventable causes of illness and death among infants. Smoking during pregnancy increases the risk of stillbirth, low birth weight, sudden infant death syndrome (SIDS), and preterm birth. It also contributes to cognitive and behavioral problems and respiratory problems in both the mother and the child.\textsuperscript{261}

Children exposed to tobacco before birth are more than twice as likely to become regular smokers themselves later in life, compared with children not exposed to tobacco in utero.\textsuperscript{262} Women who quit smoking before pregnancy or early in pregnancy also significantly reduce their risks for delays in conception (e.g. infertility) and other complications during birth.\textsuperscript{263}

On average in 2013-2015, 15 percent of mothers smoked during pregnancy in the region. This percentage is higher than both the state average of 10 percent and the Healthy People 2020 target of 1.4 percent.\textsuperscript{264} The maternal smoking rate in the region is also higher than Oregon across age groups, except for the 10 to 14 and 45 to 49 age brackets (possibly due to a very low number of births at those ages). However, there is a notable difference in smoking rates when comparing age groups in the region, in which the rate of smoking among pregnant women under the age of 25 is nearly two-and-a-half times the rate of smoking among pregnant women ages 25 and up.
The rate of smoking among pregnant women in Linn County is highest among adolescents and young adults, and consistently decreases with increasing age (Figure 6.5).

Figure 6.5: Maternal smoking rates (percentages) among pregnant women in Linn County (by age), 2008-2015

Figure notes: Data is based on county of residence of the mother at the time of birth, not county of birth. Results should be interpreted with caution for the 10-14 and 45-49 age brackets due to a low number of births.

Source: Oregon Health Authority, Center for Vital Statistics

Smoking cessation counseling and programs offered during prenatal care can provide effective assistance to encourage pregnant women to quit smoking. There currently are no established smoking cessation programs specifically for mothers in the region. The standard of care among health professionals providing prenatal care is to determine if the mother smokes and, if so, to discuss the benefits of quitting smoking and offer resources to support the mother if she decides to quit.

Alcohol Use During Pregnancy

Drinking alcohol during pregnancy can cause miscarriage, stillbirth, and a range of lifelong disorders known as fetal alcohol spectrum disorders (FASDs). Children with FASDs can have a host of problems, including poor coordination, hyperactivity behavior, difficulty paying attention, poor memory, difficulty in school, learning disabilities, speech and language delays, poor reasoning and judgment skills, vision or hearing problems, and complications with the heart, kidney, or bones. There is no known safe amount of alcohol to drink during pregnancy and no known safe time to drink alcohol during pregnancy.²⁶⁵

The Pregnancy Risk Assessment Monitoring System (PRAMS), a national surveillance system, provides information about women who have had a recent live birth. The most recent data is from 2011. Oregon state-level data indicates that 92 percent of pregnant mothers abstained from alcohol during the last 3 months of their pregnancies. Less than one percent had more
than one drink per week during the third trimester. There are no regional or county-level data available at present.

Teen Pregnancy

Teen mothers are less likely to receive early prenatal care, and are more likely to experience blood-pressure complications and premature birth. Children of teenage mothers are also more likely to become teen parents themselves, be incarcerated during adolescence, drop out of school, experience more health problems, and are two times as likely to experience abuse and neglect. Negative effects of early childbearing on teenage fathers include an increased likelihood of partaking in delinquent behaviors, such as alcohol and drug abuse or dealing, and fewer years of completed school in comparison to their childless peers. On average in the United States, 50 percent of teen mothers receive a high school diploma by age 22, compared to 90 percent of women who had not given birth as a teenager.

The most recent information available suggests that, overall, regional teen pregnancy rates (ages 15 to 19) have decreased between 2008 and 2015 (Figure 6.6). Given the small number of teen pregnancies each year, three year averages are shown. The three year average in 2008-2010 in Linn County was nearly 39 pregnancies per 1,000 women age 15-19. This number declined to about 17 pregnancies per 1,000 women age 15-19 in 2013-2015. Regional teen pregnancy rates were below state teen pregnancy rates in all years.

Figure 6.6: Pregnancy rate per 1,000 women age 15-19 years in Linn County and the LBL Region, 3 year moving average, 2008-2015

Disparities in teen pregnancy rates emerge when the overall regional figure is broken down. For example, despite the overall decline in rates, there are striking differences in teen birth rates for Hispanic and non-Hispanic populations at both the regional and state levels. Between
2011 and 2013, Hispanic teens aged 15 to 19 had a pregnancy rate in the region that was sixty-six percent higher than that of non-Hispanic teens (Figure 6.6). The regional disparity was much less than the state disparity; state-wide the pregnancy rate of Hispanic teens was 86 percent greater than that of non-Hispanic teens. Notwithstanding the greater Hispanic teen pregnancy rates, both regionally and statewide, the pregnancy rate among Hispanic teens is declining faster than the pregnancy rate among non-Hispanic teens.

**Infant Mortality**

The annual infant mortality* occurrence in the county has been just under 6 fatalities per 1,000 births from 2013 to 2015. Infant mortality rates are lower in the region (about 5 per 1,000 births), although this an increase from 2011 to 2013 (about 4 per 1,000).\(^{270}\) The region has surpassed the Healthy People target of 6.0 per 1,000 births.\(^{271}\) Principal causes of infant mortality over the 10 years between 2004 and 2013 included include congenital malformations, low birthweight and/or premature birth, sudden infant death syndrome, accidents, and complications from birth.\(^{272}\)

**Premature Birth and Low Birth Weight**

Premature birth and low birth weight among infants are commonly used measures of maternal and infant health. Infants that are born too early and/or with a low birth weight are at higher risk of dying in the first year of life and of having developmental problems and worse health outcomes throughout life.\(^{273,274}\) Both conditions are preventable to varying degrees and have been found to be influenced by a variety of factors.

**Premature Birth**

Premature birth (also known as preterm birth) is a measure of births that occur before the projected full term of the pregnancy. Infants are considered premature when they are born before completing 37 weeks (about 8.5 months) of pregnancy.\(^{275}\)

Many maternal factors can influence premature birth. Established preventable risk factors for premature birth include:

- Chronic health conditions in the mother, such as high blood pressure, and diabetes;
- Certain infections during pregnancy; and
- Cigarette smoking, alcohol use, or illicit drug use during pregnancy.\(^{276}\)

The percent of preterm births in Linn County (8.1 percent) from 2008 to 2015 is generally below the Healthy People 2020 target of 11.4 percent.\(^{277}\) However, disparities exist among women when stratified by race/ethnicity, as shown below in Figure 6.7.

---

* Infant mortality is defined as the death of a live-born infant before the age of 1.
Figure 6.7: Percent of births that are premature in Linn County by race/ethnicity, 2008-2015

Low Birth Weight

Low birth weight results when an infant fails to grow sufficiently during pregnancy, and can both signal and cause health problems with the infant. Infants are considered to have low birth weight if they weigh less than 2,500 grams (about 5.5 pounds at birth).

Established risk factors for low birth weight include:

- Premature birth;
- limited weight gain of the mother during pregnancy;
- the mother being younger than 15 years or older than 35 years;
- exposure to air pollution or drinking water contaminated with lead;
- cigarette smoking, alcohol use, or illicit drug use during pregnancy; and
- socioeconomic factors, such as having a low income, low educational level, or a high level of stress.278

From 2013 to 2015, approximately 6.2 percent of all infants born in Linn County had a low birth weight, which exceeds the Healthy People 2020 target of 7.8 percent.279 While Linn County and Oregon meet the Healthy People 2020 objective for low birth weight infants, differences exist among racial/ethnic groups within the county. Figure 6.8 illustrate the variation across different racial/ethnic groups within the county.
Breastfeeding

Breastfeeding is associated with numerous health benefits for infants, such as boosting immune system response, reducing the risk of Type 2 diabetes, and preventing obesity. Breastfeeding also promotes parent-child bonding. Children can be raised happy and healthy even when breastfeeding is not an option, but the American Academy of Pediatrics recommends exclusively breastfeeding for the first six months after birth and further recommends continued breastfeeding for a year or more after birth.\textsuperscript{280}

Barriers to Breastfeeding

Breastfeeding may not always come easily to new parents, and other barriers to initiation of breastfeeding and continuation of breastfeeding might include:

- lack of support from the child’s other parent,
- lack of support from family and friends,
- hospital practices that interfere with breastfeeding,
- misperceptions about milk supply,
- no timely follow-up to questions or problems that arise after hospital discharge,
- lack of workplace support for breastfeeding,
- lack of acceptance by the community and society in general,
- widespread advertising and promotion of infant formula, and
- the common portrayal of bottle-feeding in the mass media.\textsuperscript{281}
Breastfeeding in the Region

Data on breastfeeding are limited at both the state and county level. However, state programs, such as the Nutrition and Health Screening Program for Women, Infants, and Children (WIC), give some insight into the percentage of participating women who breastfeed. Table 6.1 displays the available county data on mothers who participate in the WIC program and the rate of breastfeeding. 282

Table 6.1: Breastfeeding rates among WIC mothers in Linn, Benton, and Lincoln counties, 2016

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>Benton County</th>
<th>Lincoln County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of pregnant</td>
<td>43 %</td>
<td>32 %</td>
<td>49 %</td>
</tr>
<tr>
<td>women served by WIC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of WIC mothers who started out breastfeeding</td>
<td>92 %</td>
<td>94 %</td>
<td>94 %</td>
</tr>
<tr>
<td>Percent of WIC mothers who breastfed exclusively for 6 months</td>
<td>34 %</td>
<td>45 %</td>
<td>36 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, 2016 WIC Facts

In addition to WIC, most health care providers encourage women to breastfeed their children, and there are many breastfeeding classes and support groups available in the region.

Immunizations

Immunization against communicable disease is one of the greatest advancements in public health.283 The major causes of premature death and disability before the development of vaccines and antibiotics were communicable disease such as measles, diphtheria, and polio. The current CDC recommendations are for children to be fully vaccinated by age two against:

- Diphtheria, Tetanus, Pertussis;
- Polio;
- Measles, Mumps, Rubella;
- Hib (a bacterial infection that can cause meningitis);
- Hepatitis B; and
- Varicella (Chickenpox).

This is known as the 4:3:1:3:3:1 schedule. In Linn County, 67 percent of two-year-olds have met the 4:3:1:3:3:1 schedule in 2015, compared to 75 percent of children statewide. Linn County WIC children also have an immunization rate of 66 percent.

The Oregon Health Authority tracks immunization rates among adolescents as well. The following table displays immunization rates among Linn County youth age 13 to 17 and compares them to immunization rates in the LBL Region and in Oregon.

99
Table 6.2: Immunization rates among youth age 13-17 in Linn County, the LBL Region, and Oregon, 2017

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tdap</td>
<td>94 %</td>
<td>93 %</td>
<td>93 %</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>63 %</td>
<td>65 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Seasonal influenza</td>
<td>23 %</td>
<td>24 %</td>
<td>25 %</td>
</tr>
<tr>
<td>HPV up to date</td>
<td>30 %</td>
<td>37 %</td>
<td>44 %</td>
</tr>
<tr>
<td>MMR (2+ doses)</td>
<td>87 %</td>
<td>87 %</td>
<td>97 %</td>
</tr>
</tbody>
</table>

Table notes: Tdap is the tetanus, diphtheria, and pertussis vaccine; HPV is the human papilloma virus vaccine; MMR is the measles, mumps, and rubella vaccine.

Source: Oregon Health Authority, Adolescent Immunization Rates by County

Immunizations are also an important component of preventive medicine among adults and seniors, especially for seasonal influenza. While data for all Linn County adults is not available, influenza vaccination rates tend to be higher among older adults. Research indicates that vaccination rates of 80 percent in healthy persons and 90 percent in high-risk persons are necessary to provide herd immunity from influenza.284

Oregon Health Plan Immunizations

Two-year-olds on the Oregon Health Plan in the LBL Region have a similar immunization rate, 65 percent, as in the rest of Linn County, compared to 68 percent of OHP two-year-olds statewide. There is no directly comparable data for adolescent immunization rates among OHP adolescents, but the Oregon Health Plan does track the percent of adolescents who received meningococcal and Tdap vaccines before their 13th birthday. In the LBL Region, 58 percent of OHP adolescents received these vaccines, compared to 68 percent statewide.285

Physical Activity

Regular physical activity helps improve overall health and wellness, reduces risk for obesity, and lessens the likelihood of developing many chronic diseases including diabetes, cancer, and heart disease. National physical activity guidelines recommend that children engage in at least 60 minutes of physical activity each day, including aerobic, muscle strengthening, and bone strengthening activity.

The Healthy People 2020 objective for physical activity aims to increase the proportion of adolescents who meet current national physical activity guidelines to 32 percent.286 As shown in Figure 6.9, 8th graders in Linn County exceeded the Healthy People 2020 objective while 11th graders did not. Overall, a larger percentage of youth in Linn County self-report exercising for the recommended amount of time compared to Oregon youth overall.287
Reducing the amount of time youth spend in front of a screen, such as viewing television, videos, or playing video games is a key strategy to promote physical activity. In 2011, the Academy of Pediatrics recommended limiting television and video time to a maximum of two hours per day for children over the age of two and no exposure to television and or videos (i.e., zero hours) for children younger than two years of age.  

Healthy People 2020 supports increasing the proportion of children and adolescents aged two years through 12th grade who view television, videos, or play video games for no more than two hours a day to the following percentages:

- 83.2 percent of children aged two to five years,
- 78.9 percent of children and adolescents aged 6 to 14 years, and
- 73.9 percent of adolescents in 9th through 12th grade.

Although data are unavailable for the aforementioned age groups at the county and regional level, the data shown in the following table (Table 6.3) may serve as an indicator of screen time (television and computers) among the child and adolescent population of Linn County. Table 6.3 shows that the majority of youth in 8th and 11th grade in the region do not spend more than two hours per school day watching television. Among 8th and 11th graders, Linn County youth surpass the state average and Healthy People 2020 target. Table 6.3 also shows that more than half of 8th and 11th graders in Linn County spend less than two hours per day on the computer or on their phone. These rates are comparable to the state average, but fall well short of the Healthy People 2020 target of 82.6 percent.
Table 6.3: Percent of youth who view television or other screens for no more than two hours per school day in Linn County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Limited television exposure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>75 %</td>
<td>77 %</td>
<td>76 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>77 %</td>
<td>79 %</td>
<td>80 %</td>
</tr>
<tr>
<td><strong>Limited screen exposure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>54 %</td>
<td>56 %</td>
<td>54 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>56 %</td>
<td>58 %</td>
<td>58 %</td>
</tr>
</tbody>
</table>

Table notes: Limited television exposure is defined as no more than 2 hours per school day. Limited screen exposure is defined as no more than two hours per day of video/computer games, computer use, social networks, or smartphone use, excepting school work.

Source: Oregon Healthy Teens Survey

Adult Physical Activity

Physical activity is important for maintaining health as a person ages. Recommendations for adults include at least an hour and fifteen minutes of vigorous-intensity activity or two-and-a-half hours of moderate-intensity activity every week, in addition to muscle-strengthening activities on two or more days a week.292

Overall, 22 percent of adults in Linn County met the CDC guidelines for physical activity* from 2010-2013, compared to 25 percent of adults in Oregon (Table 6.4).293 There is still a significant amount of room for improvement for the county and for the state, as neither geographical region meets the Healthy People 2020 objective of having 48 percent of the population meeting the CDC guidelines for physical activity.294

Table 6.4: Age-adjusted percent of adults who meet CDC recommendations for physical activity and who get any physical activity outside of work in Linn County and Oregon, 2010-2013

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting CDC recommendations for physical activity</td>
<td>22 %</td>
<td>25 %</td>
</tr>
<tr>
<td>Any physical activity outside of work</td>
<td>78 %</td>
<td>82 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Health risk and protective factors among Oregon adults, by county

At the state level, participation in physical activity varies by race/ethnicity, household income, and by level of education. Adults with less than a high school education, those earning less than $24,999, and Latinos are less likely to meet CDC physical activity recommendations than their peers.295 As with children and youth, county-level data that describe physical activity levels among adults by race/ethnicity or level of household income are not available.

* The CDC recommends 30 minutes of moderate physical activity on five or more days per week.
Recent data are not available at the county level for physical activity among older adults. The CDC recommends that adults 65 years of age or older get two hours and 30 minutes of moderate-intensity exercise (e.g. brisk walking) each week and engage in muscle-strengthening activities at least two days a week.\textsuperscript{296} Statewide, older adults have only a small decrease in physical activity compared to younger adults, and there are minor differences between men and women. Table 6.5 below displays physical activity at the state level among older adults.

Table 6.5: Physical activity among older adults in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended physical activity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>60 %</td>
<td>67 %</td>
<td>64 %</td>
</tr>
<tr>
<td>Men</td>
<td>64 %</td>
<td>64 %</td>
<td>61 %</td>
</tr>
<tr>
<td><strong>Any physical activity outside of work</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>80 %</td>
<td>81 %</td>
<td>76 %</td>
</tr>
<tr>
<td>Men</td>
<td>79 %</td>
<td>79 %</td>
<td>75 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon BRFSS

**Nutrition**

There is a well-established link between eating a healthy and balanced diet, and an increasing number of health benefits. A healthy and balanced diet involves eating a variety of foods which provide essential nutrients (like dietary fiber and potassium), in the right amount – with negative health consequences from consuming too little or too much food.\textsuperscript{297} In addition to promoting health and supporting a healthy weight, mounting evidence links a healthy diet to lowered risks of chronic disease, including several types of cancer, osteoporosis, and cardiovascular disease.\textsuperscript{298}

The 2015-2020 recommendations released by the U.S. Department of Health & Human Services and the U.S. Department of Agriculture highlights three major guidelines for Americans:

- follow a healthy eating pattern (all food and beverage choices matter);
- focus on variety, nutrient density, and amount;
- limit calories from added sugars and saturated fats and reduce sodium intake;
- shift to healthier food and beverage choices; and
- support healthier eating patterns for all (work, school, etc.).\textsuperscript{299}

While research continues to show that healthy eating is a key ingredient to good health, the food environment has been changing in dramatic ways, parallel to increases in obesity rates. Portions, prices, and media messaging encourage consumption of foods high in calories, sugars, and fat. These unhealthy foods are all readily available at fast food restaurants, vending machines, and convenience stores. Meanwhile, work, school, and leisure environments are allowing fewer opportunities to burn the extra calories consumed. These changes include cut-backs in physical education classes, office jobs which include hours of sitting, and television and computers representing a large portion of leisure activity.\textsuperscript{300} With so many aspects of daily life...
supporting improper nutrition, it becomes essential to look at both healthy behaviors and environmental factors to improve the nutrition and health of the entire community.

Proper nutrition among children and adolescents is essential in supporting healthy growth and development, academic performance, and well-being, while also preventing obesity and a number of chronic diseases. \(^{301}\) Including education about the importance of nutrition early in life helps children and adolescents to develop healthy habits that often continue into adulthood.

As shown in the table below (Table 6.6), adolescents in Linn County self-report consuming at least five servings of fruits and vegetables per day at about the same rate as the state. \(^{302}\)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8(^{th}) grade</td>
<td>24 %</td>
<td>26 %</td>
<td>23 %</td>
</tr>
<tr>
<td>11(^{th}) grade</td>
<td>19 %</td>
<td>22 %</td>
<td>20 %</td>
</tr>
</tbody>
</table>

Table 6.6: Percent of youth consuming at least 5 servings of fruits and vegetables per day and consuming no sugar sweetened sodas in the past 7 days, Linn County, the LBL Region, and Oregon, 2015

Source: Oregon Healthy Teens Survey

Nutrition and eating habits are frequently set early in life. Good nutrition can delay the physical signs of aging and prevent or slow the development of many chronic diseases, including diabetes and cancer. Approximately one in five adults in the county and in Oregon consumes at least five servings of fruits and vegetables per day (Table 6.7). \(^{303}\) This is similar to the percentage of children in the region. Additional assessments of fruit and vegetable intake by race/ethnicity, age group, and income levels are needed for future planning and outreach among adults in the region.

Adults are also at risk of metabolic disease from excessive consumption of sugar, from sugar-sweetened beverages and other sources. There is no data on abstinence from sugar-sweetened beverages, but Table 6.7 below does report the percent of Linn County and Oregon residents who drink 7 or more sodas per week.

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 servings of fruits and vegetables</td>
<td>19 %</td>
<td>22 %</td>
</tr>
<tr>
<td>7 or more sodas per week</td>
<td>16 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Table 6.7: Percent of adults who consumed at least 5 servings of fruits and vegetables per day and who drank 7 or more sodas per week in Linn County and Oregon, 2010-2013.

Source: Oregon Health Authority, Health risk and protective factors among Oregon adults, by county
Nutrition among older adults plays an important role in immune function, as well as cognitive changes that take place as part of the aging process. Older adults can also be at increased risk for poor nutrition and dehydration, as taste sensitivity and thirst mechanisms often decline with age. Good nutrition has been shown to decrease inflammatory responses and improve immune function, as well as slow some types of cognitive (brain function) decline associated with aging. Data at the county level are not available for older adults on consumption of fruits and vegetables and is a possible area for future surveillance, but statewide data is shown in Table 6.8.

### Table 6.8 Nutrition among older adults in Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 servings of fruits and vegetables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>19 %</td>
<td>24 %</td>
<td>21 %</td>
</tr>
<tr>
<td>Men</td>
<td>12 %</td>
<td>19 %</td>
<td>15 %</td>
</tr>
</tbody>
</table>

*Source: Oregon Health Authority, Oregon BRFSS*

### Obesity

Being obese or overweight is a complicated health condition. The risk of unhealthy weight is influenced by diet, exercise, and other behaviors, but it also depends strongly on genetic and environmental factors. Obesity is also correlated with socio-economic status and other social determinants of health. Obesity and overweight status can increase the risk of many diseases, including diabetes, heart disease, and many types of cancers. Obesity also has social and emotional consequences; discrimination, lower wages, and increased vulnerability to depression are just a few examples.

The Oregon Healthy Teens Survey found that 27 percent of all eighth graders in Linn County are overweight or obese (Table 6.9). Rates are higher for 11th graders in the county, with 32 percent identifying as overweight or obese.

### Table 6.9: Overweight and obesity prevalence in Linn County, the LBL region, and Oregon, 2015

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overweight</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>15 %</td>
<td>16 %</td>
<td>15 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>15 %</td>
<td>14 %</td>
<td>15 %</td>
</tr>
<tr>
<td><strong>Obese</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>12 %</td>
<td>11 %</td>
<td>11 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>17 %</td>
<td>12 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

*Table notes: For children and teens, the CDC defines obesity as belonging to the 95th percentile (or higher) compared to others of similar age and sex, while overweight is defined as belonging between the 85th and 95th percentile.

*Source: Oregon Healthy Teens Survey*

* For adults aged 20 and older, the CDC defines obesity as having a body mass index (BMI) of 30 or more and overweight as having a BMI of between 25 and 30. For children and teens, specific BMI values are not used to define overweight and obesity. Obesity is instead defined as belonging to the 95th percentile (or higher) compared to others of similar age and sex, while overweight is defined as belonging between the 85th and 95th percentile.

† The Oregon Healthy Teens Survey distributes a questionnaire to 8th and 11th graders; therefore, adolescent data is richest for these age groups.
Nearly 30 percent of adolescents in Linn County are overweight or obese, but the prevalence among adults more than doubles. An estimated 33 percent of adults in Linn County are obese; an additional 35 percent are overweight (Table 6.10). Therefore, about 68 percent of Linn County adults are either overweight or obese. Since 1990, Oregon’s adult obesity rate has increased 121 percent. Obesity contributes to the death of about 1,400 Oregonians each year, making it second only to tobacco as a preventable cause of death.

Table 6.10: Prevalence of overweight and obesity among adults in the region and Oregon, 2014-2015

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight</td>
<td>35 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Obese</td>
<td>33 %</td>
<td>27 %</td>
</tr>
</tbody>
</table>

Table notes: For adults aged 20 and older, the CDC defines obesity as having a body mass index (BMI) of 30 or more and overweight as having a BMI of between 25 and 30.

Source: Oregon Behavioral Risk Factors Surveillance System, Small Area Estimates

Statewide obesity and overweight rates are similar among the elderly population and among adults between 45 and 64 years of age (approximately 63 percent). Specific data is not available at the county level.

Oregon Health Plan Obesity

Among IHN-CCO members, the prevalence of obesity is 39 percent, slightly higher than the prevalence of obesity among all Oregon Medicaid members at 36 percent. Obesity is least prevalent among Asian Medicaid members and most prevalent among Pacific Islander Medicaid members.

Oral Health

Good oral health is essential to overall physical and mental health and encompasses more than just dental check-ups. Oral disease can lead to cavities and gum ailments, which can in turn contribute to other diseases or conditions. Conversely, certain chronic mental and physical health conditions can also contribute to declines in oral health. Gum disease is associated with endocarditis (an infection of the inner lining of the heart), cardiovascular disease, premature birth, and low birth weight. Osteoporosis can lead to tooth loss, and individuals with diabetes and immune system disorders are more susceptible to gum and bone infections. Poor oral health can also affect self-esteem, reduce employment opportunities, and increase absenteeism.

Among children in the U.S., dental cavities are the most common childhood disease. Cavities are almost completely preventable through optimal water fluoridation, application of dental sealants to children’s teeth, effective oral hygiene (brushing teeth and flossing), and regular
preventive visits to the dentist. Across the county, the proportion of 8th grade and 11th grade youth who have ever had a cavity is much higher than the Healthy People 2020 target of no more than 48.3 percent (Table 6.11). The proportions do not change much in the three years between 8th grade and 11th grade – this indicates that most tooth decay occurs in children before the 8th grade.

Table 6.11: Percent of youth who have ever had a cavity in Linn County, the region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>73 %</td>
<td>71 %</td>
<td>69 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>73 %</td>
<td>73 %</td>
<td>75 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Achieving and maintaining good oral health is a significant challenge for many people in the region, particularly those with lower incomes. This challenge may be exacerbated by the fact that not all cities, districts, or water supplies in the region are fluoridated (see Chapter 3 Environment).

One of the objectives of Healthy People 2020 is to increase the proportion of U.S. communities with fluoridated water to 75 percent. Linn County surpasses this percentage (at 82 percent). In contrast, approximately 27 percent of Oregon residents have access to fluoridation through community water systems, the second lowest percentage in the country.

Infectious Diseases

Prevention and control of infectious illnesses rank among the greatest health advances of the 20th century. The World Health Organization defines infectious diseases as those that are caused by bacteria, viruses, parasites, or fungi; and can be passed from person to person. Some are transmitted via ingesting contaminated food or water, many are spread by microorganisms in coughs or sneezes, and others result from exposures in the environment or insect bites. Diseases that spread from animals are called zoonotic infections.

All physicians, health care providers, and laboratories in Oregon are required by law to actively report confirmed or suspected diagnoses of over 50 infectious diseases and conditions to their local health departments. These reports are directed through county health departments to the Oregon Public Health Division which collects and distributes data to inform health departments, physicians and the public. Reporting enables appropriate public health follow-up for patients, helps identify outbreaks, and provides a better understanding of disease transmission patterns. Some diseases are subject to restrictions on school attendance, day care attendance, patient care, and food handling. There were 912 cases of reportable communicable diseases during 2016, a rate of 17.5 per week.
Respiratory Illnesses

Respiratory illnesses such as the influenza virus, commonly referred to as the flu, spread from person to person when droplets from a cough or sneeze of an infected person move through the air and enter the mouth or nose of people nearby. Some of the microorganisms in these droplets can also live on surfaces for hours, such as desks or doorknobs, and can spread when people touch these surfaces and then touch their eyes, mouth, and nose.

The common cold* and influenza are the most common respiratory illnesses. However, local, state, and national statistics for these diseases are difficult to ascertain because doctors and laboratories are not required to report them to public health authorities. This is because most people experience only mild, short-term illness, and do not seek medical attention. The illnesses are difficult to differentiate, and most are treated symptomatically rather than curatively. The Oregon Health Authority reports influenza and pneumonia mortality jointly; Linn County rates have been generally declining despite a spike in 2012 (Figure 6.10).

Figure 6.10: Age-adjusted influenza and pneumonia mortality rates in Linn County and the LBL Region, 2008-2015

![Figure 6.10](image)

Source: Oregon Public Health Assessment Tool

Less common, but more serious respiratory illnesses include pneumonia, pertussis (whooping cough), and tuberculosis. In general, infectious tuberculosis is extremely rare in Linn County. There have been 4 cases since 2008, and none since 2013.\(^{323}\) Tuberculosis cases are actively managed and curative therapy is overseen by public health nurses.

Pertussis is a very contagious bacterial infection that causes a coughing illness which may last six to ten weeks or longer. It is an endemic disease with epidemic peaks occurring every two

* More than 200 viruses cause what is typically considered the common cold, including rhinovirus, coronavirus, respiratory syncytial virus, and the parainfluenza virus.
to seven years and has proven persistence despite widespread childhood immunization. There was a sharp rise of pertussis in the United States during 2012. Washington State was particularly impacted and declared a pertussis epidemic in April 2012, reporting almost 10 times more cases of pertussis than in 2011. Oregon reported more than twice as many pertussis cases in 2012 as in 2011. The number of cases of pertussis in the region fluctuates annually; an outbreak in 2012 pushed the incidence above the historical average of approximately 14 diagnoses per 100,000 people per year, and it continues to rise. In Linn County in particular, the number of reported cases spiked again in 2015 (Figure 6.11).

**Figure 6.11: Age-adjusted rate of pertussis infections per 100,000 persons in the Linn County and the LBL Region, 2007-2016**

![Graph showing the age-adjusted rate of pertussis infections per 100,000 persons in the Linn County and the LBL Region, 2007-2016.]

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System

### Foodborne Illnesses

The Centers for Disease Control and Prevention (CDC) estimate that each year, one in six Americans (48 million people) get sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases. The leading causes of foodborne illness in the United States are due to exposure to norovirus, Salmonella, Campylobacter, and *Clostridium perfringens*. Norovirus, Salmonella, and Campylobacter are also among the leading causes of death due to foodborne illness. Figure 6.12 below shows that the incidence of campylobacter in the region has historically ranged between 17 and 31 cases per 100,000 people each year. In contrast, the incidence in Oregon has stayed below 25 cases per 100,000 people between 2011 and 2015.
Escherichia coli infections, most commonly 0157:H7 (a specific strain of E. coli), is another significant causative organism. Around 5 to 10 percent of those who are diagnosed with the infection develop potentially life-threatening complications. Linn County’s rate of E. coli per 100,000 persons has remained fairly close to the tri-county average except for a spike in cases in 2010 (Figure 6.13).
Sexually Transmitted Infections (STIs)

Sexually transmitted infections (STIs, also sometimes called sexually transmitted diseases, STDs) are infections that can be passed from one person to another through sexual contact. Untreated STIs can have consequences for individuals’ health such as infertility and even death. Testing for STIs is a very effective mechanism for preventing the spread of STIs. Even incurable STIs, like HIV, are much less likely to spread if those affected by the infection receive proper treatment. However, untested individuals are unable to receive the treatment they need and are also much more likely to pass on the infection to others.

Chlamydia and gonorrhea are the most common STIs in the region. Approximately 80 to 90 percent of chlamydia infections and about 50 percent of gonorrhea infections are asymptomatic in women and may go undiagnosed. If left untreated, these infections may lead to pelvic inflammatory disease, which can cause tubal infertility, ectopic pregnancy and chronic pelvic pain.

Chlamydia

Chlamydia is the most common reportable illness in Oregon, with infection rates steadily increasing over the past decade. In both Oregon and the region, reported rates of chlamydia are more than twice as high in women as in men; for every 10 men diagnosed with chlamydia, 25 women are diagnosed. Current guidelines recommend chlamydia screening in women who are not symptomatic, but do not recommend the same screening for men without symptoms. This likely causes the higher rate of reported chlamydia cases among women, rather than a difference in infection rates by gender. Overall, Linn County has recently had a lower rate of chlamydia than the region, although rates are increasing at both geographic levels (Figure 6.14).

Figure 6.14: Age-adjusted rate of chlamydia infection per 100,000 persons in Linn County and the LBL Region, 2007-2016

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System
Oregon Health Plan Chlamydia Screening

Oregon must track and report the percentage of sexually active young women (ages 16-24) on the Oregon Health Plan. Statewide, 47.5 percent of young women on OHP underwent screening in 2016, about a half-percent increase from 2015. African American women on OHP are screened at a rate of 56 percent, while Asian American women are screened at a rate of 36.8 percent. Young women on OHP in the IHN-CCO region are screened at a rate of 44.6 percent.

Gonorrhea

Another reportable sexually transmitted infection that is present in the region is gonorrhea. In general, women are more likely than men to become infected with gonorrhea after exposure. However, as with chlamydia, women are less likely than men to develop symptoms following infection. Gonorrhea infection rates in the region have consistently stayed below the state rate, but rates have recently spiked. Figure 6.15 shows the variation in gonorrhea incidence rates in the region and Linn County for the past ten years.

Figure 6.15: Age-adjusted rate of gonorrhea infection per 100,000 persons in Linn County and the LBL Region, 2007-2016

The key risk factor for chlamydia infections is age. Regional residents between 15 and 24 years of age contract chlamydia at a rate 4.3 times higher than the infection rate among all ages. This trend holds for state infection rates as well. Gonorrhea infection rates are somewhat less influenced by age; 15-24 year olds in the region have infection rates 2.7 times as high as the infection rate among all ages (Table 6.12).
Table 6.12: Age-specific incidence rates of chlamydia and gonorrhea, diagnoses per 100,000 persons in Linn County and Oregon, 2015

<table>
<thead>
<tr>
<th>Age</th>
<th>Chlamydia</th>
<th>Gonorrhea</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Linn County</td>
<td>Oregon</td>
</tr>
<tr>
<td>15-24</td>
<td>1,774</td>
<td>1,698</td>
</tr>
<tr>
<td>25-44</td>
<td>418</td>
<td>454</td>
</tr>
<tr>
<td>45-64</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>65 and older</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Syphilis

Syphilis is a rare but potentially fatal sexually transmitted infection. The number of cases of syphilis grew very quickly between 2011 and 2015, from about one case per year to 16 cases in 2015. It is unclear if the spike in 2015 is transient or if the incidence rate will remain above the historical average. Figure 6.16 shows the increase in syphilis incidence in Linn County and the LBL region over the past 10 years.

Figure 6.16: Rate of syphilis infection per 100,000 persons in Linn County and the LBL Region, 2007-2016

![Figure 6.16](image)

Figure notes: Case numbers may be updated as reports are confirmed.
Source: Oregon Health Authority, Oregon Public Health Epidemiologists’ User System

HIV/AIDS

HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome) remains an important public health problem in Oregon. From 1981 through 2010, 8,753 Oreganians were diagnosed with HIV infection. Of those, 40 percent (3,540) died. Fortunately, death rates have decreased dramatically since the development of effective antiretroviral therapies. HIV/AIDS is now managed as a serious but chronic disease. As a result, the number of
Oregonians living with HIV infections has increased from 2,720 to 5,213 from 1997 to 2010. New HIV diagnoses in Oregon are most common among 35–39 year old males. Between 2007 and 2015 the incidence of HIV in Linn County was 3.2 cases per 100,000 persons per year, about half of the state’s incidence (6.5 cases per 100,000 persons per year) during that time period.  

**HIV Testing among Oregon Health Plan Members**

Just under half (49 percent) of OHP members state-wide have ever been tested for HIV as of 2014. There is a wide range in the testing rates among differing races and ethnicities. Asian OHP members were screened the least of all races and ethnicities with a testing rate of 25.3 percent, while African Americans and American Indians/Alaska Natives were tested at the highest rate (near 58 percent). In the IHN-CCO service area, only 45.5 percent of Medicaid adults have been tested for HIV. Only three regions in the state reported lower testing rates.

**Viral Hepatitis**

Although there is a very low incidence rate, viral Hepatitis, especially Hepatitis A, B, and C, are other infectious diseases affecting residents of the region. Transmission of Hepatitis A can occur person-to-person through an oral-fecal route; through exposure to contaminated water, ice, or shellfish harvested from sewage-contaminated water; or from fruits, vegetables, or other foods that are eaten uncooked and that were contaminated during harvesting or subsequent handling. Hepatitis B and C infection are transmitted by activities that involve contact with blood, blood products, and other bodily fluids, such as unprotected sexual contact, injection drug use, and transfusions with blood that has not been screened for viral hepatitis.

<table>
<thead>
<tr>
<th></th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis A</td>
<td>**</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Hepatitis B (acute)</td>
<td>1.9</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Hepatitis B (chronic)</td>
<td>4.5</td>
<td>6.7</td>
<td>12.0</td>
</tr>
<tr>
<td>Hepatitis C (acute)</td>
<td>**</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Hepatitis C (chronic)</td>
<td>151</td>
<td>128</td>
<td>130</td>
</tr>
</tbody>
</table>

Table notes: ** indicates a rate based on fewer than 5 reported infections. Infection rates are based on 9 years of data, from 2007 to 2010 but represent infections per 100,000 people per year.

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Linn County recorded less than 10 Hepatitis A cases from 2007 to 2015. During the same years, there were 20 new recorded cases of acute Hepatitis B and less than 10 recorded cases of acute Hepatitis C (past or present case, unspecified). Current estimates suggest that 65 percent of people infected with Hepatitis B and 75 percent of people infected with Hepatitis C...
are unaware of their infections. Overall, males experience higher rates of Hepatitis B and C infection than females.

Zoonotic Illnesses

Zoonotic illnesses are infectious diseases that can be spread from animals to humans. There are many zoonotic diseases, and their threat to human health is growing. This is partly due to increasing global movement of people and animals, and the effects of human populations expanding into previously undeveloped wildlife habitats.

Some zoonotic diseases are transmitted directly from animals to people, some result from contamination of the environment by animals, and others require a vector such as a tick or mosquito. Examples of zoonotic diseases include:

- Bacterial - *Salmonella*, *E. coli*, leptospirosis;
- Viral - Rabies, avian influenza;
- Fungal - Ringworm, sporotrichosis;
- Parasitic - Toxoplasmosis, larval migraines due to roundworms;
- Vector-borne - West Nile virus, spread by mosquitoes, and Lyme disease, spread by ticks.

Climate change may also lead to greater zoonotic disease threats as changes in temperature and precipitation create more favorable conditions for disease vectors to migrate and thrive. Zoonotic diseases can cause symptoms such as diarrhea, muscle aches, and fever. Some diseases cause only mild illness while others can be life threatening. One such disease is rabies, which is virtually always fatal if left untreated. Rabies is regularly found in the Oregon bat population.

Injury and Violence

Child Abuse

In 2016, there were a total of 869 reports of child abuse or neglect in Linn County, of which 180 (21 percent) were founded (determined to be abuse). The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94.1 percent of reports in Oregon); parents account for 77.5 percent of all perpetrators. Child abuse rates in Linn County have remained higher than Oregon but have been steadily decreasing over the years.
Figure 6.17: Founded abuse rate per 1,000 for children under 18 years of age in Linn County, the LBL Region, and Oregon, 2011-2015

Figure notes: Rates include neglect, physical abuse, and sexual abuse. 2012 data is from the Portland State University Population Research Center. Starting in 2013, the population data is one year behind the year shown and is from Puzzanchera, C., Sladky, A. and Kang, W. (2014). "Easy Access to Juvenile Populations: 1990-2013."

Not all reported cases of child abuse result in a foster care placement. Children are placed in foster care for a variety of reasons. Some are placed in foster care because their families cannot provide them with basic safety and protection, while others have had negative experiences such as parental substance abuse, sexual or physical abuse, and abandonment. In Oregon, many children are in foster care due to a history of abuse or neglect. The rates of foster care (Figure 6.18) mirror the rates of child abuse (Figure 6.17).
Family stress is a major underlying factor associated with families of abused and neglected children. Major sources of family stress often include drug and/or alcohol abuse, domestic violence, parental involvement with law enforcement agencies (LEA), and financial distress within the family. Many families also have significant child care responsibilities, and some parents may even have a history of abuse as children. Often, families experience multiple sources of stress. Nearly half of documented child abuse in Oregon is linked to parent or caregiver alcohol or drug use. Other common sources of stress are domestic violence, involvement with law enforcement, and financial distress.344

The Oregon Healthy Teens Survey asks 11th graders if they had ever been hit or hurt by an adult. Nearly one in four (24 percent) 11th graders in Linn County reported being hit or hurt by an adult, which is a similar rate for both the region and the state (Figure 6.19).
Domestic Violence

Domestic violence, which includes many forms of abuse, affects children and adults. Physical abuse, sexual abuse or assault, intimidation, verbal abuse and emotional abuse, or threats of such harm are all forms of domestic violence. Domestic violence can include abuse from a household member (including roommates or caregivers), intimate partners (including dating partners), or a family member (whether or not they live with the victim).345

The Center Against Rape and Domestic Violence (CARDV) is a non-profit organization serving Linn and Benton counties that provides supportive services to victims of domestic violence, sexual assault, and dating abuse.346 Services include crisis intervention, emergency shelter, 24-hour crisis line, safety planning, advocacy, court information and support, agency and resource referrals, education, peer counseling, and outreach activities.

In their 2016-2017 fiscal year, CARDV responded to a total 6,297 calls on its 24-hour crisis line and provided emergency shelter to 116 adults and 85 children for a total of 3,092 bed nights (83 adults, 59 children, and 1,726 bed nights for Linn County residents). CARDV also provided legal system support to 860 adults and 30 teens (599 adults and 23 teens from Linn County), and 24 hour in-person medical advocacy support to 190 adults and 25 teens (85 adults and 14 teens in Linn County).347

Domestic violence not only has an effect on the victim, but can also have an effect on children; domestic violence poses a threat to children’s emotional, psychological, and physical well-being. Children who live with domestic violence are also at an increased risk to become direct victims of child abuse.348
Abuse of Vulnerable Adults

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse, caregiver neglect, and financial exploitation. The information in this section includes adults and seniors.

In 2015, the Oregon Department of Human Services Office of Adult Abuse Prevention and Investigations received almost 43,000 reports of potential abuse. Of those:
- 4,215 Oregon seniors and adults with physical disabilities experienced abuse or self-neglect, up sharply from 2,608 in 2010,
- Physical abuse had the highest rate of substantiation (35.6 percent) from reports,
- The category of abuse with the greatest number of substantiated cases was financial exploitation (1,188 substantiations),
- 25 percent of substantiated abuse claims occurred in licensed facilities, while the other 75 percent occurred in community settings (non-licensed care settings, such as the individual’s own home).

Within Linn and Benton counties (reported together by the Department of Human Services Office of Adult Abuse Prevention and Investigations), there were 532 investigated allegations of abuse against adults with intellectual and/or developmental disabilities, of which 115 were substantiated. Of the substantiated claims in Linn and Benton counties, 21 occurred in care facilities and 94 took place in community settings.

Violent Crime

Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery, and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. Crime rates can also deter residents from pursuing healthy behaviors such as exercising outdoors. Additionally, exposure to crime and violence has been shown to increase stress, which may exacerbate hypertension and other stress-related disorders and contribute to obesity prevalence. Exposure to chronic stress also contributes to the increased prevalence of certain illnesses such as upper respiratory illness and asthma in neighborhoods with high levels of violence.

Violent crime rates varied widely between counties. Linn County had a violent crime rate of 117 crimes per 100,000 people from 2010-2012. This was well below the Oregon rate of 249 crimes per 100,000 people. In 2013, the tri-county region recorded 55 violent deaths, including suicide, homicide, and undetermined causes. This was a rate of 22 violent deaths per 100,000 residents, equal to the rate in Oregon.
Adverse Childhood Experiences and Intimate Partner Violence among Oregon Health Plan Members

There are two sets of results from the 2014 MBRFSS survey that are related to this section. First is a topic called “adverse childhood experiences” (ACES). Adult Medicaid members were asked a series of 11 questions regarding whether they or a parent/adult in the home experienced depression or mental illness, alcoholism, drug abuse, incarceration, separation or divorce, physical or verbal abuse, or sexual abuse. Any 4 or more “yes” responses would qualify the responder as having had ACES.

A little over one-third (34.7 percent) of adult Medicaid members in the state of Oregon reported ACES (compared to 22.5 percent for the general Oregon adult population). This value ranged from 7.8 percent in Asians to 50.9 percent in American Indians / Alaska Natives. Slightly higher than the state value, the local region reported 36.1 percent as having adverse childhood experiences.

The other topic is intimate partner violence. The survey measured the number of adult Medicaid members who were physically assaulted or harmed by an intimate partner in the past 12 months. Across the state, 4.5 percent of members reported being victims of this violence. Only 1.4 percent of Asians, and as much as 8.5 percent of African Americans reported being victims. The local region values were similar to that of the state, with 4.4 percent of members stating they had experienced intimate partner violence.

Occupational Safety and Health

With the large majority of the population engaged in some form of employment for some portion of their lives, the workplace represents an important opportunity to improve health. Occupational Safety and Health is concerned with all aspects of health and safety in the workplace, and focuses mostly on primary prevention of hazards. On a global scale, the World Health Organization (WHO) is currently addressing a wide scope of determinants of workers’ health, which includes risks for disease and injury, social factors, and access to health services. In the United States, one of the primary organizations leading the way towards health and safety in the workplace is the Occupational Safety and Health Administration (OSHA) through the United States Department of Labor.

Despite established legislation, like the Occupational Safety and Health Act of 1970, requiring employers to provide workplaces “free from recognized hazards that are causing or likely to cause death or serious physical harm” to their workers, the toll of workplace fatalities, injuries and illness continues to exact a large toll on society. Impacts of these injuries, both social and financial, usually fall to workers and their families, as well as taxpayer-supported programs. Examining the data around particular industries can help illustrate the various
workplaces and their relative rates of injury, illness, or fatality, ultimately painting a picture of the working conditions present in the community as a whole.

**Injuries**

County-specific data on workplace injuries are not available, but trends in state level data can be applied to major industries in the region to get a sense of the regional risk of workplace injury and illness. Statewide, the worker injury rate was approximately 41 injuries per 1,000 workers in 2013. Worker injury rates can be broken down first by industry, and then by category (a subset of industry).

The natural resources and mining industry has the highest incidence of non-fatal workplace injuries, with approximately 69 injuries per 1,000 workers in 2013. At a finer level of detail, certain specific workplace categories (not necessarily within the natural resources or mining industry) have high incidences of injury, including structural and motor vehicle manufacturing, fire protection, and wood preservation, which all had over 120 injuries per 1,000 workers. Surpassing all other workplace categories was local government nursing and residential care, with approximately 210 injuries per 1,000 workers in 2013. Industries with low workplace injury rates are concentrated in services such as educational and social services, business services, and private health care.

Linn County’s industry is concentrated in natural resources and manufacturing. As shown in Figure 6.20, natural resources and manufacturing services have relatively high workplace injury and illness rates in Oregon.

**Figure 6.20: Oregon workplace injury and illness rates by industry, 2015**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of injuries per 1,000 workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural resources and mining</td>
<td>67</td>
</tr>
<tr>
<td>Transportation and warehousing</td>
<td>63</td>
</tr>
<tr>
<td>Education and health services</td>
<td>52</td>
</tr>
<tr>
<td>Construction</td>
<td>43</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>43</td>
</tr>
<tr>
<td>Retail trade</td>
<td>39</td>
</tr>
<tr>
<td>Leisure and hospitality</td>
<td>37</td>
</tr>
<tr>
<td>Other services</td>
<td>26</td>
</tr>
<tr>
<td>Professional and business services</td>
<td>17</td>
</tr>
<tr>
<td>Information</td>
<td>10</td>
</tr>
</tbody>
</table>

*Source: Oregon Department of Consumer and Business Services*
Leading Causes of Death in the Region

In 2015, the leading causes of death (for all ages combined) in Linn County are cancer, heart disease, lung disease, stroke, and accidents. Compared with the LBL region, Linn County has more deaths per 100,000 residents for nearly every of its top ten causes of death (Figure 6.21).

Preventable risk factors such as tobacco use, diet, activity, and alcohol use contribute substantially to these deaths. For example, in 2014, it is estimated that 21 percent of deaths in Linn County were tobacco-related deaths. This is exactly the same as the 21 percent of tobacco-related deaths in Oregon during the same time period.359

Figure 6.21: Top 10 causes of death per 100,000 persons, age-adjusted, Linn County and region, 2015

Source: Oregon Health Authority, Oregon Public Health Assessment Tool

Chronic Diseases and Conditions

Chronic diseases, such as heart disease, stroke, cancer and diabetes are among the most prevalent, costly, and preventable of all health problems. Healthy lifestyles, such as avoiding tobacco, being physically active, and eating well, greatly reduce a person’s risk for developing chronic illnesses. Research shows that access to resources that support healthy lifestyles, such as nutritious food, recreational opportunities, and high quality and affordable prevention measures (including screening and appropriate follow-up) saves lives, reduces disability, and lowers medical costs.360
Cancer

Cancer is the leading cause of death in Linn County and in Oregon. Five types of cancer are discussed in this section: lung, colorectal, breast, prostate, and pancreatic. Lung cancer is the most common cause of cancer death for Oregonians, followed by colorectal cancer and pancreatic cancer. Pancreatic cancer has a very high mortality rate, in part due to the likelihood of a late diagnosis after the cancer has already progressed. Prostate cancer is a common cancer among men.

The region’s annual rate of newly diagnosed cancer cases is similar to the rate in Oregon, with the three counties ranging between 419 and 449 diagnoses per 100,000 individuals each year (Figure 6.22).

Figure 6.22: Annual age-adjusted incidence for all cancers, Linn, Benton, and Lincoln counties and Oregon, 2010-2014

However, different types of cancer impact the counties differently, and will be presented in detail. As shown in Figure 6.23, age-adjusted incidence of tobacco-related cancer in the three counties varies greatly. Linn and Lincoln counties’ incidences are higher than Oregon’s incidence, while Benton’s is significantly lower. Data for all cancer and tobacco related cancer incidence are from different years and are therefore not directly comparable.
Cancer rates also vary between different racial and ethnic groups. In Oregon, prevalence of cancer (the proportion of the population living with cancer) varies from a low of 3.6 percent among Asians and Pacific Islanders, to a high of 11.4 percent among American Indians and Alaska Natives. Figure 6.24 below displays data for cancer prevalence in Oregon by race and ethnicity.

**Figure 6.24: Prevalence of cancer in Oregon by race and ethnicity, 2010-2011**

Source: Oregon Health Authority

Figure notes: Prevalence of cancer is the percent of the population that have cancer.

Source: Oregon Health Authority
Between 2013 and 2015, the mortality rate from all cancers in Linn County was 180 deaths per 100,000 people per year. Mortality rates, while higher in Linn County, were similar between the counties and close to the state rate of 161 deaths per 100,000 people, as shown in Figure 6.25, below.

**Figure 6.25: Age-adjusted cancer deaths from all causes, Linn, Benton, and Lincoln counties and Oregon. 2013-2015**

![Bar chart showing cancer deaths per 100,000 people for Linn, Benton, Lincoln, and Oregon counties, with Linn County having 180 deaths, Benton 135, Lincoln 171, and Oregon 161.]

Source: Oregon Public Health Assessment Tool

Tobacco contributed to 31 percent of cancer deaths in Linn County between 2013 and 2015, as shown in figure 6.26, below. This percentage is higher than the state’s percentage (29 percent).

**Figure 6.26: Age adjusted tobacco related and non-tobacco related cancer mortality in Linn County, 2013-2015**

![Pie chart showing 31% tobacco related deaths and 69% non-tobacco related deaths.]

Source: Oregon Public Health Assessment Tool
Lung and Bronchial Cancer

Because lung and bronchial cancers are closely related, this section will combine them both as lung cancer. Lung cancer incidence in men is steadily declining as a result of decreasing smoking rates, but the incidence in women remains relatively flat. Lung cancer is the deadliest cancer in Oregon, accounting for 27 percent of cancer deaths in the state in 2013; a number which includes tobacco and non-tobacco caused lung cancers. The rate of lung cancer has remained fairly constant in Oregon and the United States over time, and smoking is the leading cause of lung cancers.

Even though smoking rates across the region declined from 2004 to 2011, the lung and bronchial cancer incidence rate in Linn County (68 per 100,000) is still higher than the Oregon incidence rate of 58 per 100,000. Mortality rates are also disparate across the region and compared to the state. Lincoln County has the highest mortality rate due to lung cancer at 55 per 100,000, with Linn County following at 54 per 100,000. Oregon has a mortality rate of 44 per 100,000, while Benton County has a rate of 36 per 100,000 (Figure 6.27). The Healthy People 2020 goal is 45.5 or fewer deaths per 100,000 people.

Breast Cancer

Oregon has the 11th highest incidence rate for breast cancer in the United States. Although significant improvements have occurred in early detection and treatment, breast cancer is still a leading cause of death for women in Oregon. Only a small fraction of breast cancer cases can be linked to genetics.
The 2010-2014 age-adjusted incidence of breast cancer among women in Linn County was 119 diagnoses per 100,000 women, compared to 126 diagnoses per 100,000 women in Oregon. During the same time, the female breast cancer mortality rates in all three counties were higher than the Oregon mortality rate, as shown in Figure 6.28. The Healthy People 2020 target is 20.7 deaths per 100,000 females.

Figure 6.28: Age-adjusted breast cancer incidence and mortality rates per 100,000 women in Linn, Benton, and Lincoln counties and Oregon, 2010-2014

State trends in breast cancer can be summarized as follows:

- Women are at highest risk for breast cancer.
- Women age 40 and older are at greatest risk for being diagnosed with breast cancer.
- A small percentage of women under the age of 40 develop breast cancer.
- About 85 percent of all women diagnosed with breast cancer do not have a family history of breast cancer.
- Only about 10-15 percent of breast cancers occur as a result of inherited genetic traits.
- Breast cancer in men is rare, but it does occur and should be recognized as an important area for screening and treatment.
- Race is not considered a factor for increased risk of breast cancer. However, rates of death from the disease differ among ethnic groups. In Oregon, breast cancer is the leading cause of cancer associated deaths among Latino and Asian Pacific Islander women.
- Some women may be at risk for a later stage diagnosis due to lack of access or referral to cancer screening services. Women with disabilities and African American women are more likely to be diagnosed at later stages for breast, cervical, and colorectal cancer.
Prostate Cancer

The 2010-2014 incidence of prostate cancer in Linn County was 103 per 100,000, slightly higher than that of Oregon’s incidence of 101 per 100,000 men (Figure 6.29). Linn County’s mortality rate for prostate cancer was slightly higher than that of the state, at 25 per 100,000 men compared to the state mortality rate of 21 per 100,000 men. Linn County’s rate did not meet the Healthy People 2020 objective to reduce the mortality rate due to prostate cancer to 22 deaths per 100,000 men.

Figure 6.29: Age-adjusted incidence and death rate of prostate cancer per 100,000 men in Linn, Benton, and Lincoln counties and Oregon, 2010-2014

Colorectal Cancer

The age-adjusted incidence of colorectal cancer in Linn County (33 cases per 100,000 people) is lower than the state incidence (36 cases) and other counties in the region, as Figure 6.30 demonstrates. The mortality rate of colorectal cancer in Linn County, at just over 14 deaths per 100,000, is about the same as the state. Linn County achieved the Healthy People 2020 target to reduce the mortality rate due to colorectal cancer to 14.5 deaths per 100,000 people.
Pancreatic Cancer

Pancreatic cancer is a disease in which cancer cells form in the tissue of the pancreas. Risk factors for pancreatic cancer include smoking, long-standing diabetes, chronic pancreatitis, and certain conditions such as hereditary pancreatitis.378

The age-adjusted incidence rate for pancreatic cancer in Linn County from 2010-2014 was over 13 cases per 100,000 persons, higher than the incidence rate in all of Oregon which was just over 12 cases per 100,000.379 In contrast with the other cancers discussed in this section, pancreatic cancer mortality rates are close to incidence rates, with rates of 12 per 100,000 in Linn County and just under 11 per 100,000 in Oregon. Pancreatic cancer is difficult to diagnose before it has advanced, so survival rates tend to be lower than for other common cancers.
Cancer Screening

Research shows that screening for cancer is effective in reducing serious consequences of the disease, which is generally more treatable when detected early. Breast and cervical cancer screening rates in the region are fairly consistent with state-level screening rates (Table 6.14). Additional data are needed to identify rates of screening among race/ethnic populations, age group and income level, as risk factors differ among different populations.

Table 6.14: Age-adjusted percent of cancer screening in Linn County and Oregon, 2010-2013

<table>
<thead>
<tr>
<th>Cancer screening practice</th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammogram within past 2 years (women 50-74 years old)</td>
<td>75 %</td>
<td>75 %</td>
</tr>
<tr>
<td>Pap test within past 3 years (women 21-65 years old)</td>
<td>82 %</td>
<td>82 %</td>
</tr>
<tr>
<td>Current on colorectal cancer screening (50-75 years old)</td>
<td>63 %</td>
<td>61 %</td>
</tr>
</tbody>
</table>

Table notes: Current on colorectal cancer screening includes the following: having a fecal occult blood test (FOBT) in the past year; a colonoscopy within the past 10 years; or, a sigmoidoscopy within the past 5 years as well as an FOBT within the past 3 years.

Source: Oregon Health Authority, Health screenings among Oregon adults
Cancer among Oregon Health Plan Members

When surveyed about whether they had ever been told they had cancer by a health care professional, 6 percent of Oregon Medicaid members reported they had (against 8.1 percent of the state’s general adult population). The lowest rate belonged to Pacific Islanders at 2.5 percent, with the highest rate going to American Indians / Alaska natives at 8 percent. The three counties served by IHN-CCO report a slightly higher rate than the state at 6.4 percent.380

Heart Disease and Stroke

After cancer, heart disease is the largest contributor to the mortality rate in the region and in Oregon. When combined with stroke and adjusted for age, diseases of the circulatory system are the leading causes of death in the region and Oregon.

Cardiovascular Disease and Stroke

The incidence of both heart attack and stroke are higher in Linn County than in Oregon, as demonstrated in Figure 6.32.

Figure 6.32: Age-adjusted incidence of heart attack and stroke per 100,000 persons in Linn County and Oregon, 2010-2013

Numerous health conditions and behaviors contribute to the potential for heart disease and stroke. These include:

- High blood pressure,
- High blood cholesterol,
• Diabetes,
• Obesity,
• Lack of exercise, and
• Smoking.381

Figure 6.33 Age-adjusted percent of residents with health conditions that contribute to the potential for heart disease and stroke in Linn County and Oregon, 2010-2013

Many of the effects of heart disease can be reversed with healthy eating, exercise, avoidance of tobacco, and stress reduction. In addition to high blood pressure, high cholesterol, and diabetes being critical health factors of heart disease and stroke, social and economic factors are also important. For example, in the U.S., low-income adults are 50 percent more likely to suffer heart disease than top wage earners, even when other risk factors such as cholesterol or smoking, are taken into account.382

Heart Disease Mortality

Cardiovascular disease is the second leading cause of death in Linn County.383 Across Oregon, the death rate for heart disease is higher in rural areas than urban areas.384 Mortality rates are
very different across the region (Figure 6.34), but the rate is higher in Linn County than in the region and the state.\textsuperscript{385}

**Figure 6.34: Age-adjusted heart disease mortality rate per 100,000 individuals in Linn County, the LBL Region, and Oregon, 2013-2015**

![Bar graph showing heart disease mortality rates in Linn County, the LBL Region, and Oregon, 2013-2015.](image)

*Source: Oregon Health Authority: Oregon Public Health Assessment Tool*

**Stroke Mortality**

Stroke mortality rates in the region and in Oregon have not achieved the Healthy People 2020 target of a reduction to 34.8 deaths per 100,000 persons (Figure 6.35).\textsuperscript{386} Linn County’s mortality rate is the highest in the region at nearly 46 deaths per 100,000 people, as opposed to Oregon’s rate of 37 deaths per 100,000 people, and the regional rate of 41 deaths per 100,000 people.
Heart Attack and Stroke among Oregon Health Plan Members

Adult Medicaid members in Oregon were also surveyed about whether they had ever had a heart attack. A little over 4 percent of members responded that they had (a value slightly lower than the general state adult population). The range in race and ethnicity included 2.4 percent from Hispanics to 6.2 percent to American Indians/Alaska Natives. Across the local region, the 5 percent heart attack report rate was a little higher than the state.  

Oregon Health Plan Stroke

When it comes to stroke, 3.8 percent of Oregon’s Medicaid population reported having had one. This is higher than the state’s population in general (2.9 percent). Only 1.3 percent of Hispanic OHP members reported they have had one, with just over 5 percent of American Indians / Alaska Natives reporting the same. Stroke rates for the IHN region are worse than the state at 4.5 percent.

Diabetes

Diabetes in Adults

There are two types of diabetes identified by the medical community. Type 1 diabetes is a hormonal condition in which the body does not produce enough insulin to regulate the conversion of sugar and starches into energy. Type 1 diabetes is caused by genetic and unknown factors and is usually diagnosed in children. Fewer than five percent of diabetics are diagnosed with Type 1 diabetes.

Source: Oregon Health Authority: Oregon Public Health Assessment Tool
In Type 2 diabetes, the body develops resistance to insulin, so that dietary sugar absorbed into the bloodstream is not converted into glycogen at a healthy rate. There are both genetic risk factors and behavioral risk factors for developing Type 2 diabetes. Because diabetes can cause serious health complications, it is important to prevent Type 2 diabetes through healthy life choices and also catch diabetes early through health screenings.389

Hereafter, Type 2 diabetes will be referred to as diabetes.

Risk factors for diabetes include the following:

• Being overweight or obese,
• having a parent or sibling with diabetes,
• having high blood pressure,
• having high cholesterol,
• being physically inactive,390 and
• smoking.391

Prevalence of diabetes among adults in Linn County was 9 percent from 2010-2013.392 This estimate may be conservative, however, as many people are unaware of their status. Diabetes often develops gradually as symptoms and complications can take years to manifest.

The growing burden of diabetes affects everyone in Oregon, but rates vary by age, race/ethnicity, and household income:

• Diabetes prevalence increases with age. Oregonians under 45 have the lowest rates of diabetes (2.6 percent), while 21.1 percent of adults aged 65 to 74 years of age and 18.9 percent of adults 75 years and older have been diagnosed with diabetes.
• Oregon’s Hispanic/Latino, African American, and American Indian/Alaska Native communities have significantly higher rates of diabetes than do non-Latino Whites and Asian/Pacific Islanders.
• In 2011, the prevalence of diabetes among adults with an annual household income of less than $20,000 was nearly three times that of those with an annual household income of $75,000 or more (13.8 percent versus 4.9 percent, respectively).393

Diabetes Mortality

Overall, 2013-2015 age-adjusted annual diabetes mortality rates have been consistently higher in Linn County than in the region or the state (Figure 6.36). All of these rates, however, are lower than the national diabetes mortality rate and meet the Healthy People 2020 objective of no more than 66.6 deaths per 100,000 persons.394
Early detection and prompt treatment can reduce the burden of diabetes and its complications. Table 6.15 below shows that the rates Linn County residents have had their blood sugar and cholesterol tested are similar to Oregon.

**Table 6.15: Age-adjusted percent of adults with diabetes-related health screenings in Linn County and Oregon, 2010-2013**

<table>
<thead>
<tr>
<th>Health screening practice</th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood sugar test within the past 3 years (45 years or older)</td>
<td>64 %</td>
<td>63 %</td>
</tr>
<tr>
<td>Cholesterol checked within the past 5 years</td>
<td>71 %</td>
<td>71 %</td>
</tr>
</tbody>
</table>

**Diabetes among Oregon Health Plan Members**

Medicaid members in Oregon report having diabetes at a rate of 11.6 percent, whereas the general adult population report a rate of 9.2 percent. The highest rate in the survey came from Pacific Islanders (22.1 percent), while other races and ethnicities were more closely bunched around 13 percent. Again, the three county region served by IHN had a slightly higher average than the state (12 percent).395
Arthritis

Arthritis continues to be the most common cause of disability in the United States, affecting one in five Americans. Arthritis consists of over 100 different diseases and conditions that affect the joints, surrounding tissues and other connective tissues. The two most common types are osteoarthritis (breakdown of cartilage in a joint) and rheumatoid arthritis (inflammation of possibly many joints and an autoimmune disorder).

Older adults in Oregon are disproportionately affected by arthritis. Prevalence of arthritis is expected to increase dramatically as the population ages. Women are more likely to be affected than men because they live longer than men. The growth of the aging population in the region will add to the high prevalence of arthritis in the coming decades. Other risk factors include sedentary lifestyle, obesity/overweight, joint injury, and work-related joint trauma.396

The latest 4-year average data available (2010 to 2013) shows the prevalence of arthritis in Linn County is higher than Oregon’s, even after adjusting for the county’s older population. The age-adjusted rate for the county is just under 30 percent, while the state’s is just under 25 percent.397

Oregon Health Plan Arthritis

Among adult Medicaid members across the state, 27.1 percent report being advised by a health care professional that they have arthritis. In terms of race and ethnicity, both Whites and American Indian/Alaska Native members have values above 30 percent. Across the region served by IHN, members report arthritis at a 29.1 percent rate.398

Asthma

Over the past 20 years, asthma has become one of the most common chronic diseases in the United States. Oregon has one of the highest asthma rates in the nation.399 Asthma results in direct health care costs (e.g., hospitalizations and emergency department visits) and indirect costs (e.g., missed school and work days and days of restricted activity) that affect the quality of life for people with asthma and their families.

Common asthma triggers include:

- tobacco smoke and other smoke;
- animals with fur or feathers;
- dust mites and cockroaches;
- mold or mildew;
- pollen from trees, flowers, and plants;
- being physically active;
- air pollution;
- breathing cold air;
• strong smells and sprays; and
• illnesses, such as influenza and colds.400

Prevalence of Asthma in Adults

For the past 10 years, the percent of Oregonians with a current asthma diagnosis has been rising slowly. Oregon ranked among the top six states for the highest percentage of adults with current asthma diagnoses in 2011.401

Two important behavioral risk factors contribute to the likelihood of an asthma diagnosis: tobacco use and obesity.402 Consequently, Oregon counties with asthma levels higher than the state average also tend to be counties with high smoking rates.403 Likewise, counties with high levels of obesity also tend to have increased prevalence and incidence of asthma.

Asthma rates are self-reported on the Oregon Healthy Teens survey. In 2015, 13 percent of Linn County 8th graders and 14 percent of 11th graders reported having asthma (Table 6.16).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade</td>
<td>13 %</td>
<td>12 %</td>
<td>12 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>14 %</td>
<td>14 %</td>
<td>13 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey, 2015

Just under 11 percent of Linn County adults have an asthma diagnosis. This is similar to the rate in Oregon, which is just over 10 percent.404

Detailed information on the prevalence of asthma among other sub-populations in the region is not currently available. Even so, results from statewide surveillance suggest that prevalence varies by race/ethnicity, level of education, sexual orientation, and household income (Table 6.17).

Table 6.17: Age-adjusted prevalence of asthma in at-risk groups in Oregon, 2011

<table>
<thead>
<tr>
<th>Population characteristic</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>11 %</td>
</tr>
<tr>
<td>African American</td>
<td>12 %</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>18 %</td>
</tr>
<tr>
<td>No high school diploma</td>
<td>17 %</td>
</tr>
<tr>
<td>Gay or Lesbian</td>
<td>12 %</td>
</tr>
<tr>
<td>Bisexual</td>
<td>16 %</td>
</tr>
<tr>
<td>Household income below $15,000</td>
<td>18 %</td>
</tr>
<tr>
<td>No health insurance</td>
<td>12 %</td>
</tr>
<tr>
<td>Oregon Health Plan</td>
<td>20 %</td>
</tr>
<tr>
<td>Rural</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: African American and American Indian and Alaska Native data from 2010-2011; Gay or Lesbian and Bisexual data from 2007 – 2011 combined.
Source: Oregon BRFSS 2011
**Oregon Health Plan Asthma**

As far as adult Medicaid members, 16.5 percent reported having been told they have asthma. There is a wide range among different races and ethnicities, with Asian members reporting 6.8 percent and American Indians / Alaska Natives reporting 25.1 percent. Among the local region served by IHN-CCO, OHP members report an asthma rate of 17.7 percent.

**Alzheimer’s Disease**

Alzheimer’s disease is the most common form of dementia, which is a general term for loss of memory and other intellectual abilities serious enough to interfere with daily life. Alzheimer’s accounts for 60 to 80 percent of all cases of dementia. As the 5th most common cause of death in Linn County, Alzheimer’s is also terminal. From 2013-2015, Linn County’s mortality rate for Alzheimer’s was about 36 per 100,000 (Figure 6.37). The Alzheimer’s mortality rate in Oregon was much lower than in Linn County, reflecting the county’s older population.

![Figure 6.37: Age-adjusted Alzheimer’s disease mortality rate per 100,000 individuals in Linn County, the LBL Region, and Oregon, 2013-2015](source)

It is anticipated that the number of Oregonians with Alzheimer’s disease and related dementia will increase significantly in the next two decades, mostly due to an increase in the elderly population. Currently, about 76,000 Oregonians live with Alzheimer’s disease and this number is expected to increase to 110,000 by 2025.

**Unintentional Injury Mortality**

Injuries are the number one cause of death among people under the age of 44 in Oregon and the fifth leading cause of death overall. Injury is also the number one cause of disability at all ages.
Most of the events resulting in injury, disability, or death are preventable. According to Healthy People 2020, injuries and violence have an impact on the well-being of people by contributing to premature death, disability, poor mental health, high medical costs, and high unproductivity.

Nationally, the leading causes of death from injury are a result of motor vehicle traffic accidents, unintentional poisoning, and falls. Overall, these are the same leading causes of death resulting from unintentional injury in Oregon. However, falls is the number one cause, followed by poisoning and motor vehicle accidents. Risky behaviors, such as drinking and driving and the use of a hand-held cell phone while driving can be contributing factors to motor-vehicle traffic accidents. About three percent of Oregon adults report driving after having too much to drink on at least one occasion in the past month. About 15 percent of Oregon youth rode with a parent or other adult who had been drinking on at least one occasion in the past month.

Regional injury deaths follow the same pattern as the state (see Figure 6.38 below). Falls contributed to 34 percent of accidental deaths between 2011 and 2015, followed by poisoning and motor vehicle accidents. Together, these three causes comprise 83 percent of accidental deaths in the region.

**Figure 6.38: Causes of unintentional injury deaths in Linn County, 2011-2015**

![Figure 6.38](image)

Figure notes: These data represent 314 deaths among all Linn County residents between 2011 and 2015, a rate of 52.8 deaths per 100,000 people per year.
Source: Oregon Public Health Assessment Tool

Injury mortality is higher among males than females in all age groups in Oregon. Injury mortality rates increase with age for both sexes, starting at age five. The risks of different major types of injury fluctuate through a person’s life. These include, among other types, falls, unintentional poisonings, motor vehicle accidents, and self-harm.
Linn County residents experienced 314 total deaths by unintentional injury between 2011 and 2015, a rate of 52.8 deaths per 100,000 people per year. The Healthy People 2020 target for unintentional injury deaths is 36 per 100,000 persons.\textsuperscript{411}

**Preventing Falls**

Falls are a major cause of injury and hospitalization, and the 10\textsuperscript{th} leading cause of death among older Oregonians.\textsuperscript{412} Nearly one in three older adults experiences a fall each year, and 20-30 percent of those who fall suffer injuries. As commonly as they occur, injuries and deaths due to falls are not an inevitable consequence of aging; they can be prevented. Muscle weakness is a significant contributing factor in falls, so physical activity is widely viewed as among the most important interventions for preventing injuries related to falls among older adults.

Hospitalization rates for falls increase drastically as adults age; the rate of hospitalizations due to a fall for adults 75 years and older is more than six times the rate for adults 60-74 years. Older adults hospitalized for falls are nearly six times more likely to be discharged into long term care compared to older adults hospitalized for other conditions. In 2013, the cost for fall injury hospitalization among adults 65 years and older in Oregon totaled to more than $219 million.\textsuperscript{413} Between 2011 and 2015, the mortality rate from falls in the region was 388 deaths per 100,000 residents age 85 and older. Figure 6.39, below, highlights the difference in mortality rates for different age groups among the elderly in the county and region.

**Figure 6.39: Fall mortality among elder adults in Linn County and the LBL Region, 2011-2015**

![Fall mortality among elder adults in Linn County and the LBL Region, 2011-2015](image-url)
Conclusion

Understanding the leading causes of illness and death is a first step on the path to preventing both the loss of life and improving the quality of life within the region. While leading causes of death in the region closely mirror those of the state, examining various cancers, heart disease, and other major causes reveal areas of vast improvement, as well as areas in which the region is doing more poorly than the state average. Data on many sub-populations are noticeably absent throughout this chapter. While we know that factors such as access to health care, mental health status, and other demographics are closely linked to particular conditions at a state or national level, without more robust data we can only guess at local trends. The more detailed data we have about disparities within particular populations and illnesses, the more ability we have to address these issues effectively in the region. As discussed throughout the chapter, many of the conditions that cause illness and death within the region have well-established causes, with a number of them rooted in behaviors or risk factors that can be prevented. The following chapter takes a closer look at behaviors and risk factors that affect a person’s health and well-being across the life course.
Chapter 7
Behavioral Health

Mental health disorders are experienced by people of all ages, from early childhood through old age. Research suggests that only about 17 percent of U.S. adults are considered to be in a state of optimal mental health. An estimated 26 percent of Americans age 18 years and older are living with a mental health disorder in any given year and 46 percent will have a mental health disorder during their lifetime. These disorders include, among others, anxiety, depression, behavior disorders, persistent suicidal thoughts, schizophrenia, and Alzheimer’s disease. County Health Rankings reports the number of poor mental health days each month, both as a proxy for mental health diagnoses and as an indicator of overall mental wellness. Residents of Linn County reported an average of 4.5 poor mental health days over the previous month. This measure is based on survey responses to the question: “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” The average of 4.5 poor mental health days in Linn County is the highest number of poor mental health days reported by the County Health Rankings for Linn County since 2011. Oregonians across the state reported an average of 4.6 poor mental health days. The Healthy People 2020 benchmark is 2.3, placing the region and the state in the worst 10 percent nationwide for this measure, with clear room for improvement. From 2008 to 2011, 60 to 64 percent of regional residents reported no poor mental health in the past 30 days. These rates are statistically equivalent to the statewide rate of 65 percent. From 2010 to 2013, self-reported depression rates in Linn County was 28 percent, close to the state rate of 25 percent.

There is a strong link between chronic disease, injury and mental illness. Tobacco use among people diagnosed with mental health conditions is twice that of the general population. Other associations between mental illness and chronic disease include cardiovascular disease, diabetes, obesity, asthma, arthritis, epilepsy, and cancer. Injury rates for both intentional and unintentional injuries are 26 times higher among people with a history of mental health conditions than for the general population. National research indicates that people with serious mental illness die on average 25 years earlier than the general population. Sixty percent of those deaths are due to medical conditions such as cardiovascular disease, diabetes, respiratory diseases, and infectious illnesses; 40 percent are due to suicide and injury.

Many mental health disorders can be treated effectively, and prevention of mental health disorders is a growing area of research and practice. Early diagnosis and treatment can decrease the disease burden of mental health disorders as well as associated chronic diseases. Assessing and addressing mental health remains important to ensure that all Americans lead longer, healthier lives.
One group of particular concern regarding mental health is the incarcerated population. In Oregon, the provision of effective mental health service has been shown to lead to positive outcomes. These outcomes include a dramatic drop in arrests, reduction in the likelihood and duration of incarceration, and fostering of self-sufficiency and well-being as a result of improved social, emotional, and vocational functioning. Approximately 3,400 adults with mental illnesses were incarcerated in prisons in Oregon in 2010. This was a prevalence of approximately 24 individuals with mental illness for every 100 incarcerated individuals.

Substance Abuse and Mental Health Services Administration

The Substance Abuse and Mental Health Services Administration (SAMHSA) is a part of the U.S. Department of Health and Human Services that deals with “reducing the impact of substance abuse and mental illness on America’s communities.” SAMHSA defines any mental illness among adults over 18 as:

“....currently or at any time in the past year having had a diagnosable mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) of sufficient duration to meet diagnostic criteria specified within the DSM-IV.”

SAMSHA conducts an annual survey, called the National Survey on Drug Use and Health (NSDUH), which provides sub-state estimates of a variety of mental health and substance abuse topics. However, SAMHSA does not evaluate individual counties but instead divides the state into regions. Region 3 includes Linn, Benton, and Lincoln counties, but also includes Clatsop, Columbia, Lane, Marion, Polk, Tillamook, and Yamhill as well. Therefore the SAMSHA statistics represented by figures in this chapter should be interpreted in the correct context.

Suicide

Suicide is death caused by self-directed injury with intent to die as a result of the injury. As a public health concern, it relates to both injury and violence and mental health. However, while many unintentional injuries can be prevented by making one’s environment safer, suicide can also be effectively prevented by providing treatment to those with mental health disorders. Therefore, suicide is discussed in the context of mental health. Suicide is an important public health problem in Oregon. It is also the leading cause of injury-related death in the state and is the 9th leading cause of death for Oregonians. There are more deaths in Oregon due to suicide than due to car crashes. Linn County recorded 16 suicides per 100,000 residents between 2011 and 2015. The statewide rate in the same period was 17 per 100,000 persons.

Depression, Suicide, and Suicidal Ideation

Depression is the most common type of mental illness and it is estimated that it affects more than 26 percent of the U.S. adult population. Depression is characterized by a depressed or sad mood, diminished interest in activities which used to be pleasurable, weight loss or gain, fatigue, psychomotor agitation or retardation, inappropriate guilt, difficulties concentrating,
and recurrent thoughts of death. Depression has many degrees of severity, including dysthymia (a chronic, persistent mild depression) to major depressive disorder (clinical depression). Depression is also the most common underlying cause of suicide, and many individuals who die by suicide have a diagnosable mental or substance abuse disorder, and most have more than one disorder. In Oregon, suicide rates are higher than the national average and about 70 percent of people who died by suicide from 2003 to 2012 also had depression.

Factors associated with an increased risk of suicide include:

- having a family history of suicide;
- having a family history of child maltreatment;
- having previously attempted suicide;
- having a history of mental disorders, particularly clinical depression;
- having a history of alcohol and substance abuse;
- living in an area where there is a local epidemic of suicide;
- isolation or feeling cut off from other people;
- encountering barriers to accessing mental health treatment;
- encountering loss (relational, social, work, or financial);
- having a physical illness;
- having easy access to lethal methods; and
- an unwillingness to seek help due to the stigma attached to mental health and substance abuse disorders or to suicidal thoughts.

While protective factors against suicide have not been studied as extensively as risk factors, they are equally important. Factors that have been found to buffer individuals from suicidal thoughts or behavior include:

- Effective clinical care for mental, physical, and substance abuse disorders;
- Easy access to a variety of clinical interventions and support for help seeking;
- Family and community support (connectedness);
- Support from ongoing medical and mental health care relationships; and
- Skills in problem solving, conflict resolution, and nonviolent ways of handling disputes.

Table 7.1 highlights the percentage of 8th and 11th grade students in the region that exhibited signs of depression, thought about suicide (suicidal ideation), or attempted suicide during 2015. The rate of attempted suicide is higher among 8th graders in the region than among 11th graders in the region.
Table 7.1: Percent of 8th and 11th grade students that exhibited signs of depression, thoughts about suicide, or actually attempted suicide during the last 12 months, Linn County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major depressive episode</td>
<td>8th grade</td>
<td>27 %</td>
<td>29 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>29 %</td>
<td>29 %</td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td>8th grade</td>
<td>18 %</td>
<td>18 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>16 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>8th grade</td>
<td>7 %</td>
<td>9 %</td>
</tr>
<tr>
<td></td>
<td>11th grade</td>
<td>5 %</td>
<td>5 %</td>
</tr>
</tbody>
</table>

Table notes: Major depressive episode was asked as: feeling so sad or hopeless for two weeks that the youth stopped doing most normal activities.

Source: Oregon Healthy Teens Survey

SAMHSA measured suicidal ideation among adults (Figure 7.1). Young adults ages 18-25 consider or think about suicide at more than twice the rate as adults 26 and higher, and this is consistent in both Region 3 and at the state level.

Overall, the suicide rate among Linn County adult males is 2.6 times the rate among adult females. The total suicide rate increases with age, but this is due primarily to the outsize effect of male suicide rates, which increase with age. Among males of all age groups in the region from 2011 to 2015, males over the age of 65 had the highest suicide rate at 38.6 per 100,000 men (Figure 7.2). Females had a much lower rate of suicide, averaging 9.3 per 100,000 women, and this rate does not increase with age. The suicide rate among women peaks at 13.7 per 100,000 women between the ages of 45 and 64.

Figure 7.1: Young adults (ages 18-25) and adults (26+) that experienced Serious Thoughts of Suicide in the Past Year in Adults in Region 3 and Oregon, annual averages 2012-2014

Source: Substance Abuse and Mental Health Services Administration
Due to the small numbers of suicides in a given year, data presented here is aggregated across the LBL Region for confidentiality and more accurate estimates.

**Figure 7.2: Suicide rates per 100,000 men, per 100,000 women, and per 100,000 individuals, with regional age adjusted averages, 2011-2015**

**Race/Ethnicity**

Suicide events among non-white individuals are rare in the region, therefore race/ethnicity data cannot be reported at the regional level for confidentiality and reliability reasons. However, state suicide rates in the following figure may be used to understand trends in suicide deaths by race and ethnicity among all age groups (Figure 7.3).
Suicide among Veterans

Veterans are twice as likely as nonveterans to die by suicide. Approximately 23 percent of suicides that occurred in Oregon between 2008 and 2013 were among veterans, but less than 9 percent of Oregonians were veterans during that time. Of those, 97 percent of veteran suicides were male. Overall, male veterans had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male non-veterans). However, the ratio between female veterans and female non-veterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female non-veterans). Between 2008 and 2012, 20 veterans in Linn County died by suicide.

Suicide among older adults

Regional suicide rates are also higher among older adults, with 23 suicides per 100,000 adults age 65 and older between 2011 and 2015. This rate is 39 percent higher than the age adjusted rate for all regional residents. This increased rate conceals the difference between older men and women, however. The suicide rate among older men was 56 percent higher than among all men. The suicide rate among older women was 12 percent higher than among all women, and was lower than the suicide rate among women age 45-64. See Figure 7.18 in the Adults Mental and Emotional Health section for a visual representation of these data.
Mental Health

Perinatal Depression

Maternal depression, or perinatal depression, is a depressive disorder characterized by feelings of sadness or hopelessness, reduced interest or pleasure in activities, changes in weight/appetite, sleeping disruption or too much sleep, restlessness or irritability, or diminished ability to think or concentrate during pregnancy and/or soon after giving birth. Mothers with maternal depression are less likely to engage in healthy parenting behaviors. As a result, mother-infant bonding and attachment can be compromised. In extreme cases, mothers with maternal depression have harmed themselves or their babies.442

In Oregon, nearly 1 in 5 (18.8 percent) new mothers report symptoms of depression during and/or after pregnancy. This figure has been relatively constant since 2009.443 Regional and county-level data depicting maternal depression is currently limited; however, state level data can provide some insight into the experiences of mothers in the region.

The most recent detailed data on maternal depression and disparities among women in Oregon is from 2004 to 2008:

- Low income women are twice as likely to report depressive symptoms as high income women (36.2 percent versus 16.7 percent).
- Current smokers are 50 percent more likely to report depressive symptoms than non-smokers (33.5 percent versus 21.7 percent).
- Women who experienced partner stress are twice as likely to report depressive symptoms (42 percent versus 16.2 percent).
- Racial/ethnic minority mothers are more likely to report depressive symptoms than White mothers (Hispanic 31.1 percent versus White 20.8 percent).
- Teen mothers are more likely to report depressive symptoms than older mothers (36.3 percent of <20 year olds versus 16.9 percent of 35 years and older).444

Mental Illness

The Substance Abuse and Mental Health Services Administration (SAMHSA) and their definition of mental illness was discussed earlier in this chapter. Again, their regional data also includes additional counties in addition to the Linn, Benton, and Lincoln county region mentioned throughout this report. It is important to consider this when making interpretations or conclusions about Region 3 data.

A major depressive episode (MDE) is defined by SAMHSA as experiencing a depressed mood or loss of interest or pleasure in daily activities and a majority of specified depression symptoms lasting over 2 weeks within the last year. A serious mental illness among adults aged 18 and
over meets the same criteria as any mental illness provided that the symptoms resulted in serious functional impairment.445

In all categories measured (Any Mental Illness, Serious Mental Illness, Major Depressive Episodes, Suicidal Ideation) there is little difference between state and Region 3 numbers, but there are differences between age groups.

As seen in Figure 7.4, one quarter of individuals surveyed age 18-25 in Oregon and Region 3 report experiencing Any Mental Illness within the last year. Nearly one in five people in Oregon and one in four people in Region 3 age 26 and older reported the same.

**Figure 7.4: Young Adults (ages 18-25) and Adults (26+) with Any Mental Illness in the Past Year in Oregon and Region 3, annual averages from 2012-2014**

![Image showing the percentage of population with mental illness by region and age group]

Source: Substance Abuse and Mental Health Services Administration

Populations of adults ages 18-25 and 26 and older experience relatively the same rate of severe mental illness in Oregon and Region 3 (Figure 7.5). This is consistent with the National Alliance on Mental Illness’s findings that 1 in 25 adults experience severe mental illness.
The data indicates that the probability of experiencing a major depressive episode decreases with age (Figure 7.6). Children 12-17 have the highest rate of major depressive episodes with 15 percent in Oregon and 14 percent in Region 3. Twelve percent of adults 18-25 and 8 percent of adults 26 and older reported experiencing major depressive episodes; a marginally lower rate than adolescents.

**Figure 7.5:** Young Adults (18-25) and Adults (26+) with a Serious Mental Illness in the Past Year in Adults in Oregon and Region 3, annual averages from 2012-2014

**Figure 7.6:** Children (ages 12-17), Young Adults (18-25), and Adults (26+) that experienced a Major Depressive Episode in the Past Year in Oregon and Region 3, annual averages from 2012-2014

*Source: Substance Abuse and Mental Health Services Administration, 2016*
Less serious mental health conditions also have an impact on wellbeing. The Oregon Health Authority produces annual county behavioral health profiles for Oregon Health Plan members. The most recent publically available profile was produced in 2015. These data provide information about the population receiving the Oregon Health Plan (OHP) and that population’s mental health and demographics.

For the purposes of understanding the data from the behavioral health profile, it should be clear that it includes identified mental health conditions. Data focuses on receiving mental health services or treatment, so actual prevalence is likely underestimated. As seen in Figure 7.7, a little over 1 in 3 OHP members aged 12-17 have received some type of service(s) for a mental health condition. These results are consistent from Linn County to the state level. Children under age 12 are also consistently lower, with a 5 to 6 percent difference from their older counterparts.

**Figure 7.7: OHP members age 0-17 with a mental health condition in Linn County, the LBL Region, and Oregon, 2015**

![Bar chart showing prevalence of mental health conditions in Linn County, the LBL Region, and Oregon](image)

*Source: Oregon Health Authority Behavioral Health Profiles, 2015*

In OHP adults aged 18 and older, the profile separates ‘Mild or Moderate’ from ‘Severe’ mental health disorders. Severe disorders involve serious functional impairment. If someone has a Severe disorder, they cannot also be counted in the Mild or Moderate category. Though the prevalence remains the same in both age groups for mild or moderate disorders, the prevalence of severe disorders increases in the 26 and older population. This may be explained by the later onset of certain serious disorders including schizophrenia.
Table 7.2: Percent of OHP members, age 18-25 and age 26+, with a Mild or Moderate or Severe Mental Health Disorder in Linn County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Age group</th>
<th>Severity of mental health disorder</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>Mild or moderate</td>
<td>26 %</td>
<td>24 %</td>
<td>27 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>10 %</td>
<td>9 %</td>
<td>8 %</td>
</tr>
<tr>
<td>26+</td>
<td>Mild or moderate</td>
<td>29 %</td>
<td>27 %</td>
<td>28 %</td>
</tr>
<tr>
<td></td>
<td>Severe</td>
<td>17 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority Behavioral Health Profiles

Bullying among youth

Childhood and adolescence are formative times in a person’s life. The number and severity of adverse experiences during childhood affects an individual’s risk for alcoholism, depression, heart disease, liver disease, intimate partner violence, sexually transmitted infections, smoking, and suicide. Adverse events include emotional, physical, and sexual abuse and neglect, and various types of household dysfunctions such as violence against mothers, substance abuse, mental illness, parental separation or divorce, or an incarcerated household member.447,448

Gender Identity and Sexual Orientation

Adolescence is a time of developing sexual awareness and gender expression, although many children are aware of their developing gender identity from a very early age. Because most state and national surveys do not ask questions related to sexual orientation or gender identity, it is difficult to estimate the health needs of lesbian, gay, bisexual, transgender, or queer children, youth, and adults in the region and Oregon.

Available data include survey responses on harassment among adolescents in our public schools. Across the county, region, and state during the 2014-2015 school year, 8th graders reported having been harassed by a peer who thought they were gay, lesbian, bisexual, or transgender more frequently than 11th graders (Figure 7.8). Overall, harassment based on perceptions about sexual orientation declines with age.449,450, 451
Bullying/Peer Abuse

The same factors that influence where people live and the opportunity they have to be healthy (income, employment, education) are also linked to the occurrence of violence, which can occur, among other ways, in the form of bullying or other abuse. Violence in schools can affect the learning environment and contribute to absenteeism. Students who are bullied, harassed, and feel unsafe or otherwise victimized, are more likely to miss classes, skip school, feel depressed, or exhibit problem behaviors. Research shows that comprehensive discipline, positive behavioral support, and anti-bullying programs in schools can reduce the incidence of harassment among primary and secondary school students.452

Figure 7.9 shows the percent of students in 2015 that did not go to school at least once in the past 30 days due to feeling unsafe at school or on their way to school. Both 8th and 11th graders in Linn County reported missing school at rates similar to their peers statewide.453
Figure 7.9: Percent of students, 8th and 11th grade, that did not go to school one or more times in the past 30 days due to feeling unsafe at school or on their way to or from school in Linn County, the LBL Region, and Oregon, 2015

Source: Oregon Healthy Teens Survey

Figure 7.9 shows the percentage of students in 8th and 11th grade who did not go to school one or more times in the past 30 days due to feeling unsafe at school or on their way to or from school in Linn County, the LBL Region, and Oregon, 2015. The data indicates that approximately 7% of students in Linn County, 6.8% in the LBL Region, and 7.6% in Oregon did not go to school due to feeling unsafe. The graph also shows that the percentage is higher in 11th grade compared to 8th grade in all regions.

Figure 7.10 below shows that reasons for harassment at school differ among age groups at the regional level, and that the overall incidence of harassment among county students is common. While the percent of students who report having been harassed at school in the past month tends to decrease with age, reasons for and severity of harassment vary among age groups. Aside from all or other reasons, harassment for physical characteristics is the most reported reason for harassment across all age groups.\textsuperscript{454}

Figure 7.10: Percent of students in 8th and 11th grade, who experienced bullying in the past 30 days by reason in Linn County, 2015

Source: Oregon Healthy Teens Survey

The graph in Figure 7.10 illustrates the percentage of students who experienced bullying in the past 30 days by reason in Linn County. The reasons include race or ethnicity, sexuality, sexual harassment, group of friends, physical characteristics, other reasons, and bullied for any reason. The graph shows that physical characteristics are the most common reason for bullying, followed by race or ethnicity and sexuality. The percentage of students who experienced bullying due to physical characteristics is higher in 11th grade compared to 8th grade.
Sexual violence against youth

The Oregon Healthy Teens Survey also asks 11th graders if they experienced pressure to have sex in the past year. Fifteen percent of Linn County 11th graders reported having been pressured to have sex, which is greater than the proportion statewide.

Figure 7.11: 11th graders pressured to have sex in Linn County, the LBL Region, and Oregon, 2015

![Bar chart showing the percentage of 11th graders pressured to have sex in Linn County, the LBL Region, and Oregon in 2015.]

Source: Oregon Health Teens Survey, 2015

Alcohol, Tobacco, and Prescription and Illicit Drug Abuse

Alcohol and prescription medications are consumed appropriately and responsibly by most of the population. However, problems frequently occur when they are over-consumed, used inappropriately, combined with other substances, or consumed while engaging in risky activities such as driving or unsafe sexual activity. The cost to society from the misuse of alcohol, prescription medications, and other drugs is massive. Beyond direct injury and death due to misuse and overdose, there are other health-related complications. There are many potential consequences for children exposed to drugs during their mothers’ pregnancy, as well as impacts on family and the contribution to crime and homelessness. The spread of infectious disease, including through sexual transmission and needle sharing, can be at least partially attributed to drug use. The financial costs associated with lost productivity, healthcare, and legal expenses for individuals and the wider community is far-reaching.455

Research has shown that people are most likely to misuse drugs—including tobacco, alcohol, and illegal and prescription drugs—during adolescence and young adulthood. Misuse of substances at an early age (particularly before age 18) is shown to be an important predictor of substance use disorders later in life, making this period an important focus for prevention efforts.456
Some of the primary factors related to whether an adolescent tries drugs include the availability of drugs in the home, neighborhood, and community, as well as the home environment. Adolescents who experience violence, emotional or physical abuse, mental illness, or drug use in the home are at increased risk of using drugs. In addition, certain genetic factors and mental health conditions (including depression, anxiety, and poor impulse control) increase the likelihood that an adolescent will use drugs.457

**Alcohol Use**

The younger a person begins drinking alcohol regularly, the greater the chance that person will develop a clinically defined alcohol disorder. Youth who start drinking before age 15, compared to those who start at age 21, are far more likely to be injured while under the influence of alcohol, to be in a motor vehicle crash after drinking, or to become involved in a physical fight after drinking.458 Overall, alcohol use among Linn County youth tends to increase with age, reflecting the state trend displayed in Table 7.3. Thirty-eight percent of Linn County 8th graders said it would be “very easy” or “sort of easy” to obtain alcohol. This proportion almost doubles to 66 percent of 11th graders, and is similar to the rest of the LBL region and to Oregon.459

**Binge Drinking**

Binge drinking, in which a person consumes a significant amount of alcohol in a short period of time, is associated with the same serious health problems as other forms of alcohol abuse. Middle and high school youth in the region and Oregon report binge drinking at similar rates. Approximately 8 percent of Linn County 8th graders reported binge drinking in 2015 (Table 7.3). These rates increase to 18 percent among 11th graders.460 The county likely meets the Healthy People 2020 objective of reducing the percent of high school seniors (12th graders) who binge drink to below 23 percent, but it is not possible to directly compare the rates between 11th graders and 12th graders.461

| Table 7.3: Percent of youth who reported consuming alcohol in the past 30 days in Linn County, the LBL Region, and Oregon, 2015 |
|---------------------------------------------------------------|-----------------|----------------|
| Grade                                                        | Linn County     | LBL Region     |
| Consumed at least one alcoholic beverage                      |                 |                |
| 8th grade                                                    | 15 %            | 12 %           |
| 11th grade                                                   | 29 %            | 29 %           |
| Consumed at least 5 alcoholic beverages on one occasion       |                 |                |
| 8th grade                                                    | 8 %             | 6 %            |
| 11th grade                                                   | 18 %            | 16 %           |

*Source: Oregon Healthy Teens Survey*
Alcohol abuse among adults

Excessive drinking is a risk factor for many adverse health outcomes, such as hypertension, alcohol poisoning, unintended pregnancy, fetal alcohol syndrome, inter-personal violence, and motor vehicle crashes.\textsuperscript{462} It can also contribute to a number of health issues including heart disease and stroke, high blood pressure, cirrhosis, coma, and even death.\textsuperscript{463}

Excessive drinking is defined differently for men and women, due to different metabolic rates and average body weights. Among men, excessive drinking is defined as two or more alcoholic drinks per day for a period of 30 days. In Linn County, about 11 percent of men reported excessive drinking. For women, excessive drinking is defined as one or more alcoholic drinks per day for a period of 30 days. Seven percent of women reported excessive drinking (Table 7.4).

Binge Drinking Among Adults

For adults over the age of 18, binge drinking is defined as consuming five or more drinks at one time for men and four or more drinks at one time for women.\textsuperscript{464} Binge drinking is more common across the region and in the state than drinking every day. About 26 percent of males and 18 percent of females in Linn County reported binge drinking within the previous month between 2010 and 2013 (Table 7.4).\textsuperscript{465} The Healthy People 2020 goal is to reduce the percent of adults that report having engaged in binge drinking within the previous month to 24.4 percent.\textsuperscript{466}

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>Linn County</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumed at least two alcoholic beverages per day for the past 30 days</td>
<td>Male</td>
<td>10.9 %</td>
<td>7.9 %</td>
</tr>
<tr>
<td>Consumed at least one alcoholic beverage per day for the past 30 days</td>
<td>Female</td>
<td>7.2 %</td>
<td>8.1 %</td>
</tr>
<tr>
<td>Consumed at least 5 alcoholic beverages on one occasion in the past 30 days</td>
<td>Male</td>
<td>25.5 %</td>
<td>22.4 %</td>
</tr>
<tr>
<td>Consumed at least 4 alcoholic beverages on one occasion in the past 30 days</td>
<td>Female</td>
<td>18.3 %</td>
<td>13.2 %</td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS

Oregon data indicates that older adults are much less likely to engage in excessive or binge drinking. Table 7.5 demonstrates a clear decline in binge drinking as adults progress from middle age to their retirement years.
Table 7.5: Excessive drinking and binge drinking among older adults who drink in Oregon, 2015

<table>
<thead>
<tr>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive drinking</td>
<td>Men</td>
<td>7 %</td>
<td>6 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>7 %</td>
<td>7 %</td>
</tr>
<tr>
<td>Binge drinking</td>
<td>Men</td>
<td>21 %</td>
<td>13 %</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>13 %</td>
<td>8 %</td>
</tr>
</tbody>
</table>

Table notes: Excessive drinking is defined as more than two drinks (men) or one drink (women) per day for the past 30 days. Binge drinking is defined as more than five drinks (men) or four drinks (women) on one occasion within the past 30 days. Denominators are all survey respondents who reported having at least one drink in the past 30 days.

Source: Oregon Health Authority, Oregon BRFSS

Binge Drinking among Oregon Health Plan Members

According to the 2014 MBRFSS report, about 10 percent of IHN-CCO members reported binge drinking in the previous 30 days. This is slightly lower than the proportion of all adult Oregon Medicaid members (12 percent). Binge drinking varied among different population groups, from 4.5 percent among Asians OHP members to 16 percent among American Indian and Alaska Native OHP members.467

Tobacco Use

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Tobacco use in any form can cause serious diseases and health problems, including cancers of the lung, bladder, kidney, pancreas, mouth, and throat; heart disease and stroke; lung diseases (i.e., emphysema, bronchitis, and chronic obstructive pulmonary disease); pregnancy complications; gum disease; and vision problems.468

Smoking patterns are predictive of increased rates of future disease and early death. Smokers die, on average, 10 years earlier than nonsmokers.469 Health impacts are more severe among those with lower socio-economic status as well. In the United States, low-income smokers are more likely to become ill and die sooner from tobacco-related diseases than smokers who have a higher income.470

Tobacco Use among Adolescents

Tobacco products are designed to deliver nicotine, an addictive drug that causes tobacco users to crave repeated doses. Youth are especially sensitive to nicotine and can become dependent more quickly than adults. Because of their dependency, nearly three out of four teen smokers continue using tobacco products into adulthood.471

Due to their growing popularity, 2015 was the first year the Oregon Healthy Teens Survey asked students about electronic cigarette use. Among both 8th and 11th graders, and in all three counties, electronic cigarette use was significantly higher than smoking cigarettes (Table 7.6). Eight percent of Linn County 8th graders reported smoking cigarettes, but 14 percent reported...
using e-cigarettes. That difference is consistent with 11th graders, as they were also much more likely to use e-cigarettes than smoke (20 percent e-cigarette use versus 11 percent smoking). Linn County rates are higher than Oregon rates in all of these categories. However, there is a positive trend for the county (illustrated in Figure 7.12). Tobacco use has been decreasing over time among county youth, with a notable 50 percent decrease for 11th graders from 2008 to 2015.472,473

Table 7.6: Percent of youth who reported consuming tobacco in the past 30 days in Linn County, the LBL Region, and Oregon, 2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked cigarettes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>8 %</td>
<td>5 %</td>
<td>4 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>11 %</td>
<td>9 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Used e-cigarettes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>14 %</td>
<td>10 %</td>
<td>9 %</td>
</tr>
<tr>
<td>11th grade</td>
<td>20 %</td>
<td>16 %</td>
<td>17 %</td>
</tr>
</tbody>
</table>

Source: Oregon Healthy Teens Survey

Figure 7.12: Percent of students that reported having smoked cigarettes at least once in the past 30 days, Linn County, 2008 and 2015

Source: Oregon Healthy Teens Survey

Tobacco Use among Adults

Overall, the smoking rate among adults has been slowly decreasing in the region, but both Linn and Lincoln counties have smoking rates that remained consistently above the state smoking rate, while Benton County has consistently maintained a smoking rate lower than that of the state.474 The current Healthy People 2020 objective is to reduce the percent of adults who currently smoke to 12 percent or below.475

Statewide, far fewer older adults are current smokers than are adults between the ages of 45 and 64. Furthermore, there is a greater proportion of former smokers among the elderly than
among younger adults. The data suggest that older adults are both more likely to quit and are more likely to have smoked when they were younger than adults age 45 to 64. Table 7.7 displays these data.

Table 7.7: Current and former smoking status in Oregon, 2013

<table>
<thead>
<tr>
<th>Sex</th>
<th>45 to 54</th>
<th>55 to 64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current smoker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>20 %</td>
<td>21 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Women</td>
<td>18 %</td>
<td>17 %</td>
<td>9 %</td>
</tr>
<tr>
<td>Former smoker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>23 %</td>
<td>36 %</td>
<td>53 %</td>
</tr>
<tr>
<td>Women</td>
<td>20 %</td>
<td>32 %</td>
<td>35 %</td>
</tr>
</tbody>
</table>

Source: Oregon Health Authority, Oregon BRFSS

Tobacco’s toll on the health and economy of Linn County each year is significant. For example, in 2014:

- 17,400 adults regularly smoked cigarettes,
- 5,488 people suffered from a serious illness caused by tobacco use,
- 279 people died tobacco-related deaths,
- $55.6 million were spent on medical care for tobacco-related illnesses, and
- $44.5 million in productivity were lost due to tobacco-related deaths.476

Secondhand Smoke Exposure

Secondhand smoke is a mixture of the smoke exhaled by a person smoking, and the smoke from burning tobacco in a cigarette, pipe, or cigar. Secondhand smoke contains the same toxic chemicals and carcinogens as inhaled tobacco smoke, and even brief exposure has been found to put a nonsmoker’s health at risk. In adults, secondhand smoke exposure has been found to cause lung cancer and heart disease. Children exposed to secondhand smoke are more at risk for ear infections, asthma attacks, respiratory symptoms and infections, and at greater risk for sudden infant death syndrome (SIDS).477

According to the Oregon Healthy Teens survey, approximately 34 percent of Linn County 8th and 11th graders live with someone who smokes. This rate is higher than the state proportion of 30 percent.478 Measures to reduce the amount of secondhand smoke exposure to others include, but are not limited to, quitting smoking, forbidding smoking in the home, and forbidding smoking in a shared car. Approximately 87 percent of Linn County residents have rules against smoking in the home.479

Tobacco Use among Oregon Health Plan Members

There is a tremendous difference in tobacco use between Medicaid members and the general population among adults in Oregon. Approximately 31.3 percent of OHP adult participants either smoke or chew tobacco, compared to 18.4 percent of all Oregon adults. Only 9.9 percent of Hispanic members use tobacco, but 41.1 percent of American Indians / Alaska Natives do.
The local region’s Medicaid population fares even worse than the state, with 35.2 percent of members using tobacco.\(^{480}\)

**Marijuana, Prescription Drug, and Illicit Drug Use**

Recreational marijuana is still illegal for all individuals under 21 years of age. The effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. Another major public health concern is the abuse of prescription drugs. When these drugs are misused or taken without a doctor’s prescription they can be just as harmful as illegal street drugs. This section focuses on adolescents who choose to abuse prescription drugs as opposed to accidental poisonings. Discussed in this section, illicit drugs include cocaine, methamphetamine, and heroin.

Among youths in the county, region, and state, marijuana use was generally more than twice as common as cigarette smoking (Table 7.8). Linn County rates were higher than the rest of the region and the state among 8th graders, but marijuana use increased across geographies from 8th grade to 11th grade. In the county and the region, one out of every five 11th graders surveyed reported using marijuana in the past 30 days. Approximately 1 in 12 Linn County youth abuse prescription drugs.\(^{481}\) There are no reliable data on other illicit drug use among adolescents in the region.

<table>
<thead>
<tr>
<th>Table 7.8: Percent of youth who reported consuming drugs in the past 30 days in Linn County, the LBL Region, and Oregon, 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade</strong></td>
</tr>
<tr>
<td>Used marijuana</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Used prescription drugs without a doctor’s orders</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Source:</strong> Oregon Healthy Teens Survey</td>
</tr>
</tbody>
</table>

**Marijuana use among adults**

While marijuana use is now legal for individuals 21 years and older, the effects of marijuana on children and adults have not been studied to the degree that other legal substances have been, including alcohol and cigarettes. Another major public health concern is the abuse of prescription drugs. When these drugs are misused or taken without a doctor’s prescription they can be just as harmful as illegal street drugs. In this section, illicit drugs include cocaine, methamphetamine, and heroin.

County data is not available for marijuana use among adults. However, state data demonstrates some patterns that may hold for local populations. Statewide, two-thirds of BRFSS survey respondents under the age of 65 who reported ever using marijuana said that they were 17 or younger the first time they tried it. The 65 and older age group is an outlier,
which is probably because marijuana was not culturally widespread in the United States until the late 1960s. A 65 year old in 2014 was 20 in 1969, older than the average age of first use.

Additional data from Oregon Behavioral Risk Factor Surveillance System (BRFSS) in 2014 is displayed below.

Table 7.9: Proportion of respondents in Oregon who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>49 %</td>
<td>54 %</td>
<td>67 %</td>
<td>27 %</td>
</tr>
<tr>
<td>Women</td>
<td>48 %</td>
<td>50 %</td>
<td>55 %</td>
<td>18 %</td>
</tr>
<tr>
<td>Both</td>
<td>49 %</td>
<td>52 %</td>
<td>62 %</td>
<td>22 %</td>
</tr>
</tbody>
</table>

Source: Oregon BRFSS

Table 7.10: Proportion of respondents reporting marijuana use in the past 30 days in Oregon among those who have ever used marijuana, by age and sex, 2014

<table>
<thead>
<tr>
<th></th>
<th>18-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>52 %</td>
<td>35 %</td>
<td>16 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Women</td>
<td>23 %</td>
<td>19 %</td>
<td>15 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Both</td>
<td>48 %</td>
<td>23 %</td>
<td>16 %</td>
<td>12 %</td>
</tr>
</tbody>
</table>

Table notes: These percentages only reflect usage among people who have ever used marijuana.

Source: Oregon BRFSS

Taken together, these two tables indicate that young adults (age 18-24) are actually less likely to have ever used marijuana than older generations (ages 45-64). However, young adults are much more likely than older adults to be active users of marijuana, suggesting that historically many adults stop using marijuana as they age. There is no data available yet to indicate whether this pattern will hold after marijuana legalization, or if current young adult marijuana users will continue to use marijuana as they age.

Marijuana Use among Oregon Health Plan Members

About 17.6 percent of Oregon adult Medicaid members surveyed reported using marijuana in the previous 30 days, compared with 22.6 percent of all Oregon adults. There is again a wide range of rates between different races and ethnicities, with Asian Medicaid members being the lowest (3 percent) and both African American and American Indian / Alaska Native members being the highest (23 percent). The OHP population served by the IHN-CCO reported roughly the same results as the state (17.5 percent).482

Prescription Drugs, Opioids, and Illicit Drugs

Another particular area for concern is the misuse of prescription drugs. Misuse of these drugs is highest among young adults (aged 18 to 25).483 As the most commonly abused type of prescription drugs, painkillers provide a useful marker for prescription drug misuse trends. While data shows little change in the self-reported pain experienced by Americans, the amount of painkillers dispensed in the U.S. has quadrupled since 1999, as have the deaths resulting
from prescription painkillers. While this epidemic represents an enormous burden to society, 2012 saw a national drop in both prescribing rates and prescription overdose deaths. This is the first decrease since the 1990s, offering promise for further progress in reversing the epidemic. Oregon (along with the majority of states) has implemented a system in an attempt to track and improve prescribing practices around certain types of controlled substances, including painkillers. The Oregon Prescription Drug Dashboard uses information provided by Oregon-licensed retail pharmacies to help track prescription drug use, hospitalizations, and deaths.

Opioids are a common drug class of interest, and have been getting increased media attention recently. In the 4th quarter of 2016, there were 291 opioid prescriptions per 1,000 Oregon residents, out of 395 total prescriptions per 1,000 residents. As a comparison, Linn County had 291 opioid prescriptions per 1,000 residents and 492 total prescriptions per 1,000 residents during the same time period. See Table 7.11 for more data relating to other prescription drug classes and region values.

Table 7.11: Prescription rates per 1,000 residents by drug class in Linn County, the LBL Region, and Oregon, 4th quarter of 2016.

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Linn County</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total prescriptions</td>
<td>492</td>
<td>430</td>
<td>395</td>
</tr>
<tr>
<td>All opioids</td>
<td>291</td>
<td>244</td>
<td>224</td>
</tr>
<tr>
<td>Sedatives (including Benzodiazepine)</td>
<td>123</td>
<td>115</td>
<td>101</td>
</tr>
<tr>
<td>Stimulants and pseudoephedrine</td>
<td>70</td>
<td>64</td>
<td>63</td>
</tr>
<tr>
<td>Methadone and muscle relaxants</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Oregon Prescription Drug Dashboard

In Linn County, the LBL Region, and Oregon, high prescription rates are associated with higher rates of hospitalization and death due to drug overdose. Linn County had an annual rate of about 51 hospitalizations per 100,000 residents due to drug overdose between 2012 and 2014 and a rate of 6.5 deaths per 100,000 residents due to drug overdose between 2013 and 2015. This equates to one hospitalization for every 1,400 prescriptions and one death for every 4,800 prescriptions. The lack of consistency in time frames between data on deaths and hospitalizations should be noted. A comparison of hospitalizations and deaths in Linn County, the LBL Region, and Oregon is shown in Figure 7.13 on the next page.
Figure 7.13: Annual drug overdose hospitalizations and deaths in Linn County, the LBL region, and Oregon, 2012-2014 and 2013-2015.

Figure notes: Data are 3-year averages of annual rates for both drug overdose hospitalizations (2012-2014) and deaths (2013-2015).
Source: Oregon Prescription Drug Dashboard

In Linn County, approximately one quarter of the hospitalizations and deaths were due to opioids. Most of the others were due to other prescription drugs, with a very limited number due to illegal, street drugs.487

Illicit Drug Use and Prescription Drug Misuse among Oregon Health Plan Members

A very small percentage (1 percent) of adult OHP members report having used meth, heroin, cocaine, crack, or ecstasy in the previous 30 days, and there are no equivalent data for the state in general. Similarly low values across races and regions for Medicaid members make it difficult to conclude any significant differences.

Similarly, about 1.4 percent of adult OHP members report misusing prescription pain relievers in the previous 30 days. Again, there is no data for the general state population. Hispanic members represent the low end of the range at 0.7 percent, while African Americans reported the high end at 3 percent. The region served by IHN reports a rate of 1.8 percent for misusing prescription pain relievers.488

Age Differences in Opioid Use and Overdose

Drug use is more prevalent among young adults. National Survey on Drug Use and Health (NSDUH) data indicate that approximately ten percent of Oregonians age 18-25 have used prescription drugs for non-medical purposes within the last 30 days. This is about twice the rate of both children age 12-17 (5 percent) and adults 25 and older (4 percent).489
According to the Oregon Prescription Drug Dashboard, drug overdoses are more common among older adults than children or young adults. The age groups are not strictly comparable with data from the NSDUH, but the rate of hospitalization in Oregon among adults age 45 and older is twice the rate of adults age 18-44. In the LBL Region, there were no recorded hospitalizations of adults over age 65, but the hospitalization rate was twice as high among adults age 45-64 as among young adults.

However, this trend is reversed for death rates, with the death rate among adults age 18-64 was four times as high as the rate among adults age 65 and older in both the LBL Region and Oregon. Table 7.12 displays these figures.

Table 7.12: Hospitalization and death rates per 100,000 people due to opioid overdose among adults in the LBL Region and Oregon, by age, 2011-2014

<table>
<thead>
<tr>
<th>Age group</th>
<th>LBL Region</th>
<th>Oregon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitalization rate per 100,000 people</td>
<td>Less than 18</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>18 – 44</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>45 – 64</td>
<td>17.6</td>
</tr>
<tr>
<td></td>
<td>65 – 74</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>75 and older</td>
<td>0</td>
</tr>
<tr>
<td>Death rate per 100,000 people</td>
<td>Less than 18</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>18 – 44</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>45 – 64</td>
<td>16.9</td>
</tr>
<tr>
<td></td>
<td>65 – 74</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td>75 and older</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Oregon Prescription Drug Dashboard

Local Data

The following local data collected by Linn County Health Department and partners is taken in part from existing documents.

Mental Health Promotion and Prevention

In 2015, Intercommunity Health Network partnered with local public health departments to assess readiness and capacity to address mental health promotion in Linn, Benton, and Lincoln counties. They conducted a series of key informant interviews with 25 interviewees that represented a diverse group of perspectives.

Key informants identified a long list of factors that impact mental health in the LBL Region, including:

- Lack of effective parenting skills
- Poverty
• Trauma
• Stress on family systems
• Lack of family support networks
• Lack of family structure
• Foster care
• Access to care

These, along with other responses, formed three overarching themes in the key informant interviews.

• A primary barrier for families voluntarily accessing, or following through with referrals to, mental health services is the stigma associated with mental health and mental illnesses or the lack of buy-in (acceptance) of the presence of poor mental health as a problem. This encompasses youth behavioral issues that are also avoided due to the stigma of poor parenting.
• The “service delivery system,” especially for the working poor and disenfranchised is extremely complex and fragmented; and, for the most part, requires a professional navigator, or mentor, to access.
• Additional barriers to families and youth accessing mental health services consist of a cluster of elements including proximity and lack of transportation; service hours; and chaotic life styles that inhibit follow-through with services identified for example.

Conclusion

Behavioral health disorders and illnesses can be addressed and treated effectively, with prevention and early diagnosis and treatment the surest method to reduce the disease burden of mental health illnesses, substance abuse disorders, and any of their associated chronic physical illnesses. A number of social, environmental, and economic circumstances, such as those described in previous chapters, can influence an individual’s mental health as well as their physical health. These multifaceted inputs to poor mental health make it necessary to take a thoughtful, informed approach to address the root causes of mental illness.
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Chapter 8
Health through an Equity Lens

This summary, taken from Healthy People 2020, is a good introduction to the concept of health equity:

Healthy People 2020 defines health equity as the “attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.”

Healthy People 2020 defines a health disparity as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.”

There are many challenges in describing the key health equity issues in Linn County and its communities. First and foremost, to describe inequities, we need data that both encompasses populations facing inequities and the health inputs or outcomes that embody those inequities. Populations and communities experiencing inequities tend to be small, marginalized, or underrepresented. In contrast, data collection efforts tend to focus on large, privileged, and well-represented groups. Therefore, health equity data frequently suffers from large margins of error, poor specificity, and sometimes the complete absence of information that truly reflects marginalized communities. These factors greatly restrict which health equities can be presented from a data perspective.

Another challenge to describing health inequities is the interconnected nature of health equity. As an example, experiencing homelessness is a major inequity. It arises from “historical and contemporary injustices”, lack of access to services, and marginalization. In addition, being homeless is a major cause of health inequities. People who experience homelessness have much worse health outcomes as a direct result of not having a home.

Different groups and communities often define health in different ways. This can make it challenging both to measure and to describe health inequities in different populations. As an example, if one community’s measure of health is to have a large household with many generations, while another community’s measure is the ability to live independently, the same question asked of people sixty-five and older (“Do you live alone?”) could provide evidence of a
healthy or an unhealthy community. Even more straightforward measures of health, such as disparate cancer diagnosis rates, could represent either an inequity in outcomes or better access to care. If cancer diagnosis rates in a community rise, it could be because cancer is an inequitable burden on that community, or it could be because access to cancer screening has improved.

The standard approach to health equity (listing distinct groups or topics), is also limited by the intersectionality of individuals and communities. Lisa Bowleg of Drexel University describes intersectionality as “… a theoretical framework that posits that multiple social categories (e.g., race, ethnicity, gender, sexual orientation, socioeconomic status) intersect at the micro level of individual experience to reflect multiple interlocking systems of privilege and oppression at the macro, social-structural level (e.g., racism, sexism, heterosexism)…Public health studies that reflect intersectionality in their theoretical frameworks, designs, analyses, or interpretations are rare.”492 Every topic presented in this chapter is a part of the health equity landscape of Linn County and cannot be considered alone.

Regardless of the challenges of describing health equity in Linn County, it is a critical measure of our community’s health. In this chapter, different populations are described that have generally faced inequities in their health.

**Race and Ethnicity**

About eighty-six percent of Linn County residents are white, non-Hispanic, according to the U.S. Census Bureau. It should be noted that residents without fixed addresses are frequently overlooked by Census Bureau surveys. These populations include migrant farmworkers and people experiencing homelessness. Nevertheless, the long history of Oregon and Linn County as communities that excluded or discouraged non-white immigration has led to many “historical and contemporary injustices” that contribute to inequities in health factors and outcomes.

**Poverty and Income**

Poverty rates in Linn County are much higher for non-white populations. The poverty rate among white, non-Hispanic Linn County residents is approximately 17 percent. Most other races and ethnicities have higher rates of poverty, as is shown in Figure 8.1, below. It should be noted that due to very small populations of American Indian or Alaska Native, Black or African American, and Native Hawaiian or Pacific Islander groups, the error in those estimates are quite large and the data should be interpreted with caution.
Median incomes in Linn County tend to be lower for non-white populations, with the exception of the Asian population. The median income among white, non-Hispanic Linn County residents is approximately $46,500. Asians have an estimated median income of $72,700. Compared to the higher poverty rate among Asian residents, this indicates that income inequality may be much higher in this population than in Linn County as a whole. American Indian and Alaska natives, Hispanics and Latinos, and people who report multiple races all have a much lower median income, between $23,000 and $43,000. Due to small representative populations, data for Black or African Americans and Native Hawaiian and Pacific Islander populations is unavailable.
**Home Ownership**

Home ownership is an important way for families and individuals to build wealth in the United States. Furthermore, home ownership usually creates stability for families if they don’t have to worry about rents rising, evictions, or inability to maintain the health of their living space since they are renters, not owners.

Data on home ownership in Linn County is difficult to stratify by race due to small numbers of non-white households, but it is possible to draw a comparison between home ownership among white, non-Hispanic households and Hispanic households (Figure 8.3). Overall, about 64 percent of households in Linn County are occupied by owners, as opposed to renters. Among white, non-Hispanic households, that number rises to 66 percent. However, only 41 percent of Hispanic or Latino households own the home they live in.
Healthy Environments

Environments that contribute to health are not equally accessible to all people, and marginalized communities in Linn County are disproportionately likely to live in neighborhoods or communities with higher health risks. As an example, tobacco retailers tend to have a higher density in low-income and non-white communities. The tobacco retail environment, meaning any place where tobacco products are advertised, displayed, or purchased, has a significant impact on tobacco use across the community. A high density of tobacco retailers in neighborhoods increases the exposure to unhealthy environments experienced by communities living in those areas.

Clear data on neighborhood-level environmental health risks is difficult to capture, as most environmental data is available at the county or city level. Tobacco retailers in Linn County are not required to have a license so the amount of tobacco retailers within the county is unknown.

Early learning

A good education and opportunities to learn are key components of building a healthy life. Learning and development begins before school. The Oregon Department of Education produces a report each year on kindergarten readiness in Oregon counties and CCO regions. The Early Learning Hub of Linn, Benton, and Lincoln Counties analyzed the data and identified disparities in readiness among non-white children. Children who identify as a minority were 24 percent more likely to score below average readiness in early literacy and 13 percent more likely to score below average readiness in early math. The largest non-white race or ethnicity
represented among kindergartners in the LBL region are Hispanic or Latino children. They had a 50 percent increased risk of scoring below average on early reading and a 26 percent increased risk for scoring below average on early math.\textsuperscript{496}

**Maternal health and teen pregnancy**

Access to health care during and following pregnancy is an area where significant health equity issues exist. In Linn County, 11 percent of white, non-Hispanic pregnant women had inadequate medical care or did not have any medical care during their pregnancies. In contrast, over 15 percent of Hispanic or Latino pregnant women lacked adequate care. See Figure 8.4 below.

**Figure 8.4. Inadequate or no prenatal care among pregnant women, by race and ethnicity. Linn County, 2008-2015.**

![Bar chart showing percent of births by race/ethnicity](image)

Figure notes: Proportions for groups other than Asian, Hispanic, and White, non-Hispanic should be interpreted with caution due to small numbers.

*Source: Oregon Public Health Assessment Tool*

A number of birth risk factors also display racial inequities. These data are presented in the table on the next page.
Table 8.1. Percent of births where the mother had a birth risk factor, by race and ethnicity. Linn County, 2008-2015

<table>
<thead>
<tr>
<th>Race or ethnicity</th>
<th>Maternal smoking</th>
<th>Gestational diabetes</th>
<th>Unhealthy weight gain during pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>18 %</td>
<td>8 %</td>
<td>30 %</td>
</tr>
<tr>
<td>Asian</td>
<td>4 %</td>
<td>14 %</td>
<td>40 %</td>
</tr>
<tr>
<td>Black or African American</td>
<td>11 %</td>
<td>5 %</td>
<td>27 %</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7 %</td>
<td>10 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>15 %</td>
<td>0 %</td>
<td>25 %</td>
</tr>
<tr>
<td>Two or more races</td>
<td>21 %</td>
<td>5 %</td>
<td>29 %</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>19 %</td>
<td>6 %</td>
<td>28 %</td>
</tr>
</tbody>
</table>

Figure notes: Proportions for groups other than Asian, Hispanic, and White, non-Hispanic should be interpreted with caution due to small numbers.

Source: Oregon Public Health Assessment Tool

Teen pregnancy is another area where racial and ethnic inequities exist. While the teen pregnancy rate among Hispanics and Latinas has decreased in both Linn County and the LBL Region overall, those rates still remain higher than the corresponding rates for all teens. During 2013-2015, the teen pregnancy rate in Linn County among Hispanic and Latina women was 24.2 births per 1,000 women, compared to 17.3 births per 1,000 teenage women in general. Figure 8.5 demonstrates how most of these rates have declined over time.

Figure 8.5. Pregnancy rates among teenagers age 15-19, Linn County and the LBL Region, 2008 - 2015
Oregon Health Plan members and racial and ethnic inequities

When surveyed by the Oregon Health Authority, close to eight percent of IHN-CCO members said that they feel their experiences with health care are worse than other races and ethnicities (this data includes respondents who identified as white). Statewide, Black or African American respondents were most likely to feel this way (16 percent), compared to an average of 6.4 percent of all respondents. Statewide, non-white Oregon Health Plan members were much more likely to experience physical or emotional symptoms due to treatment based on race, compared white Oregon Health Plan members.497

Sex and gender

There are many health disparities that exist between men and women based on biology. Women are much more likely to be diagnosed with breast cancer than men, while other cancers (such as prostate cancer) only occur in men. Maternal health risks such as preeclampsia only affect women. However, other health disparities that exist between men and women are not due to intrinsic difference, but to inequities. One challenge in reporting equity issues at the county level is the scarcity of county-level data that both addresses equity and stratifies by sex. Count Her In, a report of the Women’s Foundation of Oregon, identifies 8 major topics that affect women’s health and wellbeing. These are:

1. Violence against women,
2. Cost of caregiving,
3. Gaps in reproductive health access,
4. Wage/wealth gap,
5. Economic fragility,
6. Mental health challenges,
7. Public/private glass ceiling, and
8. Systemic racism.498

Sexual and domestic violence

As discussed in the Injury and Violence section of The Health of Our Bodies chapter, the Center Against Rape and Domestic Violence (CARDV) responded to a total of 6,297 calls on its 24-hour crisis line and provided emergency shelter to 83 adults and 59 children from Linn County for a total of 1,726 bed nights during the 2016-17 fiscal year. CARDV also provided legal system support to 599 adults and 23 teens and 24-hour in-person medical advocacy to 85 adults and 14 teens in the county.499 CARDV does not report the sex of the individuals it serves.

In Linn County, approximately 12.3 percent of 11th grade girls reported being physically forced to have sexual intercourse.500 This translates to an estimated 1 out of every 8 female high school students in Linn County that have been forced to have sexual intercourse. Approximately 24 percent of 11th grade girls reported having given in to unwanted sexual
activity because of pressure, or nearly 1 of every 4 in Linn County. Sexual violence against any children is a major concern, but these rates are approximately four times higher among girls than among boys.\textsuperscript{501}

**Poverty and economic instability**

Single women with children are at a much higher risk of poverty and economic instability compared to married women or single men with children. The median household income for a married couple with children is $67,900. The median household income for a single man with children is close to half that total: $32,500. Single women with children average only $17,400, however, slightly over half of what single men with children make. The federal poverty level for a single parent with two children is $19,337. This corresponds to 70 percent of single women with children living below the federal poverty line in Linn County, compared to 6 percent of single men with children.\textsuperscript{502}

![Figure 8.6. Median incomes of families with children, stratified by head of household, Linn County, 2011-2015.](image)

Figure notes: There are approximately 8,900 married couples with children, 1,300 single men with children, and 3,800 single women with children in Linn County.

*Source: U.S. Census Bureau, American Community Survey*

For single women with children, the cost of child care can be completely out of reach. The median annual cost of child care in Linn County is $8,100, just under half of the median single mother’s income.\textsuperscript{503} This may in fact be one of the reasons that the median income of single mothers is low – childcare may be too expensive for them to afford to work. However, it doesn’t explain the gap between men and women. Median annual rent in Linn County is $9,700, more than half of the median income among single mothers.\textsuperscript{504}
Sixty percent of households headed by single women in Linn County receive SNAP benefits (food stamps), compared with 47 percent of households with children headed by single men and 21 percent of married couple families with children.

**Disability status**

Individuals with disabilities are not inherently less healthy than able individuals. However, many individuals with disabilities encounter barriers to achieving health that create inequities. As with many groups, specific data on health equity issues facing individuals with disabilities is scarce. According to the American Community Survey, 17 percent of Linn County residents have disabilities. This figure may underestimate the true proportion; other sources, such as the Behavioral Risk Factors Surveillance System, estimate that closer to 37 percent of individuals report a disability.

Employment is the major source of income for most individuals in the United States, especially for individuals who do not have significant wealth. Therefore the ability to find a hold a job is a powerful socioeconomic determinant of health. In addition, steady work generally contributes to an increased sense of self-worth, independence, and integration with the community. Individuals with disabilities are far less likely to work than individuals without disabilities. Only 32 percent of individuals with disabilities in Linn County are employed, compared with 72 percent of residents without disabilities.

Figure 8.7. Labor force participation, stratified by disability status, Linn County, 2011-2015

The Oregon Department of Human Services tracts reports of abuse against vulnerable adults, including adults with self-care and cognitive disabilities. There is no comparable data to definitively point to an increased rate of abuses against these vulnerable adults compared to the general population. Within Linn and Benton counties (reported together by the
Department of Human Services Office of Adult Abuse Prevention and Investigations), there were 532 investigated allegations of abuse against adults with intellectual and/or developmental disabilities, of which 115 were substantiated. Of the substantiated claims in Linn and Benton counties, 21 occurred in care facilities and 94 took place in community settings.\(^{505}\)

### Age

Everyone has different health issues and health needs at different ages. Age is an intrinsic quality as opposed to a social construct, and everyone experiences different ages throughout their lifetimes. However, the society in which we live privileges some age groups and disadvantages others. In general, adults age 25 to 50 experience fewer health equity issues because they are young enough to avoid age-associated illness and old enough to work, drive, and make their own healthy decisions.

### Children

#### Socioeconomic determinants of health

Children are at increased risk of food insecurity compared to the general population. According to the Oregon Department of Education, 42 percent of Linn County children in public schools qualify for free or reduced-price lunches.\(^ {506}\) Another measure produced by Feeding America estimates that 26 percent of children under 18 in Linn County are estimated to be food insecure, compared to 16 percent of the general population.\(^ {507}\)

While it is difficult to accurately measure the number of residents who experience homelessness, the data suggest that Linn County children are at increased risk for housing instability compared to the general population. According to the Oregon Department of Education, 4.3 percent of Linn County children in public schools were homeless at some point in the 2015-2016 academic school year.\(^ {508}\) The best estimate of homelessness in the general population suggests that approximately 1 percent of the general population experienced homelessness in 2016.\(^ {509}\)

### Abuse

In 2016, there were a total of 869 reports of child abuse or neglect in Linn County, of which 180 (about 21 percent) were founded (determined to be abuse). This amounts to over 6 founded abuses reports per 1,000 children.\(^ {510}\) The types of abuse/neglect include mental injury, physical/medical neglect, physical abuse, sexual abuse, sexual exploitation, or threat of harm. Most often, the perpetrators of child abuse and neglect are family members (94.1 percent of reports in Oregon); parents account for 77.5 percent of all perpetrators.\(^ {511}\) There is no comparable data for abuse rates among the general population.
**Behavioral health**

Data on suicidal ideation suggests that teenagers are nearly twice as likely to seriously consider suicide as young adults and more than four times as likely as other adults. Eighteen percent of eighth graders reported suicidal ideation, compared to 9 percent of young adults age 18-25 and less than 4 percent of adults age 26 and older.⁵¹²

**Older adults**

Many health equity issues for older adults are related to an environment that is not supportive of older adults with mobility limitations. Older adults who do not drive and do not live near public transport systems are at risk for poorer access to health care, food insecurity, and social isolation. The driving time to a primary care medical clinic in Linn County can be upwards of an hour or more for rural Linn County, and there are no public transportation systems that serve the outlying part of the county. There is limited access in the county to programs such as Dial-A-Bus that provide reduced-cost services to seniors in Albany, Lebanon, and Sweet Home.

Food insecurity is a major concern among older adults, particularly when considering mobility or transportation barriers. In 2016, Meals on Wheels provided 232,000 meals to older adults in Linn, Benton, and Lincoln counties who are unable to leave their homes to get food.⁵¹³

Suicide rates among men age 65 and older are the highest of any other age group in the LBL region; there were 39 suicides per 100,000 men age 65 and older between 2011 and 2015, compared to 25 suicides per 100,000 men overall and 17 suicides per 100,000 residents (men and women).⁵¹⁴

**Immigration and documentation status**

**Access to health care**

Immigrants without documentation are excluded from receiving insurance through the Affordable Care Act.⁵¹⁵ This means they cannot get Medicaid insurance through the Oregon Health Plan or Medicare if they are over 65. Historically, undocumented children were ineligible for insurance through the Children’s Health Insurance Plan (CHIP). Furthermore, undocumented immigrants are not able to enter into formal employment, preventing them from having employer-provided health insurance. In order to seek medical care, most undocumented immigrants turn to safety net clinics, emergency rooms, and social service agencies.

In 2014, the Community Health Centers of Linn and Benton counties provided care to 363 patients who were classified as agricultural workers. There is no data specifically about immigrants without documentation.⁵¹⁶
Since immigrants without documentation do not have legal access to most government services, there is very little data collected about their health. This is a major challenge in describing their health inequities.

Other potential sources of health inequities are supported by state or national data but lack local data:

- Many immigrants without documentation work in agricultural industries, which have higher rates of injury and exposures to pesticides than other industries, or construction, which has higher rates of injury than many other industries.517
- Immigrants without documentation are excluded from government services such as Medicaid and housing vouchers. This exacerbates poverty among this group.518
- Immigrants without documentation frequently have limited English ability, raising barriers to accessing care and services if those services are not provided in the immigrants’ languages.
- Many immigrants without documentation are at risk of deportation if they encounter immigration authorities. As a result, many immigrants avoid seeking services, and many immigrants are at higher risk of abuse due to fear of reporting abuse to authorities.

**Cover All Kids**

One major step to improving access to care for immigrants without documentation was taken by the Oregon Legislature when it passed the “Cover All Kids” legislation, which extends eligibility for the Oregon Health Plan to all children in Oregon living in households up to 300 percent of the Federal Poverty Level, regardless of residency status.519 It is expected that the Governor will sign the bill into law. Cover All Kids will take effect on January 1st, 2018.

**Veteran status**

There are 11,226 veterans who live in Linn County, approximately 12 percent of the civilian population who are age 18 or older.

**Mental health**

There are no available local data detailing disparities in mental health status between veterans and non-veterans. National data indicate that combat veterans are two to four times as likely to have post-traumatic stress disorder (PTSD) as non-veterans. Reported PTSD rates among combat veterans at Veterans Affairs primary care clinics average 12 percent, compared to an estimated 6 percent among non-veterans.520 Another study found that the diagnosis rate of PTSD in veterans was 36 per 100,000 veterans each year between 2001 and 2014. Veterans were diagnosed with major depressive disorder at a rate of 9 diagnoses per 100,000 veterans over the same time period.521
Suicide among veterans

Veterans are twice as likely as non-veterans to die by suicide. Male veterans had a much higher suicide rate than non-veteran males (46 per 100,000 male veterans versus 28 per 100,000 male non-veterans). The ratio between female veterans and female non-veterans was even higher (21 per 100,000 female veterans versus 9 per 100,000 female non-veterans). Between 2008 and 2012, 20 veterans in Linn County died by suicide.

Disability status

In Linn County, veterans are nearly three times as likely to have a disability as non-veterans. According to American Community Survey data, 32 percent of Linn County veterans have a disability, compared to 19 percent of non-veterans. There is no data for National Guard members who served in combat roles.

Lesbian, Gay, Bisexual, and Transgender populations

There is a scarcity of data indicating health inequities among the lesbian, gay, bisexual, and transgender (LGBT) population in Linn County and in Oregon.

National data indicates that LGBT adults are more likely to smoke cigarettes or binge drink than straight adults. Bisexual adults are much more likely to report experienced psychological distress than either straight, gay, or lesbian adults.

The Centers for Disease Control reports that “Gay, bisexual, and other men who have sex with men made up an estimated 2 percent of the population but 55 percent of people living with HIV in the United States in 2013”. Men who have sex with men are also more likely to contract other sexually transmitted infections such as gonorrhea. Approximately 5 percent of Oregon men are gay, but 42 percent of men who have been diagnosed with gonorrhea report sex with other men.

Hate crimes

Nationally, in 2015, there were 30 hate crimes motivated by gender per 100,000 people, based on Bureau of Justice Statistics data. No sex- or gender-biased hate crimes were reported by local law enforcement agencies between 2011 and 2015.

Income and poverty

Income is the largest single determinant of health in the United States. Individuals in poverty or with low incomes are more likely to have unstable housing, have unreliable transportation, food insecurity, poor access to health care, and live in less healthy environments. All of these trends hold in Linn County to various degrees.
In addition to social determinants of health, income is closely linked with health behaviors and health outcomes. A comparison of the Oregon Behavioral Risk Factors Surveillance System and its Medicaid counterpart demonstrate this very clearly:

- Out of fourteen healthy and risky behaviors, IHN-CCO (Medicaid) members scored worse on seven of them than Linn County as a whole. IHN-CCO members scored better in regards to high blood pressure, consumption of fruits and vegetables, and binge drinking. While IHN-CCO members had the higher rates of smoking and overall tobacco use, a higher percentage of smokers wanted to quit and had tried to quit; they also reported a lower rate of exposure to second-hand smoke.
- Out of ten chronic diseases, IHN-CCO (Medicaid) members scored worse in seven of them than Linn County as a whole (IHN-CCO members scored better on cancer).
- IHN-CCO (Medicaid) members scored worse on all of six measures of recommended preventive health screenings and services (such as mammograms and testing for high blood sugar) when compared to the general population of Linn County.529

**Rural communities**

The Office of Rural Health, located at Oregon Health and Sciences University identifies unmet health care needs in rural Oregon. The Scio area (north-central Linn County), the Brownsville/Harrisburg area (southwestern Linn County), and much of the sparsely-populated eastern part of Linn County are identified as having unmet needs.

There are a great many health disparities that are evident between rural and urban populations. However, it is not always clear whether these disparities are due to inequitable conditions or underlying differences in the population. Maps that illustrate differences between urban and rural parts of Linn County are available in an appendix to the Community Health Assessment.
Conclusion
Meeting Challenges Together

As highlighted throughout this Community Health Assessment (CHA) report, there are many factors that influence and affect health outcomes both positively and negatively in Linn County. The CHA provides an opportunity to identify the many health concerns, disparities and impacts that residents face in their daily lives.

A health assessment is truly important to help identify needs and opportunities for improvement. At the same time, it is important to highlight the various strengths and assets that are alive and well within our communities. These strengths and assets refer to the many types of human, social, and economic resources that our region can offer to address problems. Organizations, agencies, and partners within and across the three counties can collaborate to improve the health and quality of life for residents. Together we can build a road to better health for the region.

General Health Status

In 2015, Linn County was ranked 17 out of 34 Oregon counties for health outcomes, and 21 out of 34 for health factors. Benton County was ranked 3 out of 34 for health outcomes and 1 out of 34 for health factors. Lincoln County ranked 25 out of 34 for health outcomes and 30 out of 34 for health factors.\(^5\) It is clear in these numbers that the region has a lot of opportunity ahead to work on improving overall health status for the residents who live here. The County Health Rankings look at the different factors and conditions that affect the health and well-being of county residents, and are made up of four categories: health behavior, clinical care, social and economic factors, and physical environment.

Linn, Benton and Lincoln counties have several rich community resources that can help meet the identified challenges and needs in the region. A few highlights of the many resources are summarized here.

Knowledge and Skills in Caring for and Promoting Health

The three-county region shares a long history of collaboration and partnership among various organizations and agencies to improve and promote health.

- Across the three counties, a unified Tobacco Prevention & Education Program aims to reduce tobacco-related illness and death. There also exist other population-based prevention and chronic disease programs that reduce the onset and incidence of many chronic conditions and help residents in the region take control of their health.
The county is home to a variety of medical care, dental care, vision care, elder care, medical clinics, doctors, nurse practitioners, and alternative medicine which can be expanded upon to meet the needs of all residents.

The county is part of a single Coordinated Care Organization (InterCommunity Health Network CCO) which unifies services and systems for Oregon Health Plan (Medicaid) patients within the Linn-Benton-Lincoln region. This includes a broad partnership and a number of collective projects, committees, and initiatives.

The Linn County health department works in close collaboration with the Benton and Lincoln County health departments. Information and surveillance is shared, resources are pooled, and expertise is lent as needed between the counties.

Social Support Networks

- Linn County shares a comprehensive network of social support and opportunity for the aging population with Benton and Lincoln counties.
- The region offers specialized support for people with mental illness, addictions, disabilities, and children with behavioral or emotional problems.
- The region shares a strong commitment to the health and wellbeing of children and youth. This commitment includes a focus on issues such as increasing family stability, kindergarten readiness, and equitable service coordination. Numerous organizations exist to address education, nutrition, and social support for children and families.

Without being able to call out every organization and project that supports the health of the region, what is shown above only highlights a few examples; each example is the result of efforts by countless community partners. A wealth of collective action and resources exists within and across the Linn, Benton, and Lincoln County region. Overcoming the many health challenges facing residents depends on this collective action and the vitally important part that each of our community partners play.
Acronyms used throughout the Regional Health Assessment document

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACA</td>
<td>Affordable Care Act</td>
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<td>ACS</td>
<td>American Community Survey</td>
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<td>AHRQ</td>
<td>Agency for healthcare Research and Quality</td>
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<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>BRFSS</td>
<td>Behavioral Risk Factor Surveillance System</td>
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<td>CARDV</td>
<td>Center Against Rape and Domestic Violence</td>
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<td>CCO</td>
<td>Coordinated Care Organization</td>
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<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<td>CHA</td>
<td>Community Health Assessments</td>
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<td>Community Health Improvement Plan</td>
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<td>CLAS</td>
<td>Culturally and Linguistically Appropriate Services</td>
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<td>CLCCHC</td>
<td>Cultural Competency in Health Care</td>
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<td>Department of Environmental Quality</td>
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<td>DMAP</td>
<td>Division of Medical Assistance Programs</td>
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<td>DSM</td>
<td>Diagnostic and Statistical Manual</td>
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<td>Early Childhood Development</td>
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<td>Emergency Departments</td>
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<td>Emergency Medical Services</td>
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<td>Environmental Protection Agency</td>
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<td>FASDs</td>
<td>Fetal Alcohol Spectrum Disorders</td>
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<td>FPL</td>
<td>Federal Poverty Level</td>
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<td>Fecal Occult Blood Test</td>
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<td>Federally Qualified Health Centers</td>
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<td>Human Immuno-Deficiency Virus</td>
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<td>Institute of Medicine</td>
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<td>Law Enforcement Agencies</td>
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<td>LGBTQ</td>
<td>Lesbian, Gay, Bi-sexual, Transgender, Queer</td>
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<td>Major Depressive Episode</td>
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<td>My Sister’s Place</td>
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<td>National Healthcare Disparities Report</td>
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<td>National Oceanic and Atmospheric Administration</td>
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<tr>
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<td>Oregon Coast Community College</td>
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<td>ODF</td>
<td>Oregon Department of Forestry</td>
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OHP  Oregon Health Plan
OHS  Oregon Head Start
OSHA  Occupational Safety and Health Administration
OSU  Oregon State University
PCP  Primary Care Provider
PDMP  Prescription Drug Monitoring Program
PM\textsubscript{2.5}  Particulate Matter
PPD  Postpartum Depression
PRAMS  Pregnancy Risk Assessment Monitoring System
RHA  Regional Health Assessment
SIDS  Sudden Infant Death Syndrome
SNAP  Supplemental Nutrition Assistance Program
STD  Sexually Transmitted Diseases
STI  Sexually Transmitted Infections
TFR  Total Fertility Rate
USDA  US Department of Agriculture
WHO  World Health Organization
WIC  Women, infants, and children
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255 SAMHSA. 2014. NSDUH

256 SAMHSA. 2014. NSDUH


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427 National Institute of Mental Health (National Institutes of Health). (n.d.). Suicide. Retrieved from:


484 Substance Abuse and Mental Health Services Administration, 2014

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Oregon BRFSS 2010-2013 County tables; Oregon Medicaid BRFSS 2014.

Appendix A

Maps of Linn County health indicators

This appendix presents 17 maps of Linn County. The first eight maps (A.1 through A.8) show Linn County demographics and social determinants of health. The other nine maps (A.9 through A.17) show estimates of chronic disease and health risk factors, organized alphabetically. Each map is preceded by a description on the facing page.

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A.2 Median age by block group
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Definition of a census tract and census block group.

According to the U.S. Census Bureau, census tracts are small, relatively permanent statistical subdivisions of a county or equivalent entity that... generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. A census block group is a subdivision of a census tract, generally containing between 600 and 3,000 people.

All demographic maps (excepting population density) in this appendix are based on data aggregated at the block group level. All chronic disease and risk factor maps are based on data aggregated at the census tract level. The exception is population density, which uses a shading pattern based off densities calculated from Linn County addresses.

Since data is aggregated, estimated numbers may change from one side of a border to another. This does not represent the reality on the ground, but is generally a reasonable approximation.
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**Health indicator shading and dot density**

One challenge in overlaying health data on census tracts (or block groups) is that rural census tracts are larger but have fewer people than urban census tracts. Shading a whole rural census tract will therefore overstate the on-the-ground reality of the data, since the human eye equates larger areas with larger numbers.

In order to avoid this visual illusion, these maps illustrate population density and health indicators by using a combination of shading and dot density. The shading of the dots indicates the probability of the indicator in question. A darker shade means a higher probability. The density of the dots indicate the population density. These dots are not individuals or individual addresses. They are randomly placed in accordance with population densities calculated from de-identified addresses. Rural census tracts have many fewer dots than urban tracts, thereby giving more appropriate weight to the smaller urban census tracts.

Throughout this appendix, all but two maps use a brown color palette for better contrast. There are two exceptions. The population density map, which uses shades of green for density, and the racial and ethnic diversity map uses shades of blue to avoid creating a visual connection between more diversity and darker brown shades. Darker shading corresponds to higher numbers (probabilities). This convention is used consistently in these maps. However, higher numbers do not necessarily indicate worse (or better) indicators. For example, there is no better or worse median age from a health standpoint, just different median ages.

[Maps begin on the following page]
A.1 Population density in Linn County

Linn County, 2017

Map notes:

The population density in Linn County is estimated from de-identified addresses. The more addresses in a given area, the darker the shade in that area. No actual addresses are identified in this map.

Certain, isolated addresses may exist in the unpopulated areas of Linn County; these addresses have been removed from the density calculation in order to preserve anonymity.

Data source:

Linn County Assessor 2017
Regional Health Assessment of Linn, Benton, and Lincoln Counties
Linn County Taxlot Data - deidentified
American Community Survey 2011-2015

Population density
Linn County 2011-2015

Dots indicate population density. Each dot represents approximately 15 people.
A.2 Median age of the population, by census block group

Linn County, 2011-2015

Map notes:

The median age by census block group is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. Median age estimates at the census block group level are reliable.

A darker shading corresponds to a higher median age.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

A.3 Racial and ethnic diversity, by census block group

Linn County, 2011-2015

Map notes:

Racial and ethnic diversity is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. The specific data used is the proportion of residents who do not identify as “White, not Hispanic or Latino”, according to the U.S. Census Bureau definition. Race and ethnicity estimates at the census block group level are generally reliable, but the U.S. Census Bureau does not survey individuals without fixed addresses, such as migrant workers. Therefore these data should be interpreted to refer only to residents with fixed addresses.

The blue color palette is used here to avoid creating a visual connection between more diversity and darker shades of brown.

The palette does align with the convention in this appendix that larger numbers correspond with darker shades. There is no “better” or “worse” proportion of non-white community members, just different proportions.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

Racial and ethnic diversity

Linn County 2011-2015

Proportion of the population that does not identify as white
- 0% - 7%
- 8% - 16%
- 17% - 25%
- 26% - 45%

Dots indicate population density. Each dot represents approximately 15 people.

Attachment 10: CHAs and CHPs
A.4 Household incomes below the federal poverty level, by census block group

Linn County, 2011-2015

Map notes:

The household poverty rate by census block group is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. The household poverty rate is the proportion of households in the block group that are below the federal poverty level. A household is defined as one or more people who occupy a housing unit. Households generally do not include shared living facilities such as dormitories, barracks, and assisted living facilities. The federal poverty level is actually many different poverty levels, one for each household size. Household poverty rate estimates at the census block group level are reliable.

A darker shading corresponds to a higher poverty rate.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

Household incomes below the federal poverty level (FPL)
Linn County 2011-2015

Dots indicate population density. Each dot represents approximately 15 people.
A.5 Households with a housing cost burden, by census block group

Linn County, 2011-2015

Map notes:

The proportion of households with a housing cost burden is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. A household has a housing cost burden if 30 percent or more of annual household income is spent on housing costs (rent for renters, mortgage and taxes for owners). Housing cost burden estimates at the census block group level are reliable.

A darker shading corresponds to a higher proportion of households with a cost burden (not a higher dollar cost burden).

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

Households with a housing cost burden

Linn County
2011-2015

Dots indicate population density. Each dot represents approximately 15 people.
A.6 Households occupied by renters, by census block group

Linn County, 2011-2015

Map notes:

The proportion of households that are renters is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. Renter-occupied housing estimates at the census tract block group are reliable.

A darker shading corresponds to a higher proportion of renters.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

Households occupied by renters
Linn County 2011-2015

Dots indicate population density. Each dot represents approximately 15 people.

Proportion of households that are occupied by renters
- 2% - 21%
- 22% - 39%
- 40% - 59%
- 60% - 94%
A.7 Households receiving SNAP benefits, by census block group

Linn County, 2011-2015

Map notes:

The proportion of households that receive SNAP benefits (Food Stamps) is estimated using U.S. Census Bureau American Community Survey data. This survey contacts a subset of households in each census block group. The estimates are computed from 5 years of survey data, 2011-2015. Estimates of households receiving SNAP benefits at the census block group level are reliable.

A darker shading corresponds to a higher proportion of households receiving SNAP benefits.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Data source:

A.8 Proportion of population with a disability, by census tract

Linn County, 2014-2015

Map notes:

The estimates of disability prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has any disability. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of disability for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of disability prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

A darker shading corresponds to a higher estimated proportion of individuals with disabilities.

The density of the dots indicate the population density. Each dot represents approximately 15 people, but does not represent any single individual or address.

Limitations and suggested interpretation:

Disability prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher disability prevalence, ranging between approximately 22 and 70 percent.

Data sources:


Proportion of population with a disability

Linn County 2014-2015

Proportion of the population with a disability:
- 22% - 29%
- 30% - 40%
- 41% - 52%
- 53% - 70%

Dots indicate population density. Each dot represents approximately 15 people.

Attachment 10: CHAs and CHPs
A.9 Estimated arthritis prevalence, by census tract

Linn County, 2014-2015

Map notes:

The estimates of arthritis prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with arthritis. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of arthritis for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the arthritis diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The arthritis diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher arthritis diagnosis rates, ranging between approximately 20 and 35 percent.

Data sources:


Estimated arthritis prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.

Regional Health Assessment of Linn, Benton, and Lincoln Counties
Linn County Tax ID Data - de-identified
American Community Survey 2011-2015

Attachment 10: CHAs and CHPs
A.10 Estimated asthma prevalence, by census tract

Linn County, 2014-2015

Map notes:

The estimates of asthma prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with asthma. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of asthma for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the asthma diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The asthma diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher asthma diagnosis rates, ranging between approximately 8 and 21 percent.

Data sources:


Estimated asthma prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.

Estimated asthma prevalence (probability of having asthma)
- 8% - 10%
- 11% - 12%
- 13% - 16%
- 17% - 21%

Regional Health Assessment of Linn, Benton, and Lincoln Counties
Linn County Task Force Data - de-identified
American Community Survey 2011-2015

Attachment 10: CHAs and CHPs
A.11 Estimated binge drinking prevalence by census tract

Linn County, 2015

Map notes:

The estimates of binge drinking prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks: “How many times during the past 30 days did you have 4 (women) or 5 (men) drinks on one occasion?” Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of binge drinking for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of binge drinking prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

Binge drinking prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher binge drinking prevalence, ranging between approximately 14 and 20 percent.

Data sources:


A.12 Estimated cancer prevalence by census tract

Linn County, 2015

Map notes:

The estimates of cancer prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with cancer. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of cancer for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the cancer diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The cancer diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher cancer diagnosis rates, ranging between approximately 11 and 18 percent.

Data sources:


Estimated cancer prevalence

Linn County 2014-2015

Estimated cancer prevalence (probability of having cancer)

- 11% - 12%
- 13%
- 14% - 15%
- 16% - 18%

Dots indicate population density. Each dot represents approximately 15 people.

Attachment 10: CHAs and CHPs
A.13 Estimated depression prevalence by census tract

Linn County, 2015

Map notes:

The estimates of depression diagnosis rate by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with depression. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of asthma for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the depression diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The depression diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher depression diagnosis rates, ranging between approximately 22 and 28 percent.

Data sources:


Estimated depression prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.

Estimated depression prevalence (probability of depression)
- 22%
- 23% - 25%
- 26%
- 27% - 28%
A.14 Estimated diabetes prevalence by census tract

Linn County, 2015

Map notes:

The estimates of diabetes prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with diabetes. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the rates of diabetes for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of the diabetes diagnosis rate. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The diabetes diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher diabetes diagnosis rates, ranging between 3 and approximately 17 percent.

Data sources:


Estimated diabetes prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.
A.15 Estimated heart disease prevalence by census tract

Linn County, 2015

Map notes:

The estimates of heart disease prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has ever been diagnosed with heart disease. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates heart disease diagnosis rates for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of heart disease diagnosis rates. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

The heart disease diagnosis rate is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher heart disease diagnosis rates, ranging between 1 and approximately 7 percent.

Data sources:


Estimated heart disease prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.
A.16 Estimated obesity prevalence by census tract

Linn County, 2015

Map notes:

The estimates of obesity prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks the height and weight of the respondent. These values are used to calculate the body mass index (BMI) of the person, with a BMI over 30 recorded as “obese”. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of obesity for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of obesity prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

Obesity prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher obesity prevalence, ranging between approximately 29 and 41 percent.

Data sources:


A.17 Estimated smoking prevalence by census tract

Linn County, 2015

Map notes:

The estimates of smoking prevalence by census tract are produced by statistical modeling. The Oregon Behavioral Risk Factors Surveillance System (BRFSS) conducts a phone survey of Oregonians throughout the state. BRFSS questions include age, sex, race/ethnicity, and county of residence. The BRFSS survey also asks if the respondent has smoked cigarettes in the previous 30 days. Data from 2014 and 2015 are combined to create a larger sample. The statistical modeling process then estimates the probability of smoking for different age, sex, and race/ethnicity throughout Oregon. These estimates are averaged according to the demographics of the census tract to produce a local estimate of smoking prevalence. The census tract demographics are obtained from the U.S. Census Bureau American Community Survey 2011-2015 5-year estimates.

Limitations and suggested interpretation:

Smoking prevalence is an estimate produced by statistical modeling. The accuracy of the estimates depends on the reliability of the survey data from BRFSS and the American Community Survey, and also the precision of the model parameters used to generate the estimates. Estimated values should not be interpreted as precisely accurate. Instead, this map should be interpreted as displaying areas of expected lower and higher smoking prevalence, ranging between approximately 11 and 35 percent.

Data sources:


Estimated smoking prevalence

Linn County 2014-2015

Dots indicate population density. Each dot represents approximately 15 people.
2018-2022 Benton County Community Health Improvement Plan

February 19, 2019

Benton County Health Department

A nationally accredited public health department since 2017
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Introduction and Background

The Benton County Health Department (BCHD) is proud to present the 2018-2022 Benton County Community Health Improvement Plan (CHIP). This document embodies deep collaboration between the Benton County Health Department and diverse community partners and organizations working together to improve the health of those who live, learn, work, and play in Benton County.

The Benton County CHIP outlines four priority health improvement areas for targeted work over the next five years, and serves as a guide for collective community efforts to address and measure progress. Selection of these priority areas does not diminish the importance of other public health issues faced by our community or the ongoing efforts by the Health Department and multiple stakeholders to improve the overall health status of everyone who lives, works, learns and plays in Benton County. It is a living document, which can evolve and adapt to unanticipated changes and health opportunities.

Our Community

Benton County lies in the central Willamette Valley of Oregon, between the Coast Range Mountains to the west and the Willamette River to the east. Approximately 90,000 community members live in Benton County. Benton County is home to families, migrant workers, immigrants, farmers, teachers, and many others. The population includes many younger individuals and highly educated professionals due to the presence of Oregon State University, Linn Benton Community College, and Samaritan Health Services.

Benton County ranks highly on most standard health indicators. However, like many other communities in Oregon, Benton County struggles with many of the key social determinants of health. Housing, transportation, and access to healthy food are unevenly distributed between higher socioeconomic status and lower socioeconomic status populations. Wide differences exist between English speaking families and non-English speaking families, urban and rural communities, and white and non-white households.

Benton County’s CHIP seeks to improve population health outcomes by advancing strategies that address the social determinants of health. The strategies outlined in the CHIP seek to improve the health status of the entire county population and benefit the community’s overall health status as opposed to providing treatment for individual conditions.
Community Health Improvement Plan Development

Community Health Assessment

Benton County Health Department (BCHD) utilized a data-informed improvement cycle to develop this CHIP. BCHD initiated this process in 2017 by identifying and gathering data to update the county’s Community Health Assessment (CHA). The CHA describes the health indicators, outcomes, and factors that influence health in a county and provides a health data resource for the County and community stakeholders. BCHD completed the updated CHA in 2017 with input from a steering committee comprised of community members.

2040 Thriving Communities Initiative

The 2040 Thriving Communities Initiative is a community-driven, visioning process that will use community-identified Core Values in order to address long-term, complex issues. The Core Values were developed through a collaborative process that will guide strategies, actions, and progress measures to align community activities and government services surrounding the dynamic challenges and opportunities facing the county now and into the future.

The 2040 Thriving Communities Initiative is incorporated into our community health improvement planning. Community feedback gathered during the outreach component of the Thriving Communities Initiative helped to identify the priority areas of the CHIP. Furthermore, equity and health are the core principles that serve as a foundation for all strategic work in the County. These two principles are also at the heart of the CHIP. Achieving a thriving, healthy, and equitable community will require the dedicated work of county government, but it also needs leadership and action from the community. The greatest value the CHIP brings to the Thriving Communities Initiative may be the community-centered approach to collective impact.

Based on data from the CHA and informed by community outreach and engagement efforts conducted through the Benton County Thriving Communities 2040 Strategic Planning Initiative, Health Department
staff identified seven potential CHIP priority health issues. BHCD presented these findings at eight public workshops where participants selected four areas on which to focus collective efforts over the next five years. Health Department staff worked with community partners to develop goals, strategies, and metrics in each of the four priority health issues.

**Focus on Health Equity**

Health equity means no individual, group, or people experiences worse health outcomes or unequal access to health supports because of factors that are beyond their control or are the result of injustice. Achieving health equity requires valuing everyone equally and taking action to prevent inequalities, address injustice, and eliminate health disparities.

Benton County, in partnership with Linn Benton Health Equity Alliance and community partners, took the additional step of conducting an equity screen on each of the community-generated ideas to ensure that the strategies chosen have the greatest potential to increase equity.

The priority health issues apply a health equity perspective by considering health determinants – the circumstances and conditions affecting people’s health opportunities – and health outcomes as a means to end the systematic creation of health inequities. Each priority health issue includes strategies that address a specific equity component and focus on correcting health disparities.

### 2018-2022 Priority Health Issues

Informed by the 2017 CHA and the 2040 Thriving Communities Initiative, Benton County Health Department (BCHD), with input from the community, prioritized the following four issues for strategic community health interventions in 2018-2022.

| Healthy food systems |
| Housing, transportation, and development |
| Mental well-being and community resiliency |
| Communicable disease |

### Community Health Improvement Plan Implementation and Measuring Progress

The Benton County Health Department (BCHD) uses a collective impact framework to convene community stakeholders in developing long-term health improvement activities. Key elements of this
model include: a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone support organizations.

The Community Health Improvement Plan (CHIP) priority areas serve as the common agenda for advancing health improvement efforts over the next five years. BCHD will track measures identified in the CHIP through annual progress reports, as well as progress on the collaborative work plans. Work plans outline agreed-upon, mutually reinforcing activities to improve health and conditions in each of the selected priority areas. BCHD will serve as the convening “backbone” organization to support continuous communication and coordination among partners who have agreed to take collective action to improve health and health-influencing factors outlined in the priority areas.

To foster ongoing collaboration, BCHD will convene and/or participate in regular planning activities with community partners and other stakeholders who are taking action on the work plans. This will provide ongoing opportunities for partners to update each other on their work and serve as a venue to help troubleshoot and solve problems that arise. BCHD will track the progress made in each priority area, and will coordinate with community partners to re-assess available data over the next five years to ensure resources are allocated to support strategic interventions where they are most needed.
**Priority Area: Healthy Food Systems**

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**Overview**
Eating nutritious food every day is essential for children and adults to maintain a healthy and active life. Local agriculture provides healthy food and economic opportunity for our communities. Increasing food security, developing policies that support nutrition, and preventing nutrition-related conditions such as obesity are potential areas for community health improvement. An equitable and healthy food system assures availability and adequate access at all times to affordable, sufficient, nutritious, safe, and culturally appropriate food.

**Healthy Food Systems in Benton County**
Access to and utilization of the Supplemental Nutrition Assistance Program (SNAP or Food Stamps) is an important component in a healthy food system. Qualifying individuals and families receiving SNAP have more access to healthy food, and are less likely to experience food insecurity than people who qualify but do not utilize SNAP. Low-income seniors who access SNAP have fewer admissions to hospitals and residential care facilities. Community partners have long funded and coordinated SNAP matching programs that increase access to fresh produce. However, Benton County’s SNAP utilization rate is the lowest in the state, lagging far behind other counties.

Linn Benton Food Share and Oregon State University have been at the forefront of innovations to increase access to nutritious foods for food-insecure individuals and households. Local growers participate in food donations and support for community gardens has increased availability of fresh produce during warmer months. Nevertheless, the food safety net experiences chronic shortages of fresh, healthy food.
Benton County has benefited from strong partnerships providing food education in area schools, including Oregon State University Extension and the Linus Pauling Institute. Community support for a strong local food system has raised awareness about the economic and health benefits of eating local food. However, low-income, rural, racial and ethnic minority, and immigrant communities still face significant barriers to establishing healthy food systems. Grocery stores in rural Benton County face significant challenges to offering the range of healthy, fresh, and nutritious food compared to those in Corvallis. Low-income neighborhoods and communities of color have the greatest concentration of fast food restaurants. Low-income children who rely on school breakfast and lunches are dependent on federal, state and local school food policies that shape their access to adequate nutrition during the day.

**Goals**

The community identified healthy food systems as a priority area for the 2018-22 Benton County Community Health Improvement Plan (CHIP) using the data provided in the 2017 Benton County Community Health Assessment (CHA). More specifically, the community and Benton County Health Department (BCHD) will work together to achieve the following goals:

| Goal 1: | Ensure that everyone experiences food security in Benton County. |
| Goal 2: | Increase access to and the consumption of nutritious and healthy food among all community members. |
| Goal 3: | Foster a local food system that supports local food producers and a vibrant local food economy. |

**Strategies**

Benton County Health Department (BCHD), in partnership with a workgroup of community partners, developed the following strategies to advance the goals of the healthy food systems priority area. Each strategy is linked to one or more goals.

| Strategy 1: | Increase coordination and promotion of services for low-income community members experiencing food insecurity to improve access to other services. |
| Equity component | Food insecurity is often one of many challenges facing individuals living in poverty. Increasing access to healthy, nutritious food and other social services will reduce the health disparity experienced by the lowest income community members. |
| Linked to: | Goal 1 |
| Strategy 2: | Influence the implementation of improved school food and nutrition policies in local school districts, including changes in food served to students, nutrition education, and changes in the school food environment. |
**Equity component**
Children qualifying for free and reduced price meals often eat the majority of their daily meals at school. Improving the health of school food can have significant impacts on the health of children living in poverty. The schools with the highest percent of students qualifying for free and reduced price meals serve rural students and large numbers of Hispanic/Latino and other diverse children.

**Linked to:** Goal 2

**Strategy 3:** Educate the public and decision makers on the food security and nutrition issues faced by low-income community members and challenges low-income food providers face in addressing those issues.

**Equity component**
Understanding the lived experiences of people living in poverty helps the public and decision makers recognize the needs of underserved communities.

**Linked to:** Goals 1 and 2

**Measurement**
The data indicators listed below illustrate why BCHD identified healthy food systems as a CHIP priority. Tracking these indicators over the next five years will allow BCHD to measure success in achieving the proposed goals.

<table>
<thead>
<tr>
<th>Indicator (Source)</th>
<th>Baseline (Year)</th>
<th>Jan 1, 2023 Target (rationale)</th>
<th>Linked to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP) Utilization rates. (DHS and ACS)</td>
<td>32 % (2017)</td>
<td>Increase to 57 % (2017 state average)</td>
<td>Goal 1</td>
</tr>
<tr>
<td>SNAP utilization rate among children. (DHS and ACS)</td>
<td>61 % (2017)</td>
<td>Increase to 70 % (2017 state average)</td>
<td>Goal 1</td>
</tr>
<tr>
<td>SNAP utilization rate among the elderly. (DHS and ACS)</td>
<td>26 % (2017)</td>
<td>Increase to 38 % (2017 state average)</td>
<td>Goal 1</td>
</tr>
<tr>
<td>Proportion of 8th graders eating 5 or more servings of fruits and vegetables each day. (OHT)</td>
<td>33 % (2017)</td>
<td>Increase to 40 %</td>
<td>Goal 2</td>
</tr>
<tr>
<td>Proportion of adults eating 5 or more servings of fruits and vegetables each day. (BRFSS)</td>
<td>20 % (2012-2015)</td>
<td>Increase to 25 %</td>
<td>Goal 2</td>
</tr>
</tbody>
</table>
Priority Area:
Housing, Transportation, and Development

Overview
Affordable, safe housing is a major social determinant of health. Convenient and affordable public transit can provide more equitable access to employment, healthcare, food, and social and civic opportunities, and alternative modes of travel support active lifestyles. Policies and planning that promote affordable, integrated housing; accessible, active transportation, and community development can advance community health and improve equitable access to community resources.

Housing, Transportation, and Development in Benton County
Benton County continues to have growing housing costs. This affects housing, transportation, and development in related ways. Low and moderate income persons frequently cannot afford quality housing in Benton County, and must either live in substandard housing or commute long distances to access employment, education and other resources.

Approximately one-half of all persons who work in Corvallis live outside of the city. Many cite lack of affordable housing, contributing to regional transportation and environmental challenges. Public transportation and other transit services do not facilitate commuting in rural Benton County or neighboring counties.

In 2017, the Housing Opportunities Action Council (HOAC) serving Benton County updated a Ten Year Plan to Address Homelessness: Community Strategies to Overcome Homelessness and Barriers to Housing, to ensure that everyone in Benton County has the opportunity to live in decent, safe, and affordable housing. The HOAC is implementing keystone strategies that have the potential to make the greatest impact. This includes increasing the affordable housing supply in Benton County through
affordable housing policies; establishing an emergency cold weather shelter; facilitating entry into permanent housing for persons experiencing homelessness or living in temporary or transitional housing; and securing more permanent supportive housing for special populations.

Benton County Dial-a-Bus has a comprehensive outreach program that serves seniors and persons with disabilities throughout Benton County. Individuals with Medicaid health insurance can also utilize Ride-line services through the Council of Governments. Many additional community groups are working to increase the safety and accessibility of healthy transportation alternatives in Benton County. Access Benton County, the Corvallis Bike and Pedestrian Advisory Committee, AFRANA (Alliance for Recreation and Natural Areas), and the Corvallis Sustainability Coalition have partnered with the health department to improve bicycle and pedestrian connections in Benton County communities.

**Goals**

Using the data provided in the 2017 Benton County Community Health Assessment (CHA), the community identified housing, transportation, and development as a priority area for the 2018-22 Benton County Community Health Improvement Plan (CHIP). More specifically, the community and Benton County Health Department (BCHD) will work together to achieve the following goals:

| Goal 1: | Reduce homelessness by disrupting the pathway from housing instability to homelessness and accelerating the transition from homelessness to stable housing. |
| Goal 2: | Increase access to and the use of healthy transportation options in low-income, rural, and racially and ethnically diverse communities. |
| Goal 3: | Align health, housing, transportation, and development efforts to promote healthy, equitable communities. |

**Strategies**

Benton County Health Department (BCHD), in partnership with a workgroup of community partners, developed the following strategies to advance the goals of the housing, transportation, and development priority area.
<table>
<thead>
<tr>
<th>Strategy 1:</th>
<th>Identify and implement opportunities to limit displacement due to serious violations of the City of Corvallis and Benton County building and safety code enforcement programs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity component</strong></td>
<td>Low-income renters may accept substandard housing for fear of eviction after a complaint, and low-income homeowners may risk defaulting on their mortgages if they are unable to afford maintenance. Increasing the stability and quality of housing will reduce health disparities experienced by these populations.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 1</td>
</tr>
<tr>
<td>Strategy 2:</td>
<td>Strengthen partnerships between housing services, local law enforcement, street outreach, and mental health to ensure mental/behavioral health and ensure other support needs of persons experiencing homelessness are appropriately addressed.</td>
</tr>
<tr>
<td><strong>Equity component</strong></td>
<td>Individuals experiencing homelessness or severe housing instability are an equity population of significant concern. Strengthening partnerships to serve this population could significantly improve equity in housing.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 1</td>
</tr>
<tr>
<td>Strategy 3:</td>
<td>Expand access to reliable public transportation, with a focus on underserved populations and areas of Benton County poorly served by public transit improving transportation connections between communities.</td>
</tr>
<tr>
<td><strong>Equity component</strong></td>
<td>Rural communities in Benton County are poorly served by public transportation options. Lower-income communities are more reliant on public transportation. Increasing access to public transportation will have the greatest impact on rural and lower-income communities.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 2</td>
</tr>
<tr>
<td>Strategy 4:</td>
<td>Increase access to safe transportation routes and options for bicyclists, pedestrians, and people with disabilities, focusing on policy, planning, and multi-modal design.</td>
</tr>
<tr>
<td><strong>Equity component</strong></td>
<td>Increasing access to safe transportation will help lower-income communities participate in healthy activities.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 2</td>
</tr>
<tr>
<td>Strategy 5:</td>
<td>Build understanding of equity related to housing, transportation, and development and foster dialogue and coordination across health, housing, transportation, and other sectors.</td>
</tr>
<tr>
<td><strong>Equity component</strong></td>
<td>Building understanding of equity can create opportunities to affect upstream determinants of equity in Benton County.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goals 1, 2, and 3</td>
</tr>
</tbody>
</table>
**Measurement**

The data indicators listed below illustrate why BCHD identified housing, transportation, and development as a CHIP priority. Tracking these indicators over the next five years will allow BCHD to measure success in achieving the proposed goals.

<table>
<thead>
<tr>
<th>Indicator (Source)</th>
<th>Baseline (Year)</th>
<th>Jan 1, 2023 target (rationale)</th>
<th>Linked to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of households with incomes under $50,000 who have a housing cost burden. (ACS)</td>
<td>66 % (2012-2016)</td>
<td>Decrease to 57 %</td>
<td>Goals 1 and 3</td>
</tr>
<tr>
<td>Eviction rate.</td>
<td>To be determined</td>
<td>To be determined</td>
<td>Goal 1</td>
</tr>
<tr>
<td>People moved into transitional housing and from transitional housing to permanent housing each year.</td>
<td>To be determined</td>
<td>To be determined</td>
<td>Goal 1</td>
</tr>
<tr>
<td>Proportion of community members who commute by bus, bicycle, or walking. (ACS)</td>
<td>18 % (2012-2016)</td>
<td>Increase to 25 %</td>
<td>Goal 2</td>
</tr>
<tr>
<td>Proportion of rural Benton County within ¼ mile of public transportation access points. (Oregon EPHT)</td>
<td>25% (2013)</td>
<td>Increase to 30 %</td>
<td>Goal 2 and 3</td>
</tr>
</tbody>
</table>

1 Rural Benton County is classified as all areas outside of Corvallis, specifically Census Tracts 005, 006, 101, 102, 103, 104, 108, and 109.
Priority Area: 
Mental Wellbeing and Community Resiliency

Overview

A growing body of evidence shows that good mental health is more than just the absence of mental illness or disease, and that social, environmental, and economic factors significantly contribute to positive mental wellbeing and resiliency (e.g., housing, food, transportation, education, employment, income, racism, discrimination, and health care, among others).

Racism, discrimination, and marginalization create toxic environments that damage wellbeing and weaken resiliency among children and adults. Childhood neglect, maltreatment, deprivation, and trauma are also strong risk factors for future mental and physical health problems. People affected by violence, poverty, incarceration, or homelessness; lesbian, gay, bisexual, and transgender (LGBTQ) people; indigenous peoples; and people with disabilities are at increased risk of mental health disorders. Interventions that target children and adolescents and their families can significantly reduce mental illness, disabilities, and other health disparities across the life span.

The World Health Organization’s 2017 Mental Health Action Plan seeks to advance efforts that prevent or reduce mental disorders through improvements in mental health for whole communities. This increasing emphasis on prevention strategies that target social, environmental, and economic determinants of mental health provide new opportunities to deploy public health strategies to improve community mental health. Refining surveillance and data tracking systems to better target, inform, and evaluate population level interventions is also critical in advancing these efforts.
Mental Wellbeing and Community Resiliency in Benton County

The 2017 Community Health Assessment (CHA) highlights a number of areas of concern related to mental health and resiliency of Benton County communities. Fifty percent of children in Benton County live in environments that create lasting adverse impacts, such as food or housing insecurity, or living with a family member with a substance abuse disorder. Forty percent of adolescents insured through the Oregon Health Plan receive treatment for a mental health condition. As the population of Benton County ages, isolation and detachment among seniors is growing. Suicide, which affects all community members, is actually most common among older adults. There are about 23 deaths by suicide per 100,000 community members over the age of 45 each year.

Adequate funding for community mental health services is an ongoing challenge in Oregon, as it is in many other locales. However, the expansion of Medicaid under the Affordable Care Act and Oregon’s Coordinated Care (CCO) system is a national model for integrating behavioral and mental health services with primary care. Benton County’s innovative efforts to operationalize this at the local level have been widely recognized.

Local schools, non-profit organizations, and other community coalitions are actively engaged and advocating for resources to address the mental health needs of children and youth. The Early Learning Hub of Linn, Benton, and Lincoln Counties is convening cross-sector partners to coordinate resources for programs serving children from birth to five years old.

In 2016, the Oregon Health Authority funded Benton County to identify opportunities to “increase protective factors, and create living conditions and environments that support mental health and allow people to adopt and maintain healthy lifestyles.” This Mental Health Promotion and Prevention (MHPP) initiative also funded a comprehensive community needs assessment that identified a number of social determinants of mental health that impact local youth and families, and the resulting recommendations are closely informing Benton County’s 2018-23 Community Health Improvement Plan (CHIP) goals and strategies.

Goals

The community identified mental wellbeing and community resiliency as a priority area for the 2018-2022 Benton County Community Health Improvement Plan (CHIP) using the data provided in the 2017 Benton County Community Health Assessment (CHA). Combined with previous work conducted through Benton County’s Mental Health Promotion & Prevention (MHPP) Initiative, and an organizational commitment to advancing public health framework that focuses on the social determinants of mental health and wellness, the Benton County Health Department (BCHD) will work to achieve the following goals:
**Goal 1:** Develop organizational and community capacity to implement a public health framework that focuses on the social, economic, and environmental determinants of mental health and wellbeing in Benton County.

**Goal 2:** Expand emerging best practices for health promotion, prevention, and policy interventions that minimize the social determinants of poor mental health and promote optimal wellbeing and resiliency.

**Goal 3:** Strengthen evaluation, surveillance, and data systems to better understand and track outcomes in fostering mental wellness and resiliency of Benton County communities.

### Strategies

Benton County Health Department (BCHD) developed the following strategies to advance the goals of the Mental Wellbeing and Community Resiliency priority area. The indicators listed in the Measurement section informed the development of these proposed strategies.

<table>
<thead>
<tr>
<th>Strategy 1:</th>
<th>Engage communities to enhance protective and environmental factors that contribute to overall community wellness and neighborhood resiliency.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity component</strong></td>
<td>Evidence shows that where people live, work, learn, and play significantly impacts health. Low-income, minority, immigrant, rural, and people with disabilities disproportionately live in communities without easy and safe access to walking, biking, natural and green spaces, healthy and affordable food, and affordable housing. Improvements in the built environment correspondingly increase health equity among these populations. Community engagement is critical for advancing health equity, generating better outcomes and increasing social cohesion and capacity to solve future challenges.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategy 2:</th>
<th>Foster access to high quality, affordable, inclusive, and culturally and linguistically appropriate early childhood development, school readiness, parenting education, and family support resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equity component</strong></td>
<td>Children and adolescents living in poverty and/or experiencing trauma, maltreatment, or other violence are at higher risk for mental and physical health problems. Interventions that address adverse childhood experiences significantly reduce mental illness, disabilities, and other health disparities across the life span.</td>
</tr>
<tr>
<td><strong>Linked to:</strong></td>
<td>Goal 2</td>
</tr>
</tbody>
</table>

| Strategy 3: | Expand the capacity of Benton County Health Services (BCHS), community organizations, and other non-traditional partners to conduct work using a trauma-informed lens. |
**Equity component**
Organizations, environments, policies, and practices that are more trauma-informed benefit everyone, but especially persons with lived experiences of trauma or other adverse life events. These efforts help people access and stay engaged in health and other social services, and help staff and providers deliver high quality programs and services.

**Linked to:** Goals 1 and 2

**Strategy 4:**
Research emerging best practices in the U.S. and internationally that are advancing mental health promotion and prevention strategies at the population level, including corresponding evaluation, surveillance, and data systems. Make recommendations to inform Years 2-4 of the Benton County Community Health Improvement Plan (CHIP).

**Equity component**
A population health approach that focuses on prevention will help to mitigate the impact of limited and declining public resources for mental health treatment services and the challenges of access to these services in rural areas.

**Linked to:** Goal 3

**Measurement**
The data indicators listed below illustrate why Benton County Health Department (BCHD) identified mental wellbeing and community resiliency as a Community Health Improvement Plan (CHIP) priority. Tracking these data indicators over the next five years will allow BCHD to measure success in achieving the proposed goals.

<table>
<thead>
<tr>
<th>Indicator (Source)</th>
<th>Baseline (Year)</th>
<th>Jan 1, 2023 target (rationale)</th>
<th>Linked to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of community members and social service staff who have completed a certified Trauma-Informed training (BCHD internal data)</td>
<td>To be determined</td>
<td>To be determined</td>
<td>Goals 1 and 2</td>
</tr>
<tr>
<td>Proportion of 8th graders who meet the Positive Youth Development benchmark (Oregon Healthy Teens)</td>
<td>58% (2017)</td>
<td>Increase to 80 %</td>
<td>Goal 2</td>
</tr>
<tr>
<td>Proportion of 11th graders who meet the Positive Youth Development benchmark (Oregon Healthy Teens)</td>
<td>62% (2017)</td>
<td>Increase to 84 %</td>
<td>Goal 2</td>
</tr>
<tr>
<td>Proportion of community members not limited by poor physical or mental</td>
<td>70% (2012-2015)</td>
<td>Increase to 80%</td>
<td>Goals 1 and 2</td>
</tr>
<tr>
<td>Health for any days in the past month (BRFSS)</td>
<td>56% (2012-2015)</td>
<td>Increase to 65%</td>
<td>Goals 1 and 2</td>
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<tr>
<td>Proportion of community members who did not experience any poor mental health days in the past month (BRFSS)</td>
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</tbody>
</table>
Priority Area: Communicable Disease Prevention

Overview
Improving vaccination rates, slowing the spread of STIs, and ensuring food safety are achievable areas for community health improvement. Decades of rigorous international scientific research has confirmed that vaccinations are the most effective way to prevent injury and death from communicable disease in children and adults, yet the state of Oregon has the nation’s lowest child vaccination rates. The largest burden of sexually transmitted infections (STI) is borne by young adults, the Lesbian Gay Bisexual Transgender Queer community, and marginalized populations such as persons experiencing homelessness, substance abuse, and other barriers to accessing testing and treatment. At the same time, the emergence of antibiotic-resistant diseases is a growing threat to everyone.

Communicable Disease Prevention in Benton County
Vaccination rates against common diseases remain low in both Oregon and Benton County. Local research indicates that parental vaccine hesitancy, rather than lack of access, is a primary reason for low child vaccination rates. Adult vaccination rates also lag behind federal and state recommendations, especially for vulnerable populations and older adults.

The past 15 years has witnessed troubling growth in the rate of sexually transmitted infections (STIs), including HIV infection. Benton County, along with Linn and Lincoln Counties, have also seen a dramatic increase in chlamydia, gonorrhea, and syphilis over the last five years, mirroring national trends. STIs affect all communities, but are most prevalent in marginalized communities such as men who have sex with men (MSM), injection drug users IDU), those with prior history of STIs, and low-income persons. Geographic isolation, substance use, mental health challenges, and the increasing crisis of homelessness create further barriers to curbing the spread of these illnesses.
Medical advancements have provided new tools to help address these growing threats. Pre-exposure prophylaxis (PrEP) to prevent HIV infection is more than 90% effective and is covered by most insurance plans, including the Oregon Health Plan. In the Linn, Benton, Lincoln region, new funding through a 5-year grant from the Oregon Health Authority is expanding the availability of STI/HIV harm reduction specialists to conduct community prevention work. A Linn, Benton, Lincoln STI/HIV Prevention Task Force convened in early 2018 is developing and implementing a multi-partner strategic plan to address the growing crisis of HIV/STIs. This multi-disciplinary collaborative is identifying unmet needs, coordinating and leveraging existing and new resources, and maximizing collective expertise across the region’s clinical and community health systems.

**Goals**

The community, in close partnership with the Linn, Benton, Lincoln STI/HIV Prevention Task Force and regional medical providers, identified communicable disease prevention as a priority area for the 2018-22 Benton County Community Health Improvement Plan (CHIP) using the data provided in the 2017 Benton County Community Health Assessment (CHA). Local medical providers, other regional public health partners, and Benton County Health Department (BCHD) will work together to achieve the following goals:

| Goal 1: | Achieve 0 percent growth in infection rates for chlamydia, gonorrhea, and syphilis. |
| Goal 2: | End new locally acquired HIV transmissions. |
| Goal 3: | Increase the proportion of community members protected by vaccinations. |

**Strategies**

Benton County Health Department (BCHD), in partnership with the Linn, Benton, Lincoln STI/HIV Prevention Taskforce, developed the following strategies to advance the goals of communicable disease prevention priority area.

| Strategy 1: | Engage high-risk populations to build connections and trust in their communities. |
| Equity component | The growth of sexually transmitted infections has been the greatest among high-risk populations. Connecting with these communities is the critical first step for addressing their health issues, including communicable disease. |
| Linked to: | Goals 1, 2, and 3 |
| Strategy 2: | Improve access to rapid STI/HIV testing & screening and referral services in primary care and community based settings. |
**Equity component**
Marginalized individuals and people who lack access to the traditional medical system have poorer health and are at higher risk for communicable disease and STI/HIV. Community based testing, referral, and treatment will reduce barriers to care.

**Linked to:** Goals 1 and 2

**Strategy 3:**
Strengthen public health infrastructure to conduct case investigation, partner notification, and referral services to reduce the impact of communicable diseases on local communities.

**Equity component**
The public health system is the primary mechanism to control communicable disease. Stronger infrastructure will benefit all communities in Benton County, especially those disproportionately impacted by the negative health outcomes of communicable diseases.

**Linked to:** Goals 1 and 2

**Strategy 4:**
Convene and provide administrative support to a regional coalition working to raise awareness about the STI/HIV epidemic and strengthen evidence based communicable disease prevention, testing and treatment services.

**Equity component**
Convening community leaders and partners to raise awareness of issues that disproportionately impact marginalized communities builds momentum for change. This also provides opportunities to advocate for systems and policy changes, and ensure the input of persons living with HIV/STIs are included in program and policy development.

**Linked to:** Goals 1 and 2

**Measurement**
The data indicators listed below illustrate why BCHD identified communicable disease prevention as a CHIP priority. Tracking these indicators over the next five years will allow BCHD to measure success in achieving the proposed goals.

<table>
<thead>
<tr>
<th>Indicator (Source)</th>
<th>Baseline (Year)</th>
<th>Jan 1, 2023 target (rationale)</th>
<th>Linked to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual growth rate of chlamydia infections per 100,000 people (OPHAT)</td>
<td>8.6% annualized increase (2007 to 2016)</td>
<td>Achieve a 0 % annual increase</td>
<td>Goal 1</td>
</tr>
<tr>
<td>Average annual growth rate of gonorrhea infections per 100,000 people (OPHAT)</td>
<td>6.6 % annualized increase (2007 to 2016)</td>
<td>Achieve a 0 % annual increase</td>
<td>Goal 1</td>
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<tr>
<td>Objective</td>
<td>Baseline Data</td>
<td>Target</td>
<td>Goal</td>
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<tr>
<td>Average annual growth rate of syphilis infections per 100,000 people (OPHAT)</td>
<td>25 % annualized increase (2007 to 2016)</td>
<td>Achieve a 0 % annual increase</td>
<td>Goal 1</td>
</tr>
<tr>
<td>Average number of new HIV infections per year (OPHAT)</td>
<td>3 per year (2007-2016)</td>
<td>Decrease to 0 per year</td>
<td>Goal 2</td>
</tr>
<tr>
<td>Proportion of two-year-olds up to date on vaccinations (4:3:1:3:1:4). (Oregon Immunization Program)</td>
<td>65 % (2017)</td>
<td>Increase to 91 % (highest rate of completion of individual vaccine – IPV)</td>
<td>Goal 3</td>
</tr>
<tr>
<td>Proportion of adolescents up to date on HPV vaccine. (Oregon Immunization Program)</td>
<td>40 % (2018)</td>
<td>Increase to 52 % (90th percentile of Oregon counties in 2018)</td>
<td>Goal 3</td>
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</tbody>
</table>
Community health improvement cannot be successful without the collaboration and leadership of many community partners. Below is a listing of community partners working in one or more of the priority health intervention areas as of December 2018. Benton County will update this list of partners as the CHIP action plans progress over the next five years.

<table>
<thead>
<tr>
<th>Partner</th>
<th>Food</th>
<th>Housing and Transportation</th>
<th>Wellbeing</th>
<th>Communicable Disease</th>
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<tr>
<td>211 Info</td>
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<tr>
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<td>Accountable Behavioral Health Alliance</td>
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<td>Benton County Community Development</td>
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<td>Benton County Parks and Natural Areas</td>
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<td>Benton County Public Works</td>
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<td>Benton County Sheriff’s Department</td>
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<tr>
<td>Benton County Thriving Communities Initiative, Health in All Actions and Equity Subcommittees</td>
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<td>Benton Habitat for Humanity</td>
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<td>Partner</td>
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<td>Benton Local Advisory Committee</td>
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<td>Blodgett Food Bank</td>
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<td>Center Against Rape and Domestic Violence</td>
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<td>Chintimini Senior Center</td>
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<td>City of Corvallis</td>
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<td>Community Health Centers of Linn and Benton Counties</td>
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<tr>
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<td>Corvallis Daytime Drop-in Center</td>
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<td>Corvallis Multicultural Resource Center</td>
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<td>Corvallis Parks and Recreation</td>
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<td>Corvallis Police Department</td>
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<tr>
<td>Coordinated Care Organization</td>
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<td>Jackson Street</td>
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<td>Kidco Head Start</td>
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<td>National Alliance on Mental Illness Corvallis</td>
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<td>Old Mill Center for Children and Families</td>
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<td>Oregon Cascades West Council of Governments</td>
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<td>Oregon Department of Human Services</td>
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<td>Oregon Family Support Network</td>
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<td>Oregon State University Anthropology</td>
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<td>Oregon State University Forests</td>
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<td>Oregon State University Human Services Resource Center</td>
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<td>Oregon State University Latino Studies</td>
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<td>Partner</td>
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<tr>
<td>Oregon State University College of Public Health and Human Sciences</td>
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<tr>
<td>Oregon State University Counseling &amp; Psychological Services</td>
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<td>Oregon State University Extension Service</td>
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<td>Oregon State University Student Health Services</td>
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</tr>
<tr>
<td>Philomath School District</td>
<td></td>
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<tr>
<td>Public Health Planning Advisory Council</td>
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<tr>
<td>Saint Mary’s Church</td>
<td>✔</td>
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</tr>
<tr>
<td>Samaritan Health Services</td>
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<tr>
<td>Shangri-La</td>
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<td></td>
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<tr>
<td>South Corvallis Food Bank</td>
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<td></td>
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</tr>
<tr>
<td>Stone Soup</td>
<td>✔</td>
<td></td>
<td></td>
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<tr>
<td>Strengthening Rural Families</td>
<td>✔</td>
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<tr>
<td>Ten Rivers Food Web</td>
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<td>The Corvallis Clinic</td>
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<td>✓</td>
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<tr>
<td>Timberhill Athletic Club</td>
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<td></td>
<td>✓</td>
</tr>
<tr>
<td>Trauma Informed Oregon</td>
<td></td>
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<td>✓</td>
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<tr>
<td>Trillium Family Services</td>
<td></td>
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</tr>
<tr>
<td>United Way of Benton and Lincoln Counties</td>
<td>✔</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Willamette Neighborhood Housing Services</td>
<td>✔</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Public Health Accreditation

Public Health Accreditation

Public health departments provide primary and expert leadership in protecting and promoting the health of people in communities across the country. The Public Health Accreditation Board is a nonprofit organization that sets national standards to help public health departments continuously improve the quality of their services and accredits departments that meet the standards.

Benton County Health Department has been accredited since 2017. Our community health improvement plan is one component of our work as an accredited public health department.
Glossary

**Community Health Assessment (CHA):** A systematic review of health status indicators that is used to identify key problems and assets in a community. The ultimate goal of a community health assessment is to develop strategies to address the community’s health needs and identified issues. Community engagement and collaborative participation are key ingredients.

**Community Health Improvement Plan (CHIP):** A long-term, systematic effort to address public health problems informed by a community health assessment. A CHIP defines the vision for the health of the community through a collaborative process.

**Community Health Improvement Process:** The implantation of a community health improvement plan through a partnership of local groups, including government entities, community organizations, and non-profits, among others.

**Collective impact:** The principle that many organizations from different sectors, working together on a common agenda, can make a larger impact than those organizations would on their own.

**Equity:** Equity may be defined differently by different communities. One definition is that no individual, group, or people experiences worse outcomes because of factors that are beyond their control or are the result of injustice. Equity is also a process where the empowerment and partnership of marginalized people are specifically valued to achieve the outcomes the community seeks.

**Health equity:** Health equity may be defined differently by different communities. One definition is that no individual, group, or people experiences worse health outcomes or unequal access to health supports because of factors that are beyond their control or are the result of injustice. Health equity is also a process where the empowerment and partnership of marginalized people are specifically valued to achieve the outcomes we seek.

**Health inequality or disparity:** Differences in health outcomes or health supports that may be related to internal or external factors.

**Health Indicator:** An outcome or support that can be measured and describes a dimension of health that is being studied.

**Priority area:** An identified health need that has been selected for improvement using specific goals and strategies. A priority area is intended to be a focus of collective impact and multiple community partners working together.
**Resiliency**: The capacity to recover quickly from difficulties.

**Social determinants of health**: The complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors. Social determinants of health are shaped by the distribution of money, power, and resources throughout local communities, nations, and the world.

**Trauma**: A deeply distressing or disturbing experience, or a pattern of distressing experience that occur over a period of time.

**Trauma-informed**: Understanding, recognizing, and responding to the effects of all types of trauma.
Healthy People Lincoln County 2018-2023

Community Health Improvement Plan

Creating a healthier place where you work, learn, live and play.
Characteristics of Lincoln County .................................................................................................3
Invest in Your Community ........................................................................................................4
About Healthy People Lincoln County .........................................................................................5
Overview of the Community Health Improvement Plan Process ..............................................6
  Our Community Conversations ...............................................................................................8
  Community Health Assessment Highlights .........................................................................9
Implementing the Plan ................................................................................................................10
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  Summary of the Community Health Improvement Plan Priorities ....................................12
  Social Determinants and Health Equity ................................................................................13
  Mental Health and Substance Abuse ....................................................................................16
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2012-2017 Accomplishments ..................................................................................................35
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This publication was supported by the Grant or Cooperative Agreement Number, B01 OT009175, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.
Lincoln County’s population is primarily non-Hispanic white (97%).

The elderly population is anticipated to increase by 62% when compared from 2010 to 2030.

Top employment opportunities are in manufacturing, government, and health care.

At the time of this report, the unemployment rate at was 5.2%, which is an improvement from 11% in 2009.

When residents were surveyed in 2017, they shared that their top barriers to being healthy were an inability to work, a lack of motivation, and stress.

In the 2017 survey, residents identified parks, trails/paths and good schools as strengths for Lincoln County.

According to data released in 2015 Lincoln County has a high percentage of adults that have experienced Adverse Childhood Experiences (ACEs). ACEs are linked to risky health behaviors, chronic health conditions, low life potential, and early death.

In 2017, it was reported that the number of premature deaths (years of potential life lost before age 75) in Lincoln County (6,700 per 100,000) is higher than the state of Wisconsin (6,000 per 100,000).

Source: County Health Rankings 2011-2017, Community Health Opinion Survey 2017, U.S. Census Bureau 2015, and Wisconsin Child Characteristics of Lincoln County
It takes motivation from an entire community to make a healthy community.

How can you contribute to making a healthier community?

**Become an Advocate!**
Educate your social circle including your family, your friends and your coworkers! Inform anyone you can get to listen about the possibilities outlined in this plan.

**Take Action!**
Whether you hold a neighborhood meeting about starting a community garden, or present the idea of increasing oral health education to a parent organization—remember, every effort makes a difference toward the collective good of our community.

What can you do to invest in your community as an agency or business?

**Listen!**
Review this plan and see how much of your strategic planning reflects the desires of the community you are serving.

**Innovate and Partner!**
Consider addressing some of the strategies discussed in the plan. Maybe you are already working on some of the pieces but need support to help complete or enhance the program. Contact members of Healthy People Lincoln County to help identify partnerships you can get involved in to successfully implement some of these interventions.

Source: Centers of Disease Control and Prevention
Healthy People Lincoln County

Working with partners helps us accomplish something that one agency could not do alone. Lincoln County Health Department (LCHD) partners with numerous organizations, agencies and individuals throughout the county in order to make our community a healthier place to live, learn, work and play. This initiative, or partnership, is called Healthy People Lincoln County (HPLC). HPLC and their partners are able to share resources, ideas and skills in order to avoid duplication and to provide higher quality programs or services for the community. The impact on health challenges in the community are greater when we combine our efforts.

Mission

Our mission is to promote partnerships within the community to improve health through advocacy, prevention and implementation of best practices.

Vision

Through community partners, Healthy People Lincoln County’s (HPLC) vision is to help Lincoln County become the healthiest community in Wisconsin where residents live the highest quality of life possible.

HPLC Partnership Committee and Coalitions

HPLC Partnership committee includes organizational members from UW-Extension– Lincoln County, Lincoln County Health Department, Ascension Good Samaritan Hospital and Ascension Sacred Heart Hospital. The partnership committee meets bi-monthly to provide guidance in the development, implementation and evaluation of the Community Health Assessment and Community Health Improvement Plan (CHIP). Achieving success in implementing the CHIP is facilitated through endless efforts from our community coalitions, organizations and the community as a whole.

For more information visit www.healthypeoplelincolncounty.org.
Background
The 2018-2023 Lincoln County Community Health Improvement Plan details goals, objectives and strategies to address the health priorities identified during the Community Health Assessment process. These priorities include Mental Health and Substance Abuse, Nutrition and Healthy Foods, and Oral (Dental) Health. Social determinants and health equity are additional overarching target priorities. The efforts to address these priorities are led by the Healthy People Lincoln County Partnership Committee who collaborates in creating and implementing this six year plan.

The Community Health Improvement Plan Process
The framework used while developing the Lincoln County Health Department’s Community Health Assessment (CHA) and the Community Health Improvement Plan (CHIP) comes from The Wisconsin Way on Improving the Health of Local Communities from the Wisconsin Association of Local Health Departments and Boards [www.walhdab.org](http://www.walhdab.org). The figure to the right shows the process model from the County Health Rankings, which is referred to in this framework. The first two phases in the frame work are accomplished during the CHA and the last three phase are accomplished during the CHIP.

Phase 1: Assess Needs & Resources
Phase 2: Focus on What’s Important
Phase 3: Choose Effective Policies and Programs
Phase 4: Act on What’s Important
Phase 5: Evaluate Actions
In December 2017, the process to develop the Community Health Improvement Plan (CHIP) began with a series of Action Planning Team meetings. The purpose of the Action Planning Team was to develop evidence-based goals and objectives based on the Community Health Assessment results in each priority area. Teams evaluated if objectives were relevant, appropriate, impactful and feasible. Team participation was selected from community coalitions that were established during the 2012 CHIP process, as well as from new partners and community members. Each team met 2-3 times to develop a plan for the priority to which they were assigned. The following describes each phase that was completed by the Action Planning Teams. See page 36 for a list of participants.

**Phase 3: Choosing Effective Policies and Programs**
A list of evidence-based programs were presented to the Action Planning Teams; as well as goals and plans from Healthiest Wisconsin 2020 and Healthy People 2020. Local coalition goals and activities were also shared from the previous 2012 CHIP. Based on this information, team members brainstormed goals, measurable objectives and strategies. The following sources provided an inventory of evidence-based practices; What Works for Health, County Health Rankings, Centers for Disease Control and Prevention, and the Association of State and Territorial Dental Directors.

**Phase 4: Act on What’s Important**
After the Action Planning Teams reviewed evidence-based programs, and the community health assessment results, team members developed a work plan for each priority area. Evidence based strategies, identified partners responsible for implementation, and timelines were included. During the development of the work plans, resources and assets in the community, non-duplication of programs, environment analysis on trending influences, and feasible strategies were all considered.

**Phase 5: Evaluate Actions**
The next step for the Action Planning Teams was to create evaluation objectives for each priority area and to identify key indicators. Evaluation objectives are used to measure progress and impact on the priority areas. Indicators were chosen from local, state and national data sources and will be used to assist in evaluating long term outcomes.

**Sharing the Plan**
Healthy People Lincoln County will disseminate the final CHIP to stakeholders and community members.
Our Community Conversations

Social Determinants and Health Equity
- More transportation options
- Better quality affordable housing
- Expand mentoring programs
- More volunteer, employment, training opportunities
- Stigma/stagnant social forces/culture

Oral Health
- Lack of motivation/fear to go to dentist
- Difficult to access care after work
- Lack of access to Bridge Dental Community Clinic
- Medicare doesn’t cover dental

Nutrition and Healthy Foods
- No healthy options when out to eat
- Family meals aren’t happening as frequently
- Low intake of fruits and vegetables
- Farmer’s market is too small
- Too expensive/time consuming

Mental Health and Substance Abuse
- Easy access to drugs and alcohol
- Not a lot for youth to do
- Mental health and treatment resources are limited
- Increased youth abuse and trauma
- No mental health courses in school

Top 5 Reasons People Love Living in Lincoln County
1. Good amenities (parks, trails, pool, library, etc.)
2. People are willing to help, volunteer, and get involved
3. Schools are strong and doing a good job educating
4. Easy to get around/ Walkable community
5. Strong relationships/People know each other

Questions we asked community members:
- What are some of the challenges in our county?
- What do you consider some of the major health concerns in our county?
- What resources would you suggest that aren’t currently available?
- What do you consider to be some of the barriers for county residents to be healthy?

The data represents community perceptions of the health of Lincoln County, collected through Community Forums, Key Informant Interviews, and Focus Groups in 2017 and 2018. Design source: Health Equity Alliance of Rock County (HEAR); Community Conversations.
The following is a summary of community successes and future opportunities as a result of the Community Health Assessment that was completed in April 2018. This summary provides ways for you as a community member or organization to take action on future opportunities. The complete Community Health Assessment can be found at [http://lincolncountyhealthdepartment.com](http://lincolncountyhealthdepartment.com).

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Community Successes</th>
<th>Community Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health and Substance Abuse</td>
<td>• Available trainings for providers and lay persons&lt;br&gt;• Psychiatry Residency Program&lt;br&gt;• Awareness/education programs</td>
<td>• Mentorship program in Merrill&lt;br&gt;• More treatment options&lt;br&gt;• More recovery support options&lt;br&gt;• More mental health providers</td>
</tr>
<tr>
<td>Nutrition and Healthy Foods</td>
<td>• Community gardens&lt;br&gt;• Special events and classes&lt;br&gt;• Free/reduced school lunches</td>
<td>• Access to healthy, affordable food&lt;br&gt;• Expand farmers’ market&lt;br&gt;• Expand food pantries</td>
</tr>
<tr>
<td>Oral (Dental) Health</td>
<td>• Free dental sealant program&lt;br&gt;• Free fluoride varnishing&lt;br&gt;• Oral health prevention campaigns</td>
<td>• Increase Medicaid reimbursement&lt;br&gt;• Provide dental care for those on Medicaid&lt;br&gt;• Expand dental hours</td>
</tr>
<tr>
<td>Social Determinants</td>
<td>• Transportation in Merrill&lt;br&gt;• Good schools&lt;br&gt;• Clean environment</td>
<td>• Develop transportation for Tomahawk&lt;br&gt;• Affordable and quality housing&lt;br&gt;• Availability of good paying jobs&lt;br&gt;• Motivated workforce</td>
</tr>
<tr>
<td>Access to Care</td>
<td>• Community paramedic program&lt;br&gt;• Availability of telemedicine&lt;br&gt;• Counseling for mental health in schools</td>
<td>• Advocate on access issues&lt;br&gt;• Increase specialty providers&lt;br&gt;• Affordable medications&lt;br&gt;• Community Navigator Hub</td>
</tr>
<tr>
<td>Built Environment</td>
<td>• Availability of outdoor recreation&lt;br&gt;• Community gardening&lt;br&gt;• Access to parks, trails and paths</td>
<td>• Make healthy activity the norm&lt;br&gt;• Better access to healthy affordable food&lt;br&gt;• More sidewalks</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>• Good air quality&lt;br&gt;• Environmental health regulations&lt;br&gt;• Local water lab</td>
<td>• Drinking water without nitrates&lt;br&gt;• Radon mitigations&lt;br&gt;• Education on carbon monoxide poisoning</td>
</tr>
<tr>
<td>Violence and Injury</td>
<td>• Available programs and classes&lt;br&gt;• Safety classes</td>
<td>• Fall prevention programs&lt;br&gt;• Child Death Review recommendations&lt;br&gt;• Special events on child safety</td>
</tr>
<tr>
<td>Reproductive and Sexual Health</td>
<td>• Programs and classes&lt;br&gt;• Required curriculum for schools</td>
<td>• Expand access to reproductive health services&lt;br&gt;• Enhance reproductive health education in school</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>• Access to parks, trails and paths&lt;br&gt;• Programs for youth and adults</td>
<td>• Reduce screen time&lt;br&gt;• Exercise facilities having day care available</td>
</tr>
<tr>
<td>Tobacco</td>
<td>• Insurance coverage of tobacco cessation methods&lt;br&gt;• Implementation of Smoke Free Air Law</td>
<td>• Education on e-cigarettes&lt;br&gt;• Regulation on e-cigarettes&lt;br&gt;• Cessation programs for pregnant moms</td>
</tr>
</tbody>
</table>
Definition of Health

According to the Centers for Disease Control and Prevention, health is a state of complete physical, mental, and social well-being and not just the absence of sickness or frailty. A variety of factors influence a person's state of health including biological, socioeconomic, psychosocial, behavioral, or social. Health equity is achieved when all people have "the opportunity to attain their full health potential" and no one is 'disadvantaged from achieving this potential because of their social position or other socially determined circumstance'.

Best Practices

Lincoln County Health Department and its partners strive to integrate evidence-based public health practices in all the objectives and strategies identified in this plan. Evidence-based interventions lead to more successful programs and have greater impact on policies. Not every goal or objective in this plan is considered 'evidence-based', due to the fact that there are varying levels of what is considered 'evidenced-based'. It might be because evidence-based research is not yet available on the strategies implemented. The action plan provided on the following pages documents if a chosen strategy is evidence-based.

Action Plans

Each goal in the Community Health Improvement Plan will be worked on by a community coalition. The action plan provides a symbol indicating what level of the socio-ecologic model is used. These action plans will be an ever changing document, that at a minimum, will be updated quarterly. Each goal will also include key indicators that are tracked by the coalition. Indicators will help in monitoring if the work being done is making a difference in the health of those that live in our community. See pages 12 –34 for each priorities action plan and key indicators.

Communication and Branding

Healthy People Lincoln County has been in existence since 2006. It is important that Healthy People Lincoln County continues to communicate the work that is being done to reach goals in each health priority. A Communication and Branding Plan will be developed by the Healthy People Lincoln County Partnership Committee.

Monitor and Sustain

The action plans for the CHIP will be monitored for outcomes by the each coalition facilitator. Monitoring insures that data on each health priority is reviewed and evaluated periodically; and strategies are adjusted as needed. The Socio-Ecological Model prioritizes strategies that change policy, the environment, or systems. These types of strategies have higher impact and are more sustainable.
The Socio-Ecological Model is represented on the right and shows the five levels of community involvement in changing individual health behavior. Each level builds off of the other and works together. When planning a campaign that will change behavior, those in charge want to think about who the change will reach and how many people could be affected. If change occurs at the community or public policy level, more people are guaranteed to see and experience the new change.

The symbols below represent each level of the model. Refer to the action plans starting on page 15 for more information on what level of change is being reached in each identified strategy.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
</table>
| ![Individual](image) | Increase the individual’s knowledge and influence his or her attitudes and beliefs regarding a health issue. | • Attending a food demonstration cooking class.  
• Provide mental health training.  
• Join a quit smoking class. |
| ![Interpersonal](image) | Individual behavior change by affecting social and cultural norms and overcoming individual-level barriers such as friends and family. | • Make sure healthy foods are available to eat at home.  
• Set limits on screen time.  
• Brushing your teeth with your child. |
| ![Organizational](image) | Individual behavior change by influencing organizational systems and policies. | • Implementing a evidence-based program into a school curriculum.  
• Develop a healthy snack policy at work.  
• Provide opportunity to exercise during break at work. |
| ![Community](image) | Facilitate individual behavior change by leveraging resources and participation of community-level institutions. | • Creating a community garden.  
• Implementing a point-of-purchase prompt program in grocery stores.  
• Promote a safe ride to schools program. |
| ![Policy](image) | Federal, state, local, and tribal government agencies may support policies that promote healthy behavior. | • Taxing soda.  
• Increase Medicaid reimbursement for dental care.  
• Prohibiting the use of e-cigarette’s in public places. |

Source: Centers of Disease Control and Prevention
Overarching Priorities: Social Determinants of Health and Health Equity

Goal 1: Increase Youth Mentoring – (Big Brothers Big Sisters, Kinship, etc.).

Goal 2: Increase efforts to pursue the implementation of a “HUB Model” in Lincoln County.

Priority: Mental Health and Substance Abuse

Goal 1: Increase preventative education and outreach that increases knowledge, strengthens families, builds life skills and increases resiliency.

Goal 2: Increase outreach and programming for those identified as high risk in the community.

Goal 3: Become a community that supports recovery.

Goal 4: Merge the Lincoln County Mental Health Coalition and the Lincoln County Drug Free Coalition.

Priority: Nutrition and Healthy Foods

Goal 1: Increase access to nutritious foods.

Goal 2: Improve nutrition- eating more nutritious foods and beverages choices.

Priority: Oral (Dental) Health

Goal 1: Increase awareness, knowledge and oral/dental behaviors and their effect on “whole body” health.

Goal 2: Increase utilization of oral/dental health services and resources.
By 2020, assure that populations of differing races, ethnicities, sexual identities and orientations, gender identities and educational or economic status, and those with disabilities, have access to comprehensive, patient-centered health services that are safe, effective, affordable, timely, coordinated and navigable.

By 2020, state and local governments will develop and implement policies and programs that improve social cohesion and social support for all by reducing racism and other forms of decimation; creating health-enhancing environments at home, in the workplace and throughout the community; and promoting the values of diversity and social connectedness.

Increase the proportion of adolescents who have an adult in their lives with whom they can talk about serious problems.

Increase the proportion of parents who use positive communication with their child.

Proportion of children aged 0-17 years living with at least one parent employed year round, full time.

Proportion of persons living in poverty.

Proportion of households that experience housing cost burden.

Increase the proportion of adults with disabilities who report sufficient social and emotional support.

Proportion of high school completers who were enrolled in college the October immediately after completing high school.

Proportion of children aged 0-17 years who have ever lived with a parent who has served time in jail or prison.

Note: National and State Health Plan will be updated in 2020 thus goals and objectives might change.

Local Assets and Resources

- Free medical clinic and federally qualified dental clinic
- Affordable housing
- Clean environment
- Good schools
- Good transportation in the City of Merrill
- Strong volunteer network and strong relationships
- Organizations have received community grants
- Large number of non-profit services
- Access to primary health care, 4 medical clinics
# Overarching Priority: Social Determinants and Health Equity

## Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of teens and young adults ages 16-24 who are neither working nor in school.</td>
<td>14%</td>
<td>10% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Adolescents having an adult in their lives with whom they can discuss serious problems (percent, high school students).</td>
<td>65.6% (2017)</td>
<td>71.6% (WI)</td>
<td>Youth Risk Behavior Survey (Lincoln County and WI)</td>
</tr>
<tr>
<td>Percentage of children that live in a household headed by single parent.</td>
<td>28% (2018)</td>
<td>20% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Percentage of adults reporting fair or poor health (age-adjusted).</td>
<td>13% (2018)</td>
<td>10% (Lincoln)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Percentage of population living below the Federal Poverty Line (FPL).</td>
<td>10% (2018)</td>
<td>8% (Lincoln)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Percentage of children under age 18 in poverty.</td>
<td>15% (2018)</td>
<td>12% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Percentage of population ages 16 and older unemployed but seeking work.</td>
<td>4.5% (2018)</td>
<td>3.2% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
</tbody>
</table>
Social Determinants and Health Equity Action Plan

Goal 1: Advocate and support the development and implementation of programs and policies to reduce inequities in social determinants of health such as social, environmental conditions, economic, and in health outcomes.

Objective 1: Increase efforts to pursue the implementation of a “Community Navigator HUB Model” in Lincoln County

Evidence Based Strategy Source: County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Community Navigator" /></td>
<td>Assess current resources provided to Lincoln County residents through a case management approach.</td>
<td># of organizations assessed, Report of findings</td>
</tr>
<tr>
<td><img src="image" alt="Case Management Hub" /></td>
<td>Increase education on case management hub.</td>
<td># of education sessions, % of increase in knowledge</td>
</tr>
<tr>
<td><img src="image" alt="Plan Development" /></td>
<td>Develop a plan to create a community navigator hub.</td>
<td>Completed plan</td>
</tr>
<tr>
<td><img src="image" alt="Funding" /></td>
<td>Secure funds to implement a case management hub including a sustainability plan.</td>
<td># of funds secured</td>
</tr>
<tr>
<td><img src="image" alt="Evaluation" /></td>
<td>Evaluate effectiveness of the community navigator hub.</td>
<td>Evaluation results</td>
</tr>
</tbody>
</table>

Responsible Partners: Healthy People Lincoln County Partnership Committee

Objective 2: Increase Youth Mentoring – (Big Brothers Big Sisters, Kinship of Tomahawk, etc.)

Evidence Based Strategy Source: County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Youth Mentorship" /></td>
<td>Access current efforts in enhancing youth mentorship in Lincoln County.</td>
<td># of organizations assessed, Report of findings</td>
</tr>
<tr>
<td><img src="image" alt="Advocacy" /></td>
<td>Advocate for comprehensive youth mentorship program that addresses current gaps.</td>
<td># of advocacy events</td>
</tr>
<tr>
<td><img src="image" alt="Resource Advocacy" /></td>
<td>Advocate for resources to implement a youth mentorship program.</td>
<td># of advocacy events</td>
</tr>
<tr>
<td><img src="image" alt="Promotion" /></td>
<td>Promote youth mentorship programs within HPLC partnership agencies.</td>
<td># of outreach/media events</td>
</tr>
</tbody>
</table>

Responsible Partners: Healthy People Lincoln County Partnership Committee

Socio-Ecological Model “Level of Change” Key

- Individual
- Interpersonal
- Organizational
- Community
- Policy
Priority: Mental Health and Substance Abuse

Behavioral Health

Refers to a person’s state of well-being and how their behaviors affect their overall health and wellness. Mental and substance abuse disorders fall under the umbrella of behavioral health.

Mental Health

Mental health includes a person's emotional, psychological, and social well-being. It affects how an individual thinks, feels, and acts. It also helps determine how a person handles stress, relates to others, and make choices. When a person is mentally healthy, she/he realizes their own abilities, can cope with normal stresses of life, can work productively and contributes to their community.

- Centers for Disease Control and Prevention

Substance Abuse

Substance abuse is the use or dependence on an addictive substance, including alcohol and drugs. Drug addiction is a chronic disease characterized by drug seeking and use that is compulsive, or difficult to control, despite harmful consequences. Substance abuse is associated with social/family disruptions, financial problems, loss of productivity at work and at school, violence and poor health outcomes.

- National Institute on Drug Abuse

Alignment with State and National Plans

- Reduce suicides and suicide attempts in Wisconsin.
- Increase and enhance protective factors.
- Reduce smoking and obesity among people with mental health disorders.
- Reduce disparities in suicide and mental health disorders for disproportionately affected populations.
- Reduce the rate of depression, anxiety and emotional problems among children with special health care needs.
- Reduce the suicide rate.
- Reduce the proportion of adolescents and adults that experience depression.
- Increase depression screening by primary care providers.

Note: National and State Health Plan will be updated in 2020 thus goals and objectives might change.

Local Assets and Resources

Mental Health

- Lincoln County Mental Health Coalition
- Mental health counselors in schools
- Lincoln County Mental Health Resource Guide
- North Central Health Care
- Medical College of WI Child Psychiatry
- Medical College of WI Periscope Project
- Trainings on ACEs/Trauma Informed Care
- Crisis Intervention Team Training
- Psychiatry residency program in Wausau

Substance Abuse

- Lincoln County Drug Free Coalition
- DARE Program
- Medication Drop Box Program
- Increase in canine units
- Increase in first responders carrying Narcan
- Merrill Safe Ride Home
- Local youth drug and alcohol data
- Social Norms Campaign
### Priority: Mental Health and Substance Abuse

#### Mental Health Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of high school students who attempted suicide requiring medical attention (1 or more times in the last year).</td>
<td>2.2% (2017)</td>
<td>1.7% (HP2020)</td>
<td>Youth Risk Behavior Survey (Lincoln &amp; U.S.)</td>
</tr>
<tr>
<td>Percent of high school students who reported feeling so sad or hopeless almost every day for 2 or more weeks in a row that they stopped doing some of their usual activities in the last year.</td>
<td>34.1% (2017)</td>
<td>27% (WI 2017)</td>
<td>Youth Risk Behavior Survey (Lincoln &amp; WI)</td>
</tr>
<tr>
<td>Average number of mentally unhealthy days reported in the past 30 days by adults.</td>
<td>3.5 (2018)</td>
<td>1.7% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Percent of adults that report 4 or more Adverse Childhood Experiences (ACEs).</td>
<td>22% (2011-2015)</td>
<td>10% (Top WI 2011-2015)</td>
<td>WI Child Abuse and Neglect Prevention Board</td>
</tr>
</tbody>
</table>
## Priority: Mental Health and Substance Abuse

### Substance Abuse Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of high school students who drank alcohol at least 1 day during the last 30 days</td>
<td>33% (2016)</td>
<td>30.4% (WI 2017)</td>
<td>Lincoln County Social Norms Survey, WI Youth Risk Behavior Survey</td>
</tr>
<tr>
<td>Percent of students who used an electronic vapor product at least one day during the last 30 days</td>
<td>23% (2016)</td>
<td>11.6% (WI 2017)</td>
<td>Lincoln County Social Norms Survey, WI Youth Risk Behavior Survey</td>
</tr>
<tr>
<td>Percent of students who used marijuana one or more times during the last 30 days</td>
<td>18% (2016)</td>
<td>16% (WI 2017)</td>
<td>Lincoln County Social Norms Survey, WI Youth Risk Behavior Survey</td>
</tr>
<tr>
<td>Prevalence of binge drinking among adults (age 18 and older)</td>
<td>20% (2012-2014)</td>
<td>12% (Top *Northwoods Coalition Performer)</td>
<td>Northwoods Coalition Epidemiological Profile</td>
</tr>
<tr>
<td>Rate of opioid-related hospitalizations (per 1,000 population)</td>
<td>1.3 (2013-2014)</td>
<td>.4 (Top *Northwoods Coalition Performer)</td>
<td>Northwoods Coalition Epidemiological Profile</td>
</tr>
<tr>
<td>Rate of deaths related to alcohol and other substances (per 100,000 population)</td>
<td>269.8 (2017)</td>
<td>179.3 (WI 2017)</td>
<td>Wisconsin Public Health Profile 2017; Lincoln County</td>
</tr>
<tr>
<td>Rate of drug law arrests (per 100,000 population)</td>
<td>390 (2014)</td>
<td>35 (Top *Northwoods Coalition Performer)</td>
<td>Northwoods Coalition Epidemiological Profile</td>
</tr>
</tbody>
</table>

Mental Health and Substance Abuse Action Plan

**Goal 1:** Increase preventative education and outreach that increases knowledge, strengthens families, builds life skills (coping, decision making, problem solving, conflict resolution, etc.) and increase resiliency.

**Objective 1:** By December 31, 2023, the Coalition will publish 2 Lincoln County Youth Health Profiles that include Social Norms Survey and Youth Risk Behavior Survey data from Merrill and Tomahawk School Districts.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies Responsible</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
|                 | Administer and distribute information from the middle and high school Social Norms Survey and Youth Risk Behavior Survey. | • # of students surveyed  
• # of Youth Health Profiles distributed  
• # of presentations  
• # participants |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW Extension, Merrill Area Public Schools, and Tomahawk School District

**Objective 2:** By December 31, 2023, the Coalition will implement 1 public awareness campaign annually in Lincoln County.

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies Responsible</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
|                 | Implement public awareness campaigns (Dose of Reality, kNOW Meth, Hopeline, Suicide Prevention Lifeline, Social Norms, Know! Parent Tips, ACEs/Trauma Informed Care, etc.). | • # of billboards  
• # of newspaper and radio ads  
• # reached via social media  
• # posters/cards  
• # aware of campaigns via surveys |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW Extension, Merrill Area Public Schools, Tomahawk School District, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members

**Objective 3:** By December 31, 2023, the Coalition will implement 2 community events in Lincoln County.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
|                 | Provide community presentations, town hall events and summits regarding mental health, substance abuse and other addictions (e.g. gambling, gaming, hoarding, etc.) | • # of events  
• # of participants  
• # that increased knowledge |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW Extension, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Northwoods Veterans Auxiliary, TB Scott Free Library, Tomahawk Public Library and interested coalition members

---

**Socio-Ecological Model “Level of Change” Key**

- **Individual**
- **Interpersonal**
- **Organizational**
- **Community**
- **Policy**
**Mental Health and Substance Abuse Action Plan**

**Objective 4: By December 31, 2023, the Coalition will implement 4 community trainings annually in Lincoln County.**

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies Responsible</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![people icon]   | Provide evidence based trainings to increase skills of residents, coalition members and professionals (QPR, Mental Health First Aid, Taking Care of You, Naloxone Training, etc.). | • # of trainings  
• # of participants  
• # that increased knowledge  
• # that have applied skills  
• # that have used resources |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW-Extension, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, and Coalition Members with Training Certifications

**Objective 5: By December 31, 2023, the Coalition will provide Merrill and Tomahawk School Districts with 2 evidence based strategies to promote mental health and prevent substance abuse among youth.**

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies Responsible</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![people icon]   | Provide school administration and counselors with evidence based strategies and resources to support preventative education related to mental health and substance abuse. | • # of meetings  
• # of resources provided  
• # of strategies implemented/results from evaluation tools |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW-Extension, HAVEN, Merrill Area Public Schools, Tomahawk School District, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, and interested coalition members

**Explore opportunities to educate school boards on the community needs and efforts of the coalition.**  

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW-Extension, HAVEN, Merrill Area Public Schools, Tomahawk School District, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, and interested coalition members
## Mental Health and Substance Abuse Action Plan

### Goal 2: Increase outreach/programming for those identified as high risk in the community.

#### Objective 1: By December 31, 2023, the Coalition will implement 2 family-based education opportunities to identified families at higher risk in the community.

**Evidence Based Strategy Source:** County Health Rankings “What Works r Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![Family and School](image) | Implement the Families and Schools Together (FAST) Program in Merrill and Tomahawk. | - # of families served  
- Evaluation results from program participants  
- Follow up evaluation results to see if skills are applied |

**Responsible Partners:** Merrill Area Public School, Tomahawk School District, Kinship of Tomahawk, Big Brothers and Big Sisters and interested coalition members

| ![Family and School](image) | Implement the Strengthening Families Program Merrill and Tomahawk. | - # of families served  
- Evaluation results from program participants  
- Follow up evaluation results to see if skills are applied |

**Responsible Partners:** Merrill Area Public Schools, Tomahawk School District, Lincoln County UW Extension

#### Objective 2: By December 31, 2019, the Coalition will develop a substance abuse and mental health resource guide and distribute throughout Lincoln County.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![Family and School](image) | Develop a guide for substance abuse and mental health resources in our area that is available via print and electronically (group resources by crisis, counseling and support groups). | - # that report resources are helpful via community pilot survey  
- # brochures, posters and cards  
- # of crisis professionals that indicate resource meets their needs |

**Responsible Partners:** Lincoln County Health Department, Lincoln County–UW-Extension, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, and interested coalition members

#### Objective 3: By December 31, 2023, there will be a 10% increase in number of inquiries to 211 from Lincoln County residents.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![Family and School](image) | Promote 211 (free resource helpline) and increase organization that are included. | - # of Lincoln County agencies listed  
- # of inquiries from Lincoln County  
- List of common inquiries |

**Responsible Partners:** Merrill Area United Way, Lincoln County Interagency Members and interested coalition members
**Priority: Mental Health and Substance Abuse Action Plan**

**Goal 3: Become a community that supports recovery.**

**Objective 1: By December 31, 2023, Lincoln County will have 10 individuals trained and active as recovery coaches.**

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![People] ![Building] ![Building] | Provide education on the role of recovery coaches in the community. | • # of presentations  
• # of participants |

**Responsible Partners:** HAVEN, North Central Health Care, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members

| ![People] ![Building] ![Building] | Recruit community members to be trained as recovery coaches. | • # recruited  
• # trained |

**Responsible Partners:** HAVEN, North Central Health Care and interested coalition members

| ![People] ![Building] ![Building] | Collaborate with partners to develop a system for accessing recovery coach services. | • # of community partners  
• # of recovery coach matches  
• evaluations to measure impact of recovery coach match |

**Responsible Partners:** HAVEN, Lincoln County Health Department, North Central Health Care, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Lincoln County Department of Social Services, and interested coalition members

**Objective 2: By December 31, 2023, the Coalition will pursue expansion of additional substance abuse and mental health support groups for individuals and their family members in Lincoln County.**

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| ![People] ![Building] ![Building] | Have representatives from Alcoholics Anonymous, Woods and Waters Narcotics Anonymous, Nar-Anon, North Central Wisconsin Area of Narcotics Anonymous and National Alliance on Mental Illness provide information to start a support group(s) in the county. Consider support options for other addictions (e.g. gambling, gaming, eating disorders, hoarding, etc.) | # of educational resources received  
# of presentations |

**Responsible Partners:** North Central Health Care, Lincoln County Department of Social Services, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members
Mental Health and Substance Abuse Action Plan

### Evidence Based Strategy Source: County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| 🆕               | Recruit individuals in the community to lead support groups. | • # of community members recruited  
• # of support groups created |

**Responsible Partners:** North Central Health Care, Lincoln County Department of Social Services, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members

| 🆕               | Promote support groups available in the county. | • # of participants |
| 🆕               | Meet with elected officials and legislators and/or involve in local events to discuss emerging mental health and substance abuse issues and needed policy changes. | • # of meetings held  
• # of issues/policies discussed  
• # of actions taken |

**Responsible Partners:** Lincoln County Health Department and Lincoln County UW Extension
### Mental Health and Substance Abuse Action Plan

**Goal 4: Merge the Lincoln County Mental Health Coalition and the Lincoln County Drug Free Coalition.**

#### Objective 1: By July 31, 2018, the Coalition will begin meeting quarterly.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
|                 | Coalition will hold an organizational meeting in July to establish membership of the newly merged coalition. | # of participants  
# of coalition members |

**Responsible Partners:** Lincoln County Health Department and Lincoln County—UW Extension

#### Objective 2: By December 31, 2018, the Coalition will have name, mission statement and organizational structure.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
|                 | Develop a Coalition Leadership Team to establish coalition name, mission statement, and organizational structure. | # of leadership team members  
# of meetings  
Completed name, mission and organizational structure |

**Responsible Partners:** Lincoln County Health Department, Lincoln County UW Extension  
Kinship of Tomahawk, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members

#### Objective 3: By December 31, 2020, the Coalition will establish a marketing and branding presence in Lincoln County.

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Develop the coalition marketing and branding plan.</td>
<td>Plan developed</td>
</tr>
</tbody>
</table>

**Responsible Partner:** Lincoln County Health Department, Lincoln County—UW Extension,  
Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Local Marketing Professional and interested coalition members

|                  | Implement the coalition marketing and branding plan. | Coalition logo  
Website/social media  
Brand community event displays (health fairs, Community Night Out, Children’s Festival, etc.)  
Brand resources and materials that the coalition provides  
# of residents aware of coalition |

**Responsible Partners:** Lincoln Count Health Department, Lincoln County - UW Extension,  
Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Law Enforcement, HAVEN, Local Marketing Professional and interested coalition members
Nutrition is the intake of food, considered in relation to the body’s dietary needs. Good nutrition – an adequate, well balanced diet combined with regular physical activity – is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. - World Health Organization

Alignment with State and National Plans

- By 2020, people in Wisconsin will eat more nutritious foods and drink more, nutritious beverages through increased access to fruits and vegetables, decreased access to sugar-sweetened beverages and other less nutritious foods, and supported, sustained breastfeeding.
- By 2020, all people in Wisconsin will have ready access to sufficient nutritious, high-quality, affordable foods and beverages.
- Reduce household food insecurity and in doing so reduce hunger.
- Increase the contribution of fruits to the diets of the population aged 2 years and older.
- Increase the variety and contribution of vegetables to the diets of the population aged 2 years and older.
- Increase the proportion of physician office visits that include counseling or education related to nutrition or weight.

Note: National and State Health Plan will be updated in 2020 thus goals and objectives might change.

Local Assets and Resources

- Lincoln County Nutrition Coalition
- UW-Extension nutrition classes (Foodwise)
- Community gardens
- Aging and Disability Resource Center
- Farmers markets
- EBT accepted at farmers markets

- Food pantries in Merrill and Tomahawk
- Kids Backpack Program
- Healthy options in school lunches
- WIC (374 children enrolled), also offer Fit Families Program
- Free and reduced lunch at schools
## Priority: Nutrition and Healthy Foods

### Youth Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Obesity: youth ages 5-17 who visited a participating health care system in 2015 and 2016 with a BMI &gt;95 percentile</td>
<td>20.2% (54452)*</td>
<td>14.8% (WI)</td>
<td>Wisconsin Health Atlas 2015-2016</td>
</tr>
<tr>
<td></td>
<td>15.3% (54487)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18% (54435)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24.6% (54442)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children on Food Share (food stamps)</td>
<td>1672; 31% (2017)</td>
<td>386,366; 30% (WI 2017)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td>Percentage of high school students who did not eat vegetables in the past 7 days</td>
<td>12.4% (2017)</td>
<td>6.7% (U.S. 2015)</td>
<td>Youth Risk Behavior Survey 2017 (Lincoln County and US)</td>
</tr>
<tr>
<td>Percentage of high school students who did not eat fruit in the past 7 days</td>
<td>8.3% (2017)</td>
<td>5.2% (U.S. 2015)</td>
<td>Youth Risk Behavior Survey 2017 (Lincoln County and US)</td>
</tr>
</tbody>
</table>

### Adult Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Obesity ages 18+ who self report a BMI of &gt;30</td>
<td>29% (2018)</td>
<td>26% (Top U.S. 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
<tr>
<td>Adult Obesity: adults ages 18+ who visited a participating health care system in 2015 and 2016 with a BMI &gt;30</td>
<td>49.2% (54452)*</td>
<td>41.2% (WI)</td>
<td>Wisconsin Health Atlas 2015-2016</td>
</tr>
<tr>
<td></td>
<td>44.6% (54487)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>51.6% (54435)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>49.6% (54442)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Insecurity</td>
<td>11% (2018)</td>
<td>8% (Top WI, 2018)</td>
<td>County Health Rankings and Roadmaps</td>
</tr>
</tbody>
</table>

* Lincoln County Zip Codes: Merrill (54452), Tomahawk (54487), Gleason (54435), Irma (54442)
## Nutrition and Healthy Foods Action Plan

### Goal 1: Increase access to nutritious foods

#### Objective 1: By December 31, 2023, the Nutrition Coalition will promote and implement 2 strategies to increase access to healthy foods for Lincoln County Students in school.

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![House]</td>
<td>Promote utilization and or assist in creating School Food Pantries (example screening students and schools for needs such as amount of students that are food insecure) UW Extension.</td>
<td>• # of safe and healthy food pantries project evaluations completed</td>
</tr>
</tbody>
</table>

**Responsible Partner:** Lincoln County UW Extension

<table>
<thead>
<tr>
<th>![Person], ![House]</th>
<th>Promote utilization and or assist in creating school gardens (example hydroponics).</th>
<th>• # of school gardens initiated and maintained.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• # of pounds of produce grown in schools.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of grants received.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of programs implemented.</td>
</tr>
</tbody>
</table>

**Responsible Partners:** Lincoln County UW Extension and Lincoln County Health Department

| ![House], ![Person] | Pursue funding to increase access to nutritious foods at school (example Farm to school, grant writing). | • # of grants applied for and received.             |

**Responsible Partners:** Lincoln County UW Extension and Lincoln County Health Department, Ascension Good Samaritan Hospital and Ascension Sacred Heart Hospital

### Objective 2: By December 31, 2023, the Nutrition Coalition will promote and implement 2 strategies to increase access to healthy foods for Lincoln County Community Members

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![House]</td>
<td>Evaluate and assist local food pantries to increase healthy food options.</td>
<td>• # of safe and healthy food pantries project evaluations completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of healthy food changes implemented</td>
</tr>
</tbody>
</table>

**Responsible Partner:** Lincoln County - UW Extension

| ![Person]        | Develop and distribute a nutrition access guide.                             | • Track # of access guides given out and to whom.               |

**Responsible Partner:** Lincoln County Health Department

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**Socio-Ecological Model “Level of Change” Key**

- **Individual**
- **Interpersonal**
- **Organizational**
- **Community**
- **Policy**

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Attachment 10: CHAs and CHPs
### Nutrition and Healthy Foods Action Plan

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✨ 🌱 🌻</td>
<td>Implement gardening events (example Live Sustainable Workshops, Children’s Fest)</td>
<td>• # of educational events held on gardening</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Support given to local community gardens</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong> Ascension Good Samaritan Hospital, Lincoln County Health Department, and Lincoln County-UW Extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>🌱 🌼 🌿</td>
<td>Promote access to affordable, healthy food options (example coupons for farmer’s market, grocery stores)</td>
<td>• # coupons utilized</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong> Ascension Good Samaritan Hospital and HealthFirst (WIC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>🌱 🍎 🍓</td>
<td>Develop a food gleaning toolkit for local restaurants to donate leftover foods (example, local food pantries, breaking bread)</td>
<td>• # of toolkits distributed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of new food retailers participating with food gleaning</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong> Lincoln County Health Department and Ascension Good Samaritan Hospital</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective 3:** By December 31, 2023, the Nutrition Coalition will promote and implement 1 strategy to increase access to healthy foods for Lincoln County Worksites

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✨ 🌱 🌻</td>
<td>Promote and or assist in creating healthier food behavior by employees at worksites</td>
<td>• # of promotions at worksites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of worksites the develop policies on healthier options for work meetings or lunches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # of employees reporting a change of behavior</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong> Lincoln County Health Department, Ascension Good Samaritan Hospital, and Ascension Sacred Heart Hospital</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Goal 2: Improve nutrition- eating more nutritious foods and beverages choices

**Objective 1:** By December 31, 2023, the Nutrition Coalition will promote and implement 2 strategies to improve Nutrition among Lincoln County Students in School

**Evidence Based Strategy Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✨ 🌱 🌻</td>
<td>Education to school administration on the benefits of healthy school snacks</td>
<td>• # of presentations to school administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase perceived benefits of healthy snacks in schools among school administration staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Attendance at school wellness policy meetings</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong> Lincoln County Health Department, Lincoln County—UW Extension, Ascension Good Samaritan Hospital and Ascension Sacred Heart Hospital</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Objective 2: By December 31, 2023, the Nutrition Coalition will promote and implement 2 strategies to improve Nutrition among Lincoln County Community Members

### Evidence Based Strategy Source: County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>🏤🔍🏠</td>
<td>Education on improving healthier eating habits at school (example taste testing).</td>
<td>• # of educational presentations provided to students</td>
</tr>
</tbody>
</table>

**Responsible Partners:** Lincoln County UW Extension and HealthFirst (WIC)

### Strategies:

- **Education on healthy cooking techniques through cooking demonstrations.**
  - • # of demonstrations completed
  - • Increased knowledge of healthy cooking styles

**Responsible Partners:** Lincoln County—UW Extension, Ascension Good Samaritan Hospital and HealthFirst (WIC)

- **Medical Providers will implement healthy nutrition educational messages at patient visits (example promote formation of breastfeeding support group, 5210 (http://5210letsgo.com), nutrition prescriptions, and displays).**
  - • # of providers implementing a strategy

**Responsible Partners:** Ascension Good Samaritan Hospital and HealthFirst (WIC)
Priority: Oral (Dental) Health

Oral (Dental) health is essential to general health and quality of life. It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing. - World Health Organization

Alignment with Local, State and National Plans

- Assure Access to ongoing oral health education and comprehensive prevention, screening and early intervention, and treatment of dental disease in order to promote healthy behaviors and improve and maintain oral health.
- Access to effective and adequate oral health delivery systems, utilizing a diverse and adequate workforce, for populations if higher risk
- Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth
- Reduce the proportion of children, adolescents, and adults with untreated dental decay
- Increase proportion of children, adolescents and adults who used the oral health care system in the past year
- Increase the proportion of adults and low-income children and adolescents who received any preventive dental service during the past year
- Increase the proportion of children and adolescents who have received dental sealants on their molar teeth

Note: National and State Health Plan will be updated in 2020 thus goals and objectives might change.

Local Assets and Resources

- Oral Health Coalition – Seal A Smile Program in schools, Annual Sugar Out Day, Affordable Dental Care Guide, Adult Dental Awareness Campaign
- Bridge Community Dental Clinic
- Head Start Fluoride Varnish Program
- Ascension Good Samaritan Hospital Tooth Fairy Fund
- Marshfield Clinic Dental Clinic
- Fluoride Supplement Program
### Priority: Oral (Dental) Health

#### Key Indicators

<table>
<thead>
<tr>
<th>Key Indicator</th>
<th>Lincoln</th>
<th>Target</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percent of the population (age 2+) that did not have a dental visit in the past year.</strong></td>
<td>49% (2018)</td>
<td>26% overall (WI 2018)</td>
<td>County Health Rankings</td>
</tr>
<tr>
<td><strong>Percent of untreated dental decay in children aged 3-5 years</strong></td>
<td>26.4% (WI 2013)</td>
<td>21.4% (U.S. 2013)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td><strong>Percent of children aged 3-5 years that experience dental caries (tooth decay)</strong></td>
<td>35.7% (WI 2013)</td>
<td>30% (U.S. 2013)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td><strong>Percent of untreated dental decay in children aged 6-9 years</strong></td>
<td>20.1% (WI 2013)</td>
<td>18% (Lincoln)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td><strong>Percent of children aged 6-9 who have dental sealants on one or more permanent first molar teeth</strong></td>
<td>50.8% (WI 2013)</td>
<td>28.1% (U.S. 2013)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td><strong>Percent of untreated dental decay in adults aged 35-44</strong></td>
<td>27.8% (U.S. 2013)</td>
<td>25% (HP2020)</td>
<td>Wisconsin Department of Health Services</td>
</tr>
<tr>
<td><strong>Rate of oral health emergency department visits (non-traumatic) per 100,000</strong></td>
<td>140 (2014)</td>
<td>Decrease Visits</td>
<td>Environmental Public Health Tracker</td>
</tr>
</tbody>
</table>
## Oral (Dental) Health Action Plan

### Goal 1: Increase awareness, knowledge and oral/dental behaviors and their effects on "whole body" health

**Objective 1:** By December 31, 2023, Oral Health Coalition will promote and implement 4 evidence based strategies to increase awareness and knowledge of effect of dental behaviors for Lincoln County Residents.

**Evidence Based Strategies Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluations</th>
</tr>
</thead>
</table>
| ![Individual](image) ![House](image) ![School](image) | Continue/Expand oral health education campaigns for Lincoln County school age children (example, Sugar Out Day). | • # of students participated  
• # of schools participated  
• Evaluation results from program participants  
• % increase knowledge of students participated |

**Responsible Partners:** Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, Oak Park Dental, Merrill Area Public Schools, and Tomahawk School District

| ![Individual](image) ![House](image) ![School](image) | Continue/Expand oral health education campaign in Community (example, Sugar Out Day). | • # of community members participated  
• # of businesses/employees participated |

**Responsible Partners:** Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, and Oak Park Dental

| ![Individual](image) ![House](image) ![School](image) ![Building](image) | Utilize Oral Health Displays to promote good oral hygiene at community events/organizations/worksites (example, at cooking demonstrations). | • # of events  
• # of participants  
• # of displays utilized |

**Responsible Partners:** Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, and Oak Park Dental

| ![Individual](image) ![House](image) ![School](image) | Continue/Expand Oral Health Social Marketing Campaign (example, billboards, social media ads). | • # messages  
• # information requests |

**Responsible Partners:** Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, and Oak Park Dental

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**Socio-Ecological Model “Level of Change” Key**

- **Individual**
- **Interpersonal**
- **Organizational**
- **Community**
- **Policy**
**Objective 2: By December 31, 2023, Oral Health Coalition will develop 4 partnerships with local Medical and Dental Clinics to Promote Development of Early/Continuing Positive Oral Health Behaviors**

**Evidence Based Strategies Sources:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
<th>Strategies</th>
<th>Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medical Providers will implement oral health behavior message at well child visits.</td>
<td>• # messages implemented by medical providers at well child visits  &lt;br&gt; • # participating partners</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong></td>
<td>Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, Oak Park Dental and local clinics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Utilized Oral Health Displays (example medical and dental clinics, ED waiting areas).</td>
<td>• # displays  &lt;br&gt; • # participating partners</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong></td>
<td>Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, Oak Park Dental and local clinics</td>
<td></td>
</tr>
</tbody>
</table>

**Goal 2: Increase utilization of oral/dental health services and resources**

**Objective 1: By December 31, 2023, the Oral Health Coalition will promote and implement 3 evidence based strategies to increase usage of oral/dental resources for Lincoln County Residents.**

**Evidence Based Strategies Source:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continue/Expand Dental Seal A Smile Program to Lincoln County Elementary and Middle Schools.</td>
<td>• # students participated  &lt;br&gt; • # schools participated  &lt;br&gt; • # sealants applied  &lt;br&gt; • # urgent referrals/follow-up</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong></td>
<td>Lincoln County Health Department, Merrill Area Public Schools, Tomahawk School District, Ascension Good Samaritan, Ascension Sacred Heart and interested coalition members</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continue/Expand Head Start Fluoride Varnishing Program.</td>
<td>• # students participated  &lt;br&gt; • # students that complete 3 varnished during the school year.</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong></td>
<td>Lincoln County Health Department, Pine River School for Young Learners and Tomahawk Head Start</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expand Fluoride Supplement program to Pine River School for Young Learners rural students/families.</td>
<td>• # families/students participated  &lt;br&gt; • # of reoccurring participants</td>
</tr>
<tr>
<td><strong>Responsible Partners:</strong></td>
<td>Lincoln County Health Department and Pine River School for Young Learners</td>
<td></td>
</tr>
</tbody>
</table>
### Objective 2: By December 2023, the Oral Health Coalition will promote and recruit 2 partners to participate/support the Oral Coalition mission and goals.

**Evidence Based Strategies Sources:** County Health Rankings “What Works for Health”

<table>
<thead>
<tr>
<th>Level of Change</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Explore opportunitites to involve other dental professionals/clinics.</td>
<td># new partners/clinics</td>
<td># contacts made</td>
</tr>
<tr>
<td>Develop and distribute a guide for Oral/Dental Health resources that are available in Lincoln County.</td>
<td># report resources are helpful via community pilot survey</td>
<td># brochures distributed</td>
</tr>
</tbody>
</table>

**Responsible Partners:**
- Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital and interested coalition members
- Lincoln County Health Department, Ascension Good Samaritan Hospital, Ascension Sacred Heart Hospital, Bridge Community Dental Clinic, and Oak Park Dental
Lincoln County Drug Free Communities Coalition
- School-Based Social Norming Campaign
- Mass Media Campaigns Against Underage and Binge Drinking
- Proper Drug Disposal Programs
- Community educational forums
- Parent educational efforts

Lincoln County Mental Health Coalition
- Community Mental Health Trainings and Programs
- Community Education on ACEs and Trauma Informed Care Approaches
- Education and outreach to healthcare providers and education professionals
- Implementation of Youth Risk Behavioral Survey
- NAMI Family Support Group
- Presentations and displays at local events/programs
- Distribution of Mental Health Resource Guide
- HOPELINE Digital and Marketing Campaigns

Lincoln County Nutrition Coalition
- Cooking demonstrations targeting low income
- Implementing EBT at the farmers’ markets
- Point of purchase prompts at convenience and grocery store
- 5210 (5 fruits/vegetables, 2 hours of screen time, 1 hour of exercise, and 0 sugary drinks) program implementation
- Installation of water bottle stations
- Community Garden programs

Lincoln County Oral (Dental) Health Coalition
- Sugar Out Day Education Campaign for students and community members
- Dental sealants for 2nd, 3rd, 6th and 7th grade students
- Tooth Fairy Fund
- Fluoride varnishing
- Organization endorsement of fluoride varnishing
- “Don’t Wait to See a Dentist” billboard campaign
Acknowledgements

The Community Health Improvement Plan is made possible through the contributions of the following individuals and organizations.

**Healthy People Lincoln County Partnership Committee**
*(This committee organized and facilitated all Action Planning Team Meetings.)*
- Ascension Good Samaritan Hospital, Jane Bentz
- Ascension Sacred Heart Hospital, Hope Williams
- UW-Extension - Lincoln County, Debbie Moellendorf
- UW-Extension - Lincoln County, Melissa Yates
- UW-Extension - Lincoln County, Tammy Hansen
- Lincoln County Health Department, Kristi Krombholz
- Lincoln County Health Department, Karen Krueger
- Lincoln County Health Department, Kristin Bath
- Lincoln County Health Department, Shelley Hersil

**Mental Health and Substance Abuse Action Planning Team**
- Ascension Medical Clinic Merrill, Ashley Bolling
- Ascension Sacred Heart Hospital, Carmen Viegut
- Aware and Active Citizens, John Greenwood
- Centre for Wellbeing, Evelyn Lee
- Community Member, Stan Janowiak
- Community Member, Lexi Grzanna
- Community Member, Sydney Harris
- Community Member, Erik Pfantz
- Community Member, Heather Young
- Community Member, Kathy McElhnaney
- Community Member, Dave Vachavake
- Community Member, Lynn Drake
- Community Member, Tom Krembs
- HAVEN, Inc, Nancy Baacke
- Kinship of Tomahawk, Patti Hilgendorf
- Lincoln County Board of Health, Susan Weith
- Lincoln County Department of Social Services, Renee Krueger
- Lincoln County Health Department, Sue Kuber
- Lincoln County Health Department, Marla Reimann
- Medical College of Wisconsin, Gabriella Hangiandreou
- Merrill Area Public Schools, Trina Knospe
- Merrill Area Public Schools, Allie Libby
- Merrill Area Public Schools, Laura Forster
- Merrill Area Public Schools, Bradley Parker
- Merrill Area United Way Board, Tom Zentner
- Merrill Police Department, Tyler Tesch
- North Central Health Care Center, Trisha Kubichek
Acknowledgements

Mental Health and Substance Abuse Action Planning Team Con’t
Northwoods Veterans Post/ VFW Auxiliary Post 1638, Tracey Jopek
Therapy Dog, Mark Mehlos
Tomahawk Head Start, Jewel Towle
Tomahawk School Board, Kay Kissinger Wolf
Tomahawk School District, Debra Eichman
Tomahawk School District, Dawn Huseby

Nutrition and Healthy Foods Action Planning Team
Community Member, Brigid Flood
Bridge Dental Clinic, Jennifer Fryer
Healthfirst, Nichole Kwasny

Oral (Dental) Health Action Planning Team
Bridge Dental Clinic, Georgia Fischer
Bridge Dental Clinic, Jennifer Fryer
Oak Park Dental Clinic, Vicki Rice
Oak Park Dental Clinic, Brigette Hass
Healthy People Lincoln County
www.healthypeoplelincolncounty.org

For more information contact,
Shelley Hersil
Health Officer/Director
Lincoln County Health Department
Shersil@co.lincoln.wi.us
715-536-0307

June 2018
Potential Priority Handouts

What is a CHIP?

A Community Health Improvement Plan, known as a CHIP, is developed by our community based on an assessment of our community’s health. A CHIP contains a set of specific goals, strategies, and measurable data that guides the work of our health department, our partners, and our community.

A CHIP is organized around priority areas that focus on improving the health of our whole community, with special attention on issues of equity.

What is Health Equity?

Health equity refers to attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of disparities in health and health care.

Potential Priority Areas for the 2018 CHIP

<table>
<thead>
<tr>
<th>Healthy Neighborhoods</th>
<th>Supporting Our Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing and Food Systems</td>
<td>Substance Use</td>
</tr>
<tr>
<td>Maternal and Child Health</td>
<td>Mental Health</td>
</tr>
<tr>
<td>Communicable Disease</td>
<td>Trauma and Well-Being</td>
</tr>
</tbody>
</table>
Where the data come from

2017 Community Health Assessment

The data in these handouts come from the 2017 Community Health Assessment. The Community Health Assessment describes the different factors that affect our health, like housing, access to healthy food, jobs, and health care; and the different diseases and conditions that people experience, like cancer, diabetes, mental health conditions, and injuries.

Types of data

The Community Health Assessment draws on data from:

Surveys of community members in Linn County that ask about our health status, opportunities for improving our health, and barriers to good health;

Records of births, deaths, and communicable diseases, and summaries of medical information that describes the different health conditions affecting community members;

Data provided by partners and agencies who work with our community.

How we decided which data to include

The development of the 2017 Community Health Assessment was guided by a steering committee of community and agency partners. These partners reviewed the available data and helped decide where data was missing or which data was not relevant for our community. The steering committee continues to guide our community work through the development of the Community Health Improvement Plan.

Linn County Public Health
Visit www.linncountyhealth.org/ph for updates on the Community Health Improvement Plan
Healthy Neighborhoods

Community health improves when food and physical activity are affordable and accessible to all.

Key Data

18 percent of adults in Linn County eat 5 servings of fruits and vegetables each day.

Only 13 percent of Linn County community members live within walking distance of a grocery store.

33 percent of eighth graders get the recommended amount of exercise, but this proportion decreases over time:

25 percent of eleventh graders get the recommended amount of exercise;

22 percent of adults get the recommended amount of exercise.

Linn County Public Health

Visit www.linncountyhealth.org/ph for updates on the Community Health Improvement Plan
Renters in Linn County are **twice as likely** to struggle to pay their housing costs as owners.

Homelessness in Linn County has doubled in the past six years.

16 percent of Linn County community members experience food insecurity;

26 percent of children experience food insecurity; and

50 percent of Oregon Health Plan (OHP) members experience food insecurity.
The teen pregnancy rate in Linn County is **27 pregnancies per 1,000 women** age 15-19. This has decreased over time, but it is still much higher than the state average of 20 pregnancies.

The teen pregnancy rate among Hispanic and Latina women is higher than overall: **31 pregnancies per 1,000** Hispanic and Latina women age 15-19.

**18 percent** of pregnant women in Linn County smoke cigarettes. The rate is twice as high among young mothers (less than 25 years old) than older mothers.
Linn County 2018 Community Health Improvement Plan

Communicable Disease

*Increase resources for prevention and early treatment of preventable diseases.*

**Key Data**

- The rate of sexually transmitted infections has increased by **68 percent** over the past 10 years.
- **375 cases of chlamydia and 91 cases of gonorrhea** are diagnosed annually per 100,000 people in Linn County.

- **473 STIs in 2017**
- **280 STIs in 2007**

- **66 percent** of two-year-olds in Linn County are fully vaccinated against 11 common childhood diseases.

- **30 percent** of high school students are fully vaccinated against Human Papilloma Virus (HPV).

Linn County Public Health
Visit [www.linncountyhealth.org/ph](http://www.linncountyhealth.org/ph) for updates on the Community Health Improvement Plan

Attachment 10: CHAs and CHPs
Linn County 2018 Community Health Improvement Plan

Supporting our Youth

*Communities create and maintain environment where youth are safe, supported, and respected.*

**Key Data**

29 percent of eighth graders are bullied on a regular basis.

24 percent of eleventh graders have been hit by an adult.

8 percent of eighth graders have been bullied about their sexual orientation or gender identity.

15 percent of eleventh graders have been pressured into having sex.

Linn County Public Health
Visit [www.linncountyhealth.org/ph](http://www.linncountyhealth.org/ph) for updates on the Community Health Improvement Plan
Linn County 2018 Community Health Improvement Plan

Substance Use

Promote communities and environments that reduce youth initiation, decrease use, and support those struggling with addictions.

Key Data

11 percent of eleventh graders smoke cigarettes – a large decrease from 2008.

However, 20 percent of eleventh graders use e-cigarettes; and

22 percent of eleventh graders consume marijuana on a regular basis.

Linn County doctors write 60,000 prescriptions for controlled drugs every year. This is one prescription for every two people in Linn County.

Each year, 60 people are hospitalized and 16 people die from a drug overdose in Linn County.

Linn County Public Health
Visit www.linncountyhealth.org/ph for updates on the Community Health Improvement Plan
Linn County 2018 Community Health Improvement Plan

Mental Health

Communities increase capacity to recognize, respond, and support families and individuals with mental health needs.

Key Data

Nearly 30 percent of Linn County eighth and eleventh graders experience depression each year.

17 percent of Linn County eighth and eleventh graders have considered suicide.

6 percent of Linn County eighth and eleventh graders have attempted suicide.

Close to 30 percent of Oregon Health Plan Members have a diagnosed mental health condition.

Linn County Public Health
Visit www.linncountyhealth.org/ph for updates on the Community Health Improvement Plan
Linn County 2018 Community Health Improvement Plan

Trauma and Well-being

Communities are equipped to recognize and respond to abuse and trauma.

Key Data

The Center Against Rape and Domestic Violence (CARDV) received 6,297 crisis calls in Linn and Benton counties in 2017.

CARDV provided 1,726 emergency shelter nights to Linn County community members in 2017.

40 percent of eleventh graders have lived with a household member who experienced depression or mental illness.

38 percent of eleventh graders have lived with a person experiencing alcoholism.

There were 3,565 reports of child abuse in Linn County in 2017. The rate of reported abuse is 36% higher than in Oregon.

Linn County Public Health
Visit www.linncountyhealth.org/ph for updates on the Community Health Improvement Plan
PURPOSE
This policy describes how Samaritan Health Plans (SHP) and InterCommunity Health Network Coordinated Care Organization (IHN CCO) ensures linguistic interpretive services are available for members in-person and over the phone.

APPLICATION / SCOPE
SHP/IHN CCO Customer Service, Pharmacy Programs, Enrollment, Support Services, Medical Management, Claims, and Appeals and Grievances.

DEFINITIONS
N/A

POLICY
Samaritan Health Plans and IHN CCO ensure members’ linguistic needs are met to support the management and comprehension of their health care. Samaritan Health Plans/IHN CCO contracts with certified and/or qualified interpreter services providers to deliver the largest variety of language options available, including but not limited to: spoken language other than English and sign language for the hearing or speech impaired. All interpreters are capable of translating clinical information effectively in English and the members’ primary language.

Samaritan Health Plans/IHN CCO provides information on linguistic interpreter service options and how to obtain services via member materials, provider manual, and public plan website. Materials are provided to and available for all members and providers.

Samaritan Health Plans/IHN CCO makes in person linguistic interpreter services available to its members and works with providers to ensure that services are delivered when needed.

Samaritan Health Plans requires its contracted providers to meet the requirements of the Affordable Care Act (ACA) regarding linguistic interpretation, 42 CFR 92.201, section 1557.

PROCEDURE
I. SHP/IHN CCO ensures linguistic interpreter service information and instructions for use are available and accessible in member materials and the public plan website for members and providers. Linguistic interpreter services include, but are not limited to: spoken language other than English and sign language for hearing or speech impaired.
II. SHP/IHN CCO staff utilize Cyracom Transparent Language Services when a non-English speaking member, or member’s representative, requires interpretive services during incoming and outgoing phone calls.

III. At the sole discretion of SHP/IHN CCO, staff have the option to utilize Passport to Languages to schedule in-person interpreter services for non-English speaking members when needed for medical or dental appointments if the provider is unable to arrange for such services upon the first scheduled appointment.
   A. IHN CCO ensures the provision of certified or qualified interpreter services for covered coordinated care services including medical, behavioral health, dental (when the CCO or Dental Care Organization (DCO) is responsible for dental care), and home health visits. Interpretive services must be made available for members with hearing or speech impairment and/or in the primary language of non-English speaking members. Interpreter services must be sufficient for the provider to understand the member’s complaint, to make a diagnosis, respond to member’s questions and concerns, and to effectively communicate instructions to the member.

IV. Members who are deaf, hard of hearing, or speech impaired are to be provided with or connected to the State TTY Line at 1-800-735-2900. The State TTY line allows individuals who are hearing or speech impaired to use the telephone to communicate. TTY enables individuals to converse by typing and receiving messages on a computer instead of talking and listening. TTY technology is required at both ends of the conversation in order to communicate.

V. SHP/IHN CCO contracted providers are required to make linguistic interpreter services available for members. If a contracted provider needs assistance with linguistic interpreter services, SHP/IHN CCO will supply linguistic interpreter services for scheduled member appointments until the provider can arrange for interpreter services to be provided.
   A. The provider must be referred to the SHP Provider Engagement Team to address interpreter service requirements.

REFERENCES
I. Oregon Administrative Rule (OAR) 410-141-3220 and
II. Oregon Revised Statutes (ORS) 413.552
III. Patient Protection and Affordable Care Act (PPACA) Section 1311
CC-05: Linguistic Interpreter Services

IV. Affordable Care Act (ACA) Section 1557: 42 CFR 92.201
V. Americans with Disabilities Act Amendment Act (Public Law 110-325, ADAAA)

RESPONSIBLE PARTY
I. Manager of Service Operations and Director of Operations

RELATED DOCUMENTS
I. Interpreter Services Work Instructions for Customer Services Department
II. For material or website translation see SHP Account Management

<table>
<thead>
<tr>
<th>Revision #</th>
<th>Approved By / Date</th>
<th>Policy Owner Approved / Date</th>
<th>Revision Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Operations Policy Committee 11/16/17</td>
<td>Operations Policy Review Committee</td>
<td>Updated with ACA requirements</td>
</tr>
</tbody>
</table>
PURPOSE
This policy describes how the Provider Service Department ensures that all providers interested in contracting with Samaritan Health Plan (SHP) will be evaluated without bias. SHP does not discriminate against providers based on a provider’s treatment of high-risk populations or populations that require costly treatment, indemnification, participation with another plan within SHP, license or certification, and any health care professional acting within their scope of his/her license or certification.

APPLICATION / SCOPE
SHP Provider Services Department

DEFINITIONS
1. **Letter of Interest (LOI):** A form given to all interested providers requesting standard business information that is used to determine the need for contracting.
2. **First Choice Health Network (FCHN):** An extended network of Providers for the Samaritan Choice and Large and Small Group Commercial plan members. Provides additional local provider options, and extends coverage to the following states: Alaska, Idaho, Montana, North Dakota, Oregon, South Dakota, Washington, and Wyoming.
3. **Reliant Behavioral Health (RBH):** A delegated contract for mental health services for the population of Samaritan Choice, Samaritan Advantage, and Large and Small Commercial Group members.
   a. Providers would choose to direct contract with us or contract with us through RBH
4. **CHP:** A network of qualified and fully-credentialed healthcare providers that SHP contracts with to provide our members with a more extensive panel of providers in the following areas of expertise: Acupuncture, Chiropractic, Massage and Naturopathic Medicine
5. **National Plan and Provider Enumeration System (NPPES):** Is a free Public Search directory that provides a registry of all active National Provider Identifier (NPI) records.
6. **Division of Medical Assistance Program (DMAP) Roster:** A list of providers with active Medicaid registration numbers.

POLICY
The SHP Provider Services Manager makes the determination of whether or not to contract with a potential provider/facility based on the need for the provider and access requirements

I. If the SHP Provider Services Manager is unable to make a determination regarding the provider’s participation with one of the Samaritan Health Plans, the provider information or Letter of Interest (LOI) will be reviewed Director of Network Strategy and Contracting.

II. When determining whether to add a potential provider/facility to its panel of providers, considerations surrounding a provider’s treatment of high risk populations or populations that require costly treatment are not used as criteria for determination that provider’s participation.

PROCEDURE

I. LOI is received by the SHP Provider Services Department Provider Services

II. Provider Service Coordinator receives the form and verifies the content of the LOI utilizing external sources.
   A. NPPES,
   B. DMAP roster
   C. CHP roster
   D. First Choice Health Network
   E. Reliant Behavioral Health

III. The SHP Provider Services Manager reviews the LOI or provider information; and makes determination of participation based on SHP’s Network Strategy Determinations.

IV. If participation is not determined by the Manager then the LOI and any provider information will be presented to the Provider Contracting Committee to get additional input.

V. SHP may not discriminate. However, it may do any of the following:
   A. Refuse to grant participation to health care professionals in excess of the number necessary to meet the needs of the plan’s enrollees.
   B. Use different reimbursement amounts for different specialties or for different practitioners in the same specialty.
   C. Implement measures designed to maintain quality and control costs consistent with its responsibilities.
PRC-08 Anti-Discrimination Policy

**REFERENCES**

I. CMS Chapter 6 50 Rev.24, 06-06-03, 42 CFR 422.205

**RESPONSIBLE PARTY**

I. The Provider Services Manager will have the responsibility to ensure the policy is up-to-date throughout the period it is in effect and reviewed and approved by the date indicated.

**RELATED DOCUMENTS**

By signing, the “Department” Director attests and agrees to the policy material in this document.

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<td>Drew Krieg 8/15/17</td>
<td>Tim Brown 8/15/17</td>
<td>Definitions added and Template updated</td>
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<td>Tim Brown</td>
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PURPOSE
This document describes the appropriate use of (Psychiatric) Hospital Holds when less restrictive voluntary services will not meet the medically appropriate needs of the member.

APPLICATION / SCOPE
This policy applies to all Samaritan Health Plan staff supporting access of InterCommunity Health Network Coordinated Care Organization (IHN-CCO) members and contracted mental health providers who serve the IHN-CCO population.

DEFINITIONS
1. Behavioral Health Quality Committee (BHQC): An advisory council to Samaritan Health Plans’ Quality Management Committee. BHQC is made up of representatives from Linn, Benton and Lincoln County Mental Health, representatives from the major mental health providers, representatives from the Patient Centered Primary Care Home (PCPCH), and representatives from IHN-CCO.
2. Civil Commitment process: Initiated when a Notice of Mental Illness (NMI) is filed with the court.
3. Community Mental Health Program Director: The director of the Community Mental Health Program providing services to individuals with mental illness.
4. Custody: The prehearing physical retaining of a person taken into custody pursuant to ORS Chapter 426 by a peace officer, health care facility, state hospital, hospital or nonhospital facility.
5. Designee: Qualified Mental Health Professional (QMHP) designated by the director or a QMHP who is specifically authorized by the county governing body to order a person to be taken into custody.
6. Facility: A state mental hospital, community hospital, residential facility, detoxification center, day treatment facility or such other facility as the Oregon Health Authority determines suitable that provides diagnosis and evaluation, medical care, detoxification, social services or rehabilitation services.
7. (Psychiatric) Hospital Hold: Means the taking of a person into custody by order of a physician pursuant to ORS 426.
8. Medical Appropriateness/Medically Necessary: Defined as accepted health care services and supplies provided by health care entities appropriate to the evaluation and treatment of disease, condition, illness or injury and consistent with the applicable standard of care.
9. Notice of Mental Illness (NMI): Process that begins the Civil Commitment of an individual who is a person with mental illness and is in need of treatment, care or custody.
10. Prehearing period of detention: A period of time calculated from the initiation of custody during which a person may be detained.

POLICY
(Psychiatric) Hospital Holds will be consistent with appropriate rules and statutes as required by the Oregon Health Authority.

RESPONSIBILITIES
1. IHN-CCO, through contracts with regional and statewide health departments and hospital providers will meet the needs established in this policy by providing crisis response, determination by a qualified mental health professional that an individual meets requirements for a (Psychiatric) Hospital Hold and support development of alternatives to involuntary psychiatric care when less restrictive voluntary service will not meet the medically appropriate needs of the member.
2. IHN-CCO will document the use of (Psychiatric) Hospital Holds through the Utilization Review process indicating the date the NMI was signed and reason that the hold was determined necessary.
3. IHN-CCO will collaborate with County Mental Health Departments and other community partners in the monitoring of the use of (Psychiatric) Hospital Holds through regular meetings with BHQC.

PROCEDURE
1. At the time a person alleged to have a mental illness is admitted to or retained in a hospital or nonhospital facility:
   a. A physician, nurse or qualified mental health professional at the hospital or nonhospital facility shall ensure that proper procedures are being followed; pursuing the least restrictive option as clinically appropriate while adhering to the rules and statutes if a (Psychiatric) Hospital Hold is necessary.
   b. A Notice of Mental Illness shall be submitted by a physician or director to the court initiating the (Psychiatric) Hospital Hold.
   c. IHN-CCO will review documentation when a (Psychiatric) Hospital Hold has occurred, including the condition of the person and the need for emergency care or treatment if they have probable cause to believe that the person:
      i. Is dangerous to self or any other person and is in need of immediate care, custody or treatment for mental illness; or
      ii. Is a person with mental illness placed on conditional release, outpatient commitment or trial visit; and
      iii. Is dangerous to self or to any other person or is unable to provide for basic personal needs and is not receiving the care that is necessary for health and safety and is in need of immediate care, custody or treatment of mental illness.
   d. Community Mental Health Providers will have procedures outlining commitment processes and will follow procedures detailed in ORS 426.

REFERENCES
1. ORS 426
2. Division 33 – Involuntary Commitment Proceedings
3. Oregon Administrative Rules 410-141-3140
4. OHA – IHN-CCO Contract

RESPONSIBLE PARTY
The Director of Medical Management has responsibility to ensure this policy is up-to-date throughout the period it is in effect and reviewed and approved by the date indicated.

RELATED DOCUMENTS
None
PURPOSE
This policy describes how Samaritan Health Plans (SHP) meets Oregon Administrative Rules (OARs) 410-141-3300, 410-141-3320, 410-141-3280, and 410-141-0220; and 42 CFR 438.206 through 438.210 related to the provision and disclosure of InterCommunity Health Network Coordinated Care Organization (IHN-CCO) member rights and responsibilities.

APPLICATION / SCOPE
SHP employees and contracted providers

DEFINITIONS
None

POLICY
SHP ensures that IHN members have the rights and responsibilities that are identified in the Age Discrimination Act, Title VI of the Civil Rights Act, ORS 659A, OAR 410-141-3300, 410-141-3320, 410-141-3280, 410-141-0220, 42 CFR 438.206 through 438.210 and wherever else required by applicable regulation and statute. Member Rights and Responsibilities are communicated to members through their member handbook. These rights are communicated in a fashion which ensures that the member handbook maintains Flesch-Kincaid readability requirements as stated in the Oregon Health Authority (OHA) contract.

PROCEDURE
1. IHN members have the right:
   a. To be treated with dignity and respect which includes their right to privacy
   b. To be treated by participating providers the same as other people seeking health care benefits to which they are entitled
   c. To choose a Primary Care Provider (PCP) or service site, and to change those choices as permitted in OAR 410-141-0080, Oregon Health Plan (OHP) Disenrollment from prepaid Health Plans (PHPs), and the SHP Policy ED-08 Selection of Primary Care Provider
   d. To refer oneself directly to mental health, chemical dependency or family planning services without getting a referral from a PCP or other participating provider
   e. To have a friend, family member, or advocate present during appointments and at other times as needed within clinical guidelines
   f. To be actively involved in the development of his/her treatment plan
   g. To be given information about his/her condition and covered and non-covered services to allow an informed decision about proposed treatment(s)
   h. To consent to treatment or refuse services, and be told the consequences of that decision, except for court ordered services
   i. To receive written materials describing rights, responsibilities, benefits available, how to access services, and what to do in an emergency
   j. To have written materials explained in a manner that is understandable to the member
   k. To receive necessary and reasonable services to diagnose the presenting condition
   l. To receive covered services under IHN that meet generally accepted standards of practice and is medically appropriate
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m. To obtain covered preventive services
n. To have access to urgent and emergency services 24 hours a day, 7 days a week as described in OAR 410-141-0140, Oregon Health Plan Prepaid Health Plan Emergency and Urgent Care Services
o. To receive a referral to specialty practitioners for medically appropriate covered services
p. To have a clinical record maintained that documents conditions, services received, and referrals made
q. To have access to one’s own clinical record and request that they be amended or corrected as specified in 45 CFR 164.524 and 164.526 unless restricted by statute
r. To transfer a copy of his/her clinical record to another provider
s. To execute a statement of wished for treatment, including the right to accept or refuse medical, surgical, chemical dependency or mental health treatment and the right to execute directives and powers or attorney for health care established under Oregon Revised Statute (ORS) 127 as amended by the Oregon Legislative Assembly 1993 and the Omnibus Budget Reconciliation Act (OBRA) of 1990 – Patient Self-Determination Act
t. To receive written notices before a denial of, or change in, a benefit or service level I made, unless such notice is not required by Federal or State regulations
u. To know how to make a complaint or appeal with IHN and receive a response as defined in OAR 410-141-0260 to 410-141-0266
v. To require an administrative hearing with the Department of Human Services (DHS)
w. To receive interpreter services as defined in OAR 410-141-0220, Oregon Health Plan Prepaid Health Plan Accessibility
x. To receive a notice of an appointment cancellation in a timely manner
y. To receive culturally and linguistically appropriate services and supports, as geographically close to where members reside or seek services as possible
z. To receive oversight, care coordination and transition and planning management
aa. To receive integrated person centered care and services that provide choice, independence and dignity and meet generally accepted standards of practice and are medically appropriate
bb. To have a consistent and stable relationship with a care team that is responsible for comprehensive care management
cc. To receive assistance in navigating the health care delivery system and in accessing community and social support services and statewide resources
dd. Will be free from from any form of seclusion or restraint used as a means of coercion, discipline, convenience, or retaliation, as specified in other Federal Regulations.

2. IHN Members have the responsibility:
a. To choose, or help with assignment to, a PCP or service site
b. To treat SHP staff, providers, and clinic staff with respect
c. To be on time for appointments made with providers and to call in advance wither to cancel if unable to keep the appointment or if he/she expects to be late
d. To seek periodic health exams and preventive services from his/her PCP or clinic
e. To use his/her PCP or clinic for diagnostic and other care except in an emergency
f. To obtain a referral to a specialist from the PCP or clinic before seeking care from a specialist unless self-referral to the specialist is allowed
g. To use urgent and emergency services appropriately and notify SHP within 72 hours of an emergency
h. To give accurate information for inclusion in the clinical record and to request corrections in their medical record
i. To help the provider or clinic obtain clinical records from other providers which may include signing an authorization for release of information
j. To ask questions about conditions, treatments and other issues related to his/her care that is not understood
k. To use information to make informed decisions about treatment before it is given
l. To help in the creation of a treatment plan with the provider
m. To follow prescribed agreed upon treatment plans
n. To tell the provider that his/her health care is covered under IHN before services are received and, if requested, to show the provider the IHN identification card
o. To tell the DHS worker of a change of address or phone number
p. To tell the DHS worker is the IHN Member becomes pregnant and to notify the DHS worker of the birth of the IHN member’s child
q. To tell the DHS worker if any family members move in or out of the household
r. To tell the DHS worker if there is any other insurance available
s. To pay for non-covered services under the provisions described in OAR 410-120-1200 and 410-120-1280
t. To pay the monthly OHP premium on time if so required
u. To assist IHN in pursuing any third party resources available and to pay IHN the amount of benefits it paid for an injury from any recovery received from that injury
v. To bring issues, or complaints or grievances to the attention of IHN
w. To sign an authorization for release of medical information so that DHS and IHN can get information that is pertinent and needed to respond to an administrative hearing request in an effective and efficient manner

3. Discrimination Statement:
   a. IHN does not discriminate between IHN members and Non-IHN members as it relates to benefits and covered services to which they are both entitled and as applicable under the Age Discrimination Act and Title VI of the Civil Rights Act, and ORS 659A. Complaints of discrimination can be filed through one of the following:
   b. The Coordinated Care Organization (CCO)
   c. The Bureau of Labor and Industries (BOLI)
   d. The Office of Civil Rights (OCR)
   e. IHN communicates member rights and responsibilities through various methods, including the IHN Member Handbook and Annual Mailing.
   f. IHN includes member rights and responsibilities in the Samaritan Health Plan Operations (SHP) Provider Manual. The Provider Manual is updated regularly and posted on the SHP website for easy access by Providers.
   g. If an IHN member believes that his/her rights have been negated, or if they do not agree with his/her responsibilities as an IHN-CCO member, SHP ensures that the grievance and appeals process treats them fairly, timely and in complete confidence that their concerns will be handled appropriately. The grievance and appeals process is reported to Oregon Health Authority through the requirement of Exhibit I on a quarterly basis.

REFERENCES
1. OARS: 410-141-3300, 410-141-3320, 410-141-3280 and 410-141-0220
2. Age and Discrimination Act
3. Title VI of the Civil Rights Act
4. ORS 659A
5. 42 CFR 438.100
6. 24 CFR 438.206 through 438.210

RESPONSIBLE PARTY
Director of Plan Contract and Benefit Administration

REQUIRED REVIEW
None

RELATED DOCUMENTS
None

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<td>Elizabeth A. Gartman</td>
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<td>03/23/2018</td>
<td>Elizabeth A. Gartman</td>
<td>Updated document calling out additional regulatory requirements</td>
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<td>3</td>
<td>01/28/2019</td>
<td>Elizabeth A. Gartman</td>
<td>Updated to the new template to put out on Share Point. Updated with Account Management to Plan Contract and Contract Template</td>
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<td>02/21/2019</td>
<td>Elizabeth A. Gartman</td>
<td>Updated OAR sections to reflect most recent OAR update by OHA</td>
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PURPOSE

This policy describes how Samaritan Health Plans (SHP) Quality Department ensures the development of health educational materials for members, which may include information on specific health care procedures, instruction in self-management of health care, promotion and maintenance of optimal health care status, patient self-care, and disease and accident prevention.

APPLICATION / SCOPE

SHP QUALITY DEPARTMENT AND SHP MARKETING DEPARTMENT STAFF

DEFINITIONS

None

POLICY

SHP educates members on specific health-related topics as appropriate through many different avenues. SHP provides member health education as required by state, federal and contractual requirements.

PROCEDURE

1. All written health education materials follow contractual and regulatory guidelines. Informational materials meet language requirements and are culturally sensitive to the membership, including members with disabilities or reading limitations and including substantial populations whose primary language is not English in the SHP service area.
2. SHP follows state, federal and contractual requirements and alternative forms, which may include, but are not limited to, audio tapes, close-captioned videos, large type and Braille. All text included on materials, including footnotes, and internal tracking numbers, must be printed with a font size equivalent to or larger than Times New Roman 12-point.
3. SHP provides health educational brochures that include information on specific diseases, children’s issues, pregnant women issues, prevention, etc.
4. SHP sends three health education newsletters a year (Your Health Matters) to all IHN-CCO members. SHP also sends a health education newsletter (Health Tips) to all SAHP members every other month. Newsletter topics include but are not limited to: safety issues, senior topics, parenting, and disease management. SHP also provides
health education to members during case management or as part of quality improvement projects.

5. The Quality Department creates written health educational materials that may or may not be distributed by the Quality Department. The Quality Department coordinates the dissemination of health educational materials with other departments within SHP.

REFERENCES
Medicare Managed Care Manual Chapters 3 & 5; OAR 410-141-3200; OAR 410-141-3300

RESPONSIBLE PARTY
The Manager of the Quality Department is responsible to ensure the policy is up-to-date throughout the period it is in effect and reviewed and approved by the date indicated.

RELATED DOCUMENTS
NA

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PURPOSE
All lines of business have requirements to inform members of their health benefits and rights. One example is a member being able to request any material in hard copy. The Affordable Care Act (ACA) protects from discrimination of health services based on race, ethnicity, national origin, religion, gender, age, mental or physical disability, health status, claims experience, medical history, genetic information, evidence of insurability, or geographic location. Basic services and information are required to be given or provided to member(s) upon request. This policy provides guidance on resolving member requests received directly by the health plan and how they are to be resolved.

APPLICATION / SCOPE
All Health Plan Departments, Functional Teams, and Staff

DEFINITIONS
Member Materials- Any document(s) required to be provided by the health plan to the member that provide important information around benefits, notification of rights, or information needed to access care.

Basic Services- Services provided by the health plan are free from discrimination based on race, ethnicity, national origin, religion, gender, age, mental or physical disability, health status, claims experience, medical history, genetic information, evidence of insurability, and geographic location.

Functional Team- An internal team or department that is accountable for an operating process or area of work on behalf of health plan.

POLICY
The Affordable Care Act (ACA) protects from discrimination of health services based on race, ethnicity, national origin, religion, gender, age, mental or physical disability, health status, claims experience, medical history, genetic information, evidence of insurability, or geographic location. Basic services and information are required to be given or provided to member(s) upon request. This policy provides guidance on resolving member requests received directly by the health plan and how they are to be resolved.

PROCEDURE
PCBA provides plan documents and other member materials to member(s) which informs them of their benefits under the plan and their rights as a member as defined by rule or contract. Additionally, each line of business website has a nondiscrimination notice posted. A Nondiscrimination Coordinator is identified, and each notice will be reviewed and updated annually.

PCBA reviews benefit requirements to ensure they are compliant with applicable rules and with the contract. Items which are not in compliance are brought to the appropriate functional teams for review and resolution where appropriate.

Oral and written requests for specialized member materials are received by Customer Service or in writing. These requests are resolved through the applicable line of business Account Coordinator. Requests other than member materials may be brought to PCBA for review to assist in identifying which functional teams can resolve the issue. Once identified, PCBA will alert the appropriate functional teams of the request. The functional teams will be responsible for appropriate resolution of the request.
Customer service utilizes a vendor to provide interpretation services for any member(s) who may require verbal assistance on demand.

Each functional team is responsible for ensuring their documents are compliant with all regulations including nondiscrimination rules.

Members can request assistance by contacting the Health Plan through our Customer Service department or through the submission of a written request. The member(s) can request assistance generally or they can ask for assistance through the Nondiscrimination Coordinator. All requests received will be reviewed by the appropriate department and resolved in accordance to all applicable rules and regulations.

**REFERENCES**
42 CFR 422.10, 422.2268®, 423.2268 ©, NCQA Member Rights, Medicare Chapter 2 Section 30.2, Early Retiree Income Security Act, Section 1557 of the Affordable Care Act (ACA), American Disability Act (ADA)

**RESPONSIBLE PARTY**
The Manager of PCBA is responsible for maintaining this document.

**REQUIRED REVIEW**
None

**RELATED DOCUMENTS**
None

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<td>01/03/2019</td>
<td>Elizabeth A. Gartman</td>
<td>Department names were changed from Account Management to Plan Contract and Benefit Administration. The policy was transferred to the new policy template.</td>
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PURPOSE
This policy describes how InterCommunity Health Plans (IHP) ensures that its contracted hospitals, clinics (including dental clinics), and practitioner (including behavioral health) offices as defined below, have policies, protocols, and methods for communicating seclusion and restraint requirements based on member rights outlined in 42 CFR section 482.13, and as a requirement outlined in OAR 410-141-3300, OAR 410-141-3320 and 42 CFR 438.100.

APPLICATION / SCOPE
Customer Service Department, Account Management Department, Provider Engagement Department, Compliance Department, and all SHP Contracted Providers.

DEFINITIONS
I. Hospital: For the purpose of this policy, hospital shall mean
   A. All hospitals (acute care, long-term care, psychiatric, children’s, and cancer
   B. All locations within the hospital (including medical/surgical units, critical care units, forensic units, emergency department, psychiatric units, etc.)
II. Clinics: Professional Medical offices with multiple practitioners including dental clinics.
III. Practitioner Offices: Solo or individual medical or mental health practitioners including dentists.
IV. Behavioral Health: means medically appropriate services rendered or made available to a recipient for treatment of a behavioral health or substance use disorders diagnosis. Behavioral Health Services may be provided through outpatient, Partial Hospitalization, Residential Treatment or Inpatient Treatment based on the medically appropriate needs of the patient and includes treatment of Substance Use Disorders and Mental Health Disorders.
V. Restraint: Any manual method, physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely. A restraint does not include devices, such as orthopedically prescribed devices, surgical dressings or bandages, protective helmets, or other methods that involve the physical holding of a patient for the purpose of conducting routine physical examinations or tests, or to protect the patient from falling out of bed, or to permit the patient to participate in activities without the risk of physical harm (this does not include a physical escort). The use of restraints will not be done due to coercion or punishment.
VI. **Chemical Restraints or Inappropriate Use of Medication:** A medication used to control behavior or to restrict the patient’s freedom of movement and is not a standard treatment for the patient's medical or psychological condition.

VII. **Seclusion:** The involuntary confinement of a patient alone in a room or area from which the patient is physically prevented from leaving. Seclusion can be used only in approved ITS programs as an emergency safety intervention specified in OAR 309-022-0175.

**POLICY**

Samaritan Health Plan (SHP) ensures that all contracted hospital providers, medical and dental clinics, and practitioners (including behavioral health and dental) offices have written policies, protocols, and means for communicating the prohibition of seclusion and restraint of IHP members where seclusion and restraint is used as a means of coercion, discipline, convenience or retaliation (as specified in federal regulations on the use of restraint and seclusion), and that the policies comply with Federal and State laws that pertain to member rights.

**PROCEDURE**

Contracted hospitals, medical and dental clinics, and practitioners (including behavioral health and dentists) offices must ensure that all IHP members are communicated their rights regarding restraint and seclusion, which must include at least the following:

I. **Restraint or Seclusion**

   A. May not be used unless the use of restraint or seclusion is necessary to ensure the immediate physical safety of the patient, a staff member, or others.

   B. The use of restraint or seclusion must be discontinued as soon as possible based on an individualized patient assessment and re-evaluation.

      i. A violation of any of these patients’ rights constitutes an inappropriate use of restraint or seclusion and would be subject to a condition level deficiency. Patient protections contained in this standard apply to all hospital, clinics, and practitioner offices (including behavioral health) patients when the use of restraint or seclusion becomes necessary, regardless of patient location.

      ii. The requirements contained in this standard are not specific to any treatment setting within the hospital. They are not targeted only to patients on psychiatric units or those with behavioral/mental health care needs. Instead, the requirements
C. Contracted Providers of Intensive Treatment Services for Children (ITS) must meet the requirements for Seclusion and Restraint contained in OAR 309-022-0100 through 309-022-0230 including:
   i. Adopt policies and procedures for Emergency safety interventions as part of a Crisis Prevention and Intervention Policy. The policy must be consistent with the provider’s trauma-informed services policies and procedures.
   ii. Personal restraint and seclusion must only be used in an emergency safety situation to prevent immediate injury to an individual who is in danger of physically harming him or herself or others in situations such as the occurrence of, or serious threat of violence, personal injury or attempted suicide.
   iii. Each personal restraint must be conducted by program staff that have completed and use Division-approved crisis intervention training. If in the event of an emergency a non-Division approved crisis intervention technique is used, the provider’s on-call administrator must immediately review the intervention and document the review in an incident report to be provided to the Division within 24 hours;

D. Individuals have the right to be free of Seclusion and Restraint in an Outpatient setting per OAR 309-019-0115

E. Contracted Providers of Acute Care Psychiatric Services must meet the requirements of OAR 309-033-0700 through 309-033-0740, Standards for the Approval of Community Hospitals and Nonhospital Facilities to Provide Seclusion and Restraint to Committed Persons and to Persons in Custody or on Diversion addressing seclusion and restraint:
   i. Seclusion or restraint may only be used in hospitals and facilities certified by the Oregon Public Health Division.
   ii. Facilities must adopt policies and procedures for the use of seclusion and restraint consistent with above stated OAR’s.
   iii. Seclusion or restraint may be used only for the management of violent or self-destructive behavior that jeopardizes the immediate physical safety of the patient, a staff member, or other individuals.
F. For Medicaid eligible clients, hospitals and facilities shall report the number of seclusion and number of restraints to the Public Health Division within 30 days of each quarters end.

REFERENCES

RESPONSIBLE PARTY
I. The Provider Engagement Manager has responsibility to ensure the policy is up-to-date throughout the period it is in effect and reviewed and approved by the date indicated.

RELATED DOCUMENTS
I. List related policies or CMS memos which are stated or ties into the creation of this policy.

<table>
<thead>
<tr>
<th>Required Review Date:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision #</td>
<td>Approved By / Date</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Part 1a. List stakeholder types to be included in the engagement process. Applicants must include, at a minimum, plans to engage the following stakeholder types: OHP consumers, community-based organizations that address disparities and the social determinants of health (“SDOH-HE”), providers, including culturally specific providers as available (includes physical, oral, behavioral, providers of long term services and supports, traditional health workers and health care interpreters), Regional Health Equity Coalitions (if present in the service area), early learning hubs, local public health authorities, local mental health authorities, other local government, and tribes. Add additional rows as needed.</td>
<td>Part 1b. List specific agencies, organizations and individuals, based on the stakeholder types identified in Part 1.a, with which the applicant will engage. Add additional rows under the stakeholder type as needed.</td>
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<tr>
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<tr>
<td><strong>OHP consumers (list in first column below)</strong></td>
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</tr>
<tr>
<td>OHP consumers</td>
<td>Community Advisory Council (CAC)</td>
</tr>
<tr>
<td>OHP consumers</td>
<td>Benton County Local Committee of the CAC</td>
</tr>
<tr>
<td>OHP consumers</td>
<td>Lincoln County Local Committee of the CAC</td>
</tr>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>OHP consumers</td>
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</tr>
<tr>
<td>OHP consumers</td>
<td>Linn County Local Committee of the CAC</td>
</tr>
<tr>
<td>OHP consumers</td>
<td>IHN-CCO Board of Directors</td>
</tr>
</tbody>
</table>

**Community-based organizations that address disparities and SDOH-HE (list in first column below)**

<table>
<thead>
<tr>
<th>Community-based organizations that address disparities and SDOH-HE</th>
<th>Willamette Neighborhood Housing Services</th>
<th>They are extremely engaged through our Delivery System Transformation (DST) Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</th>
<th>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>Albany Partnerships for Housing and Community Development</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.)</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>Determinants of health and health equity</td>
<td></td>
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</tr>
<tr>
<td>RideLine through Oregon West Cascades Council of Governments</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
<td></td>
</tr>
<tr>
<td>Family Tree Relief Nursery</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
<td></td>
</tr>
<tr>
<td>Legal Aid</td>
<td>They are engaged through Workgroups and address a gap difficult to fill</td>
<td>Strengthen engagement and relationship through consistent communication and transparency</td>
<td></td>
</tr>
<tr>
<td>Morrison Child and Family Services</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
<td></td>
</tr>
<tr>
<td>Old Mill Center for Children and Families</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
<td></td>
</tr>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>Signs of Victory</td>
<td>They are engaged through Workgroups and address a gap difficult to fill</td>
<td>Strengthen engagement and relationship through consistent communication and transparency</td>
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<tr>
<td></td>
<td>SHS Care Management</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
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<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>SHS Health Education</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Community-based organizations that address disparities and SDOH-HE</td>
<td>Community Services Consortium</td>
<td>They are engaged through Workgroups and address a gap difficult to fill</td>
<td>Strengthen engagement and relationship through consistent communication and transparency</td>
</tr>
<tr>
<td><strong>Providers, physical health, including culturally specific providers as available (list in first column below)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>Willamette Nutrition Source</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups and have a high standing in the community</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>Samaritan Medical Group</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups and have a high standing in the community</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>Federally Qualified Health Centers (Benton County, Lincoln County, Linn County)</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups and have a high standing in the community</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
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</tr>
<tr>
<td>Providers, physical health</td>
<td>Albany InReach Services</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>Mid-Valley Children’s Clinic</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>ABC House</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, physical health</td>
<td>Heart of the Valley Birth and Beyond</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Benton County Developmental Diversity</td>
<td>They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
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</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Lincoln County Developmental Disabilities</td>
<td>They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Linn County Developmental Disabilities</td>
<td>They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Old Mill Center for Children and Families</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Samaritan Mental Health</td>
<td>Identified as a vital partner for the behavioral health system;</td>
<td>Continue to build on current relationship and expand</td>
</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Trillium</td>
<td>Identified as a vital partner for the behavioral health system; engaged partners through the Behavioral Health Quality Committee and System of Care</td>
<td>Continue to build on current relationship and expand strategies for increased communication</td>
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</tr>
<tr>
<td>Providers, behavioral health</td>
<td>Olalla Center for Children and Families</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
</tbody>
</table>

<p>| Providers, oral health, including culturally specific providers as available (list in first column below) |
|----------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Providers, oral health | Capitol Dental Care | They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, the Regional Oral Health Coalition, and other local committees, have a high standing in the community, and are experts on oral health | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |
| Providers, oral health | Willamette Dental Group | They are engaged through our Regional Oral Health Coalition and DST Workgroups, have a high standing in the community, and are experts on oral health | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |
| Providers, oral health | ODS (Moda Health) | They are engaged through our Regional Oral Health Coalition and DST Workgroups, have a high standing in the community, and are experts on oral health | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |</p>
<table>
<thead>
<tr>
<th>Providers, oral health</th>
<th>Advantage Dental</th>
<th>They are engaged through our Regional Oral Health Coalition and DST Workgroups, have a high standing in the community, and are experts on oral health</th>
<th>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers, long term services and supports, including culturally specific providers as available (list in first column below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providers, long term services and supports</td>
<td>Cascades West Council of Governments</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity, long term care supports and services, and more</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, traditional health workers, including culturally specific providers as available (list in first column below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providers, traditional health workers</td>
<td>Heart of the Valley Birth and Beyond</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, traditional health workers</td>
<td>Benton County Health Department</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, traditional health workers</td>
<td>Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.)</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
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<tr>
<td>Providers, traditional health workers</td>
<td>Willamette Neighborhood Housing Services</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
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</tr>
<tr>
<td>Providers, traditional health workers</td>
<td>Traditional Health Worker Hub (Benton County Health Department)</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Providers, traditional health workers</td>
<td>Linn County Public Health</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
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<td>Providers, traditional health workers</td>
<td>Samaritan Medical Group</td>
<td>They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity</td>
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<td>Providers, traditional health workers</td>
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</tr>
<tr>
<td>Early learning hubs (list in first column below)</td>
<td>Early Learning Hub</td>
<td>Early Learning Hub of Linn, Benton, and Lincoln Counties</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Local public health authorities (list in first column below)</td>
<td>Local public health authorities</td>
<td>Benton County Health Department</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Local public health authorities</td>
<td>Local public health authorities</td>
<td>Lincoln County Health and Human Services</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
<tr>
<td>Local public health authorities</td>
<td>Local public health authorities</td>
<td>Linn County Public Health</td>
<td>Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making</td>
</tr>
</tbody>
</table>
committees, have a high standing in the community, and are experts on social determinants of health and health equity | goals, mission, vision, values, and shared decision-making

**Local mental health authorities (list in first column below)**

| Local mental health authorities | Benton County Health Department | They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making

| Local mental health authorities | Lincoln County Health and Human Services | They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making

| Local mental health authorities | Linn County Mental Health | They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts on social determinants of health and health equity | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making

**Tribes, if present in the service area (list in first column below)**

| Tribes | Confederated Tribes of Siletz Indians | Importance of this relationship is identified and plans to strengthen the relationship are in development | Develop and strengthen relationship through shared goals

**Regional Health Equity Coalitions, if present in the service area (list in first column below)**
| Regional Health Equity Coalitions | Linn Benton Health Equity Alliance | They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups, have a high standing in the community, and are experts on social determinants of health and health equity | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |

| Add additional stakeholder types here (list in first column below) |  |

| Regional Health Assessment | Regional Health Assessment (part of the Community Health Centers and IHN-CCO) | They are extremely engaged through our Delivery System Transformation Committee and associated Workgroups and the CAC | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |

| Add additional stakeholder types here (list in first column below) |  |

| Equity and Inclusion Councils | Samaritan Health Services Equity and Inclusion Council | Extremely engaged as a liaison with the Delivery System Transformation Committee’s Health Equity Workgroup | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |

| Add additional stakeholder types here (list in first column below) |  |

| Education Services | Corvallis School District | Vital participant in IHN-CCO and see and help many members | Strengthen relationship through improved communication and transparency |

| Education Services | Linn Benton Lincoln Education Service District | Vital participant in IHN-CCO and see and help many members | Maintain and strengthen relationship through improved and continued communication and transparency |

| Education Services | Oregon State University | They are extremely engaged through our Delivery System Transformation Committee, DST Workgroups, the CAC, and local committees, have a high standing in the community, and are experts | Maintain high level of engagement through consistent communication and transparency, including shared goals, mission, vision, values, and shared decision-making |
### Table 2: Major activities and deliverables for which the CCO will engage the community

All applicants must complete this full table.

<table>
<thead>
<tr>
<th>Part 2a. List and describe the five to eight major projects, programs and decisions for which the CCO will engage the community.</th>
<th>Part 2b. Identify the level of community engagement for each project, program and decision. Answers* must be 1) inform/communicate, 2) consult, 3) involve, 4) collaborate, or 5) shared decision-making. Applicant may include more than one level of engagement for each project, program or decision to account for differences among stakeholder groups.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unite Us Referral Network</td>
<td>Inform/communicate, consult, involve, collaborate, shared decision-making</td>
</tr>
<tr>
<td>Delivery System Transformation Request for Proposal</td>
<td>Inform/communicate, consult, involve, collaborate, shared decision-making</td>
</tr>
<tr>
<td>Health Equity Workforce Development</td>
<td>Inform/communicate, consult, involve, collaborate</td>
</tr>
<tr>
<td>Social Determinants of Health Spending</td>
<td>Inform/communicate, consult, involve, collaborate, shared decision-making</td>
</tr>
<tr>
<td>Behavioral Health System Strategic Planning and System Redesign</td>
<td>Inform/communicate, consult, involve, collaborate, shared decision-making</td>
</tr>
<tr>
<td>Regional Health Education Hub</td>
<td>Inform/communicate, consult, involve, collaborate, shared decision-making</td>
</tr>
</tbody>
</table>

*  
1. **Inform**: Provide the community with information to assist in their understanding of the issue, opportunities, and solutions. Tools include fact sheets, published reports, media releases, education programs, social media, email, radio, information posted on websites, and informational meetings.  
2. **Consult**: Obtain community feedback on analysis, alternatives, and/or decisions. Tools include issue briefs, discussion papers, focus groups, surveys, public meetings, and listening sessions.  
3. **Involve**: Work directly with the community throughout the process to ensure that community concerns and aspirations are understood and considered. Applicant provides feedback to the community describing how the community input influenced the decision. Tools include meetings with key stakeholders, workshops, subject matter expert and stakeholder roundtables, conferences, and task forces.  
4. **Collaborate**: Partner with the community in each aspect of the process, including decision points, the development of alternatives and the identification of a solution. Tools include advisory committees, consensus building, and participatory decision making.  
5. **Shared decision-making**: To place the decision-making in the hands of the community (delegate) or support the actions of community initiated, driven and/or led processes (community driven/led). Tools include delegated decisions to members of the communities impacted through steering committees, policy councils, strategy groups, Community supported processes, advisory bodies, and roles and funding for community organizations.
Table 3: Engagement with other agencies in the service area that have responsibility for developing community health assessments and community health improvement plans

All applicants must complete this full table. Applicants may add rows as needed.

<table>
<thead>
<tr>
<th>Part 1. Applicants with an existing CCO CHA and CHP will submit their most recent CHA and CHP with the community engagement plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 2.</strong> List of all local public health authorities, non-profit hospitals, other CCOs that share a portion of the service area, and any federally recognized tribe in the service area that is developing or has a CHA/CHP. Add additional rows as needed.</td>
</tr>
<tr>
<td><strong>Part 3.</strong> The extent to which each organization was involved in the development of the Applicant's current CHA and CHP. Answers* must be a) competition and cooperation, b) coordination, c) collaboration, or d) not applicable (NA).**</td>
</tr>
<tr>
<td><strong>Part 4.</strong> For any organization that is a collaborator for a shared CHA and shared CHP priorities and strategies, the applicant will list the shared priorities and strategies.**</td>
</tr>
<tr>
<td><strong>Part 5.</strong> For any organization that is not a collaborator for a shared CHA and shared CHP priorities and strategies, the applicant will describe the current state of the relationship between the applicant and the organization(s), including gaps.</td>
</tr>
<tr>
<td><strong>Part 6.</strong> For any organization that is not a collaborator for a shared CHA and shared CHP priorities and strategies, the applicant will describe the steps the applicant will take to address gaps prior to developing the next CHA and CHP, and the dates by which the applicant will complete key tasks.***</td>
</tr>
<tr>
<td><strong>Part 7.</strong> Applicants without an existing CHA and CHP or that intend to change their service area will demonstrate that they have reviewed CHAs and CHPs developed by these other organizations. List the health priorities from existing plans.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Local public health authorities (list in this column below)</strong></th>
<th><strong>Collaboration</strong></th>
<th><strong>The Regional Health Assessment provides data to the CCO CHA and CHP and the county CHPs. The CCO CAC Chair is on a coordinator for the Regional Health Assessment and ensures two-way communication for alignment between all three county CHPs and the CCO CHA and CHP.</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton County Health Department</td>
<td>Collaboration</td>
<td>The Regional Health Assessment provides data to the CCO CHA and CHP and the county CHPs. The CCO CAC Chair is on a coordinator for the Regional Health Assessment and ensures two-way communication for alignment between all three county CHPs and the CCO CHA and CHP.</td>
<td></td>
</tr>
</tbody>
</table>
Lincoln County Health and Human Services | Collaboration | The Regional Health Assessment provides data to the CCO CHA and CHP and the county CHPs. The CCO CAC Chair is on a coordinator for the Regional Health Assessment and ensures two-way communication for alignment between all three county CHPs and the CCO CHA and CHP.

Linn County Public Health | Collaboration | The Regional Health Assessment provides data to the CCO CHA and CHP and the county CHPs. The CCO CAC Chair is on a coordinator for the Regional Health Assessment and ensures two-way communication for alignment between all three county CHPs and the CCO CHA and CHP.

Non-profit hospitals (list in this column below) | | |

Samaritan Albany General Hospital | Coordination | The relationship between Samaritan hospitals and IHN-CCO is strong. The IHN-CCO CHA and CHP align on the same SDoH/HE

The Chief Executive Officer (CEO) of IHN-CCO is now the Chief Administrative Officer of Samaritan Health Services and will ensure
Samaritan Lebanon Community Hospital  | Coordination  | The relationship between Samaritan hospitals and IHN-CCO is strong. The IHN-CCO CHA and CHP align on the same SDoH/HE priorities and preventive care strategies with the hospital CHPs. Gaps include committee representatives being including on both sides during development and implementation. | The CEO of IHN-CCO is now the Chief Administrative Officer of Samaritan Health Services and will ensure deeper and more meaningful collaboration on all CHAs and CHPs. Additionally, the Regional Health Assessment will be the sole data provider for all regional CHPs by 2021. |

Good Samaritan Regional Medical Center  | Coordination  | The relationship between Samaritan hospitals and IHN-CCO is strong. The IHN-CCO CHA and CHP align on the same SDoH/HE priorities and preventive care strategies with the hospital CHPs. Gaps include committee representatives being including on both sides during development and implementation. | The CEO of IHN-CCO is now the Chief Administrative Officer of Samaritan Health Services and will ensure deeper and more meaningful collaboration on all CHAs and CHPs. Additionally, the Regional Health Assessment will be the sole data provider for all regional CHPs by 2021. |
| Samaritan North Lincoln Hospital | Coordination | The relationship between Samaritan hospitals and IHN-CCO is strong. The IHN-CCO CHA and CHP align on the same SDoH/HE priorities and preventive care strategies with the hospital CHPs. Gaps include committee representatives being including on both sides during development and implementation. | The CEO of IHN-CCO is now the Chief Administrative Officer of Samaritan Health Services and will ensure deeper and more meaningful collaboration on all CHAs and CHPs. Additionally, the Regional Health Assessment will be the sole data provider for all regional CHPs by 2021. |
| Samaritan Pacific Communities Hospital | Coordination | The relationship between Samaritan hospitals and IHN-CCO is strong. The IHN-CCO CHA and CHP align on the same SDoH/HE priorities and preventive care strategies with the hospital CHPs. Gaps include committee representatives being including on both sides during development and implementation. | The CEO of IHN-CCO is now the Chief Administrative Officer of Samaritan Health Services and will ensure deeper and more meaningful collaboration on all CHAs and CHPs. Additionally, the Regional Health Assessment will be the sole data provider for all regional CHPs by 2021. |
## Current coordinated care organizations, as of 2019 (list in this column below)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Type</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trillium Community Health Plan</td>
<td>NA</td>
<td>IHN-CCO’s OHA Innovator Agent contributes to the CHA/CHP and is a connection to Trillium Community Health Plan. Trillium Community Health Plan will be required to develop a CHA/CHP per CCO 2.0 RFA and IHN-CCO will be happy to partner and assist.</td>
</tr>
<tr>
<td>Willamette Valley Community Health</td>
<td>NA</td>
<td>IHN-CCO’s OHA Innovator Agent contributes to the CHA/CHP and is a connection to Willamette Valley Community Health. Willamette Valley Community Health has determined they will no longer be a CCO for the 2020-2024 contract. IHN-CCO is happy to partner with and assist other CCOs as needed.</td>
</tr>
</tbody>
</table>

## Federally recognized tribes that have or are developing a CHA/CHP (list in this column below)

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Type</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confederated Tribes of Siletz Indians</td>
<td>Collaboration</td>
<td>The Regional Health Assessment provides data to the CCO CHA and CHP and the county CHPs. The CCO CAC Chair is on a coordinator for the Regional Health Assessment and ensures two-way communication for alignment between all three county CHPs and</td>
</tr>
</tbody>
</table>
the CCO CHA and CHP. The Confederated Tribes of Siletz Indians are full partners in development of the Lincoln County CHP.

<p>| | |</p>
<table>
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</table>

* a) Competition and Cooperation: Loose connections and low trust; tacit information sharing; ad hoc communication flows; independent goals; adapting to each other or accommodating others’ actions and goals; power remains with each organization; resources remain with each organization; commitment and accountability only to own organization; relational time frame short; low risk and reward.

b) Coordination: Medium connections and work-based trust; structured communication flows and formalized project-based information sharing; joint policies, programs and aligned resources; semi-interdependent goals; power remains with parent organizations; commitment and accountability to parent organization and project; relational time frame medium and based on prior projects; medium risk and reward.

c) Collaboration: Dense interdependent connections and high trust; frequent communication; tactical information sharing; systems change; pooled and collective resources; negotiated shared goals; power is shared between organizations; commitment and accountability to network first, community and parent organization; relation time frame long (3 years or more); high risk and reward.

d) Not applicable

**If the applicant does not have a current CHA and CHP, the applicant will enter not applicable (NA).

***Engagement activities must begin by March 31, 2020 and applicant will report on progress through the June 2020 CCO CHP progress report.
Table 4: Engagement with social determinants of health and health equity (SDOH-HE) partners for CHA and CHPs

Applicants may add rows as needed.

<table>
<thead>
<tr>
<th>All applicants must complete Part 1.</th>
<th>Applicants with an existing CHA and CHP must complete Parts 2, 3 and 4. Applicants that intend to change their service area must also complete Parts 2, 3, and 4.</th>
<th>Applicants without an existing CHA and CHP or that intend to change their service area must complete Parts 2a and 4a.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 1.</strong> List of organizations that address the social determinants of health and health equity in the applicant’s service area. Add additional rows as needed.</td>
<td><strong>Part 2.</strong> Applicants with an existing CHA and CHP will describe existing partnerships with each identified organization, including whether the organization contributed to the applicant’s current CHA and CHP.</td>
<td><strong>Part 2a.</strong> Applicants without an existing CHA and CHP or that intend to change their service area will demonstrate that they have reviewed community partnerships in place for other LPHA/non-profit hospital/tribal/CCO CHAs and CHPs in the service area by describing the steps the applicant will take to form relationships and secure participation by each organization prior to developing the first or next CHA and CHP, and the dates by which the applicant will complete key tasks for engagement.**</td>
</tr>
<tr>
<td><strong>Part 3.</strong> Applicants with an existing CHA and CHP will describe gaps in existing relationships with identified organizations.</td>
<td><strong>Part 4.</strong> Applicants with an existing CHA and CHP will describe the steps the applicant will take to address the identified gaps prior to developing the next CHA and CHP and the dates by which the applicant will complete key tasks for engagement.**</td>
<td><strong>Part 4a.</strong> Applicants without an existing CHA and CHP or that intend to change their service area will demonstrate that they have reviewed community partnerships in place for other LPHA/non-profit hospital/tribal/CCO CHAs and CHPs in the service area by describing the steps the applicant will take to form relationships and secure participation by each organization prior to developing the first or next CHA and CHP, and the dates by which the applicant will complete key tasks for engagement.**</td>
</tr>
</tbody>
</table>

a) The organization was explicitly involved in developing one or more CHAs or CHPs; b) The organization was not explicitly involved in developing a CHA or CHP; c) unknown.
<table>
<thead>
<tr>
<th>All tribes that present in the service area (list in this column below). If no tribe is present in the service area, note there are none.</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Confederated Tribes of Siletz Indians</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>All regional health equity coalitions (RHECs) that are present in the service area (list in this column below). If no RHEC is present in the service area, note there are none.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linn Benton Health Equity Alliance</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration;</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
</tr>
<tr>
<td>Local government, including counties</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td></td>
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<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
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</tr>
</tbody>
</table>
| | 1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
5. Considered the CHP’s ability to impact pilot project prioritization;  
6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity |
| | Strong relationship throughout the process |
| | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
Lincoln County | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020

Linn County | Involved in developing the most current CHP as | Strong relationship throughout the process | Strategic planning to ensure full outreach
part of the CAC’s CHP Workgroup that:

1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

and engagement of community partners will be completed by March 2020

<table>
<thead>
<tr>
<th>Organizations that address the four key domains of social determinants of health* (list in this column below).</th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
<th>Strong relationship throughout the process</th>
<th>Strategic planning to ensure full outreach and engagement of community partners will</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willamette Neighborhood Housing Services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attachment 10: RFA Community Engagement Plan Required Tables
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

| Albany Partnerships for Housing and Community Development | Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP | Identified as a possible contributor for the CHA/CHP through an environmental scan | Outreach to all possible community partners will occur by March 2020 |
| Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.) | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
### Discussion Points:

1. Discussed data;
2. Agreed to a set of factors or values for consideration;
3. Considered the CHP’s ability to impact pilot project prioritization;
4. Agreed that equity, social determinants of health, and care coordination are guiding principles
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

### Involved Parties:

**RideLine/Oregon West Cascades Council of Governments**

- Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
  1. Established the process;
  2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
  3. Discussed data;
  4. Agreed to a set of factors or values for consideration;
  5. Considered the CHP’s ability to impact pilot project prioritization;
  6. Agreed that equity, social determinants of health, and care coordination are guiding principles

### Strategic Planning:

- Strong relationship throughout the process
- Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
<table>
<thead>
<tr>
<th>Organization</th>
<th>Partnership Level</th>
<th>Identified as a Possible Contributor</th>
<th>Outreach to All Possible Community Partners Will Occur By</th>
<th>Strategic Planning to Ensure Full Outreach and Engagement of Community Partners Will Be Completed By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson Street Youth Services</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
</tr>
<tr>
<td>Family Tree Relief Nursery</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
</tr>
<tr>
<td>Legal Aid</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care</td>
<td>Strong relationship throughout the process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity
### Morrison Child and Family Services
- **Partnership Level:** Minimal partnership, no participation developing the IHN-CCO CHA/CHP
- **Contributor Status:** Identified as a possible contributor for the CHA/CHP through an environmental scan
- **Engagement:** Outreach to all possible community partners will occur by March 2020

### Old Mill Center for Children and Families
- **Partnership Level:** Minimal partnership, no participation developing the IHN-CCO CHA/CHP
- **Contributor Status:** Identified as a possible contributor for the CHA/CHP through an environmental scan
- **Engagement:** Outreach to all possible community partners will occur by March 2020

### Signs of Victory
- **Partnership Level:** Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
  1. Established the process;
  2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
  3. Discussed data;
  4. Agreed to a set of factors or values for consideration;
  5. Considered the CHP’s ability to impact pilot project prioritization;
  6. Agreed that equity, social determinants of health, and care coordination are guiding principles
- **Contributor Status:** Strong relationship throughout the process
- **Engagement:** Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
<table>
<thead>
<tr>
<th></th>
<th>7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</th>
<th>United Way</th>
<th>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</th>
<th>Identified as a possible contributor for the CHA/CHP through an environmental scan</th>
<th>Outreach to all possible community partners will occur by March 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Oregon State University School of Public Health and Health Sciences</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SHS Care Management</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas,</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
</tr>
<tr>
<td>Organisation</td>
<td>Role in developing the CHP</td>
<td>Relationship</td>
<td>Outcome</td>
<td></td>
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</tr>
<tr>
<td>SHS Health Education</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles; 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Services Consortium</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

<table>
<thead>
<tr>
<th>ABC House</th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Established the process;</td>
</tr>
<tr>
<td></td>
<td>2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;</td>
</tr>
<tr>
<td></td>
<td>3. Discussed data;</td>
</tr>
</tbody>
</table>

| Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
4. Agreed to a set of factors or values for consideration;  
5. Considered the CHP’s ability to impact pilot project prioritization;  
6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

<table>
<thead>
<tr>
<th>Organization</th>
<th>Partnership Level</th>
<th>Identified as a possible contributor for the CHA/CHP through an environmental scan</th>
<th>Outreach to all possible community partners will occur by March 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canyon Crisis Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Center Against Rape and Domestic Violence (CARDV)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Child Welfare Program, Department of Human Services (DHS)</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Childsafe Program</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>HOPE, Inc</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Organization</td>
<td>Description</td>
<td>Identified As</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Al-Anon and Alateen</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td></td>
</tr>
<tr>
<td>Community Outreach, Inc. (COI)</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td></td>
</tr>
<tr>
<td>Emergence</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<td>Milestones Family Recovery Program</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>New Beginnings</td>
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<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<td>FISH</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<td>Options Pregnancy Resource Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>Boys and Girls Club</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>Community Before and After School Child Care Program (CAP)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>Community Children's Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>Family and Community Together (FACT)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>Family Connections</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>H.A.R.T. Family Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<tr>
<td>Healthy Families of Linn and Benton Counties</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<tr>
<td>Mid-Willamette Family YMCA</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>Strengthening Rural Families</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<tr>
<td>Assistance League of Corvallis</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<tr>
<td>The Arc of Benton County</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Partnership Description</td>
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<td>Cornerstone Associates, Inc</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Home Life</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Casa Latinos Unidos</td>
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<td>Veterans Employment Services</td>
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<td>Sweet Home Emergency Ministries (SHEM)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>We Care</td>
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<td>Gleaners</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Meals on Wheels</td>
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<td>Ten Rivers Food Web</td>
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<tr>
<td>Women, Infants, and Children (WIC)</td>
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<td>Food Banks in all counties</td>
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<td>Stone Soup Program</td>
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<td>Neighbor to Neighbor</td>
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<td>Real Bowls Real People</td>
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<td>Linn Benton Food Share</td>
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<tr>
<td>Corvallis (City of) Housing &amp; Neighborhood Services Division</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Habitat for Humanity</td>
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<td>American Red Cross</td>
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<td>211.org</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Philomath Community Services</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Volunteer Interfaith Caregiver</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Pastoral Counseling Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<tr>
<td>Valley AIDS Information Network, Inc.</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>Corvallis Housing First</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>Linn Shuttle</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Dial-A-Bus</td>
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<td>Children's Advocacy Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<tr>
<td>My Sister’s Place</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<td>Alcoholics Anonymous (AA)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Partnership Against Alcohol and Drug Abuse (PAADA)</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
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<tr>
<td>ReConnections Counseling</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<tr>
<td>Birthright International</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<tr>
<td>Inter-Christian Outreach</td>
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<td>Bright Horizons Therapeutic Riding Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Healthy Start – Healthy Families Oregon</td>
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<td>Neighbors for Kids</td>
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<td>Oceana Family Literacy Center</td>
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<td>Oceanspray Family Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>Lovelace Development, LLC</td>
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<td>Outreach to all possible community partners will occur by March 2020</td>
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<td>Oregon State University (OSU) Family Care Connection Child Care Resource and Referral for Clatsop, Lincoln, and Tillamook Counties</td>
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<td>Yachats Youth and Family Activities Program</td>
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<td>All City Denture Clinic</td>
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<td>Progressive Options</td>
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<td>Centro de Ayuda</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Coastal Families Together</td>
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<tr>
<td>Community Development Corporation of Lincoln County</td>
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<td>Housing Authority of Lincoln County</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Northwest Coastal Housing</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Samaritan House Family Shelter</td>
<td>Strong partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Viridian Management</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Legal Aid Services of Oregon</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Lincoln City Senior Center</td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
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<tr>
<td>Behavioral Health Quality Committee</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process;</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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</tbody>
</table>
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

Benton, Lincoln, and Linn County Health Administrators
Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;

Strong relationship throughout the process
Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
<table>
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<th>Benton, Lincoln, and Linn Local Advisory Committees to the CAC</th>
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<td>6. Agreed that equity, social determinants of health, and care coordination are guiding principles</td>
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<td>7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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<tr>
<td>Community Doula Program</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will</td>
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<td>be completed by March 2020</td>
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</tr>
</tbody>
</table>

COMP NW - Center for Lifestyle Medicine

Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:

1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

Strong relationship throughout the process

Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020

<p>| | | |
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<table>
<thead>
<tr>
<th><strong>Community Health Centers of Benton and Linn Counties</strong></th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Established the process;</td>
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<tr>
<td>2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;</td>
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<td>3. Discussed data;</td>
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<td>4. Agreed to a set of factors or values for consideration;</td>
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<td>5. Considered the CHP’s ability to impact pilot project prioritization;</td>
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<td>Strong relationship throughout the process</td>
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<tr>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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</table>
coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

<table>
<thead>
<tr>
<th>COMP NW - Medical Education</th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
<th>Strong relationship throughout the process</th>
<th>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</th>
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<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
</tr>
<tr>
<td>Court Appointed Special Advocate</td>
<td>Involved in developing the most current CHP as</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach</td>
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<td>Strong relationship throughout the process</td>
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<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach</td>
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part of the CAC’s CHP Workgroup that:

1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles;
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

and engagement of community partners will be completed by March 2020

<p>| Darkness to Light facilitator, Child sexual abuse prevention | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |</p>
<table>
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<td>3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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</tr>
<tr>
<td>Dental Program Clinical Coordinator, Samaritan Health Services</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles</td>
<td>Strong relationship throughout the process</td>
</tr>
<tr>
<td>Developmental Disabilities Advisory Committee, Lincoln County</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
<td>Strong relationship throughout the process</td>
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</tbody>
</table>
## Disability Services Advisory Council, Oregon Cascades West Council of Governments

Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

Strong relationship throughout the process

Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020

## Eddyville School Board

Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
1. Established the process;
2. Reviewed all Outcomes, Indicators,

Strong relationship throughout the process

Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

| Foster Parents | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization; | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

<table>
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<tr>
<th>Gender &amp; Non-binary advocate</th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
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<td>1. Established the process;</td>
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<td>7. Agreed on Health Impact Areas, Outcomes and Indicator</td>
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Strong relationship throughout the process

Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
## Concepts, and Areas of Opportunity

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Relationship</th>
<th>Outcome</th>
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</thead>
<tbody>
<tr>
<td><strong>Growing Family Birth Center</strong></td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4.Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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<tr>
<td><strong>Health Care for All, Oregon</strong></td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process;</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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4. Agreed to a set of factors or values for consideration;  
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6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

| Homeless Resource Team, Benton County | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
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Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

| Homeless Vulnerable Patient Panel member | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles |
<p>| Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |</p>
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<tr>
<th>Advocate for Senior Housing</th>
<th>Involved in developing the most current CHP as part of the CAC's CHP Workgroup that:</th>
<th>Strong relationship throughout the process</th>
<th>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</th>
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<tr>
<td>Lincoln Community Health Centers</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will</td>
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<tr>
<td><strong>Lincoln County Federally Qualified Health Center Council</strong></td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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<td>1. Established the process;</td>
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<td>2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;</td>
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<td>3. Discussed data;</td>
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<td>7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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| Linn-Benton Housing Authority | **Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:**
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
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<td><strong>Strong relationship throughout the process</strong></td>
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<td><strong>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</strong></td>
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<tr>
<td>Role</td>
<td>Contributions</td>
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<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mental Health First Aid Instructor</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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<tr>
<td>Oregon Aging and Disability Resource</td>
<td>Involved in developing the most current CHP as</td>
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</table>
| Connect Advisory Committee | part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
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|---|---|---|
| Oregon Disabilities Commission | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; | Strong relationship throughout the process |
|  |  | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
| School Based Health Centers, Lincoln County | Involved in developing the most current CHP as part of the CAC's CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
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| Sheriff's Community Advisory Group, Lincoln County | Involved in developing the most current CHP as part of the CAC's CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
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6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
| Street Outreach and Response Team, Corvallis | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles; 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
| Sweet Home Community Health Committee | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

**Alcohol and Drug Addiction Council, Lincoln County**

Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:

1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;

**Strong relationship throughout the process**

Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020
| Addiction, Prevention, and Recovery Committee, Lincoln County | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
5. Considered the CHP’s ability to impact pilot project prioritization;  
6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
<table>
<thead>
<tr>
<th>Concepts, and Areas of Opportunity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coast-to-Valley Express</strong></td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
</tr>
<tr>
<td><strong>Seashore Family Literacy</strong></td>
<td>Minimal partnership, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor for the CHA/CHP through an environmental scan</td>
</tr>
<tr>
<td><strong>Health Equity Workgroup</strong></td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator</td>
<td>Strong relationship throughout the process</td>
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</table>
| Social Determinants of Health Workgroup | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
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</thead>
<tbody>
<tr>
<td>Yes House</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Amazing Treatment</td>
<td>Strong partnership with IHN-CCO, no</td>
<td>Identified as a possible contributor of the</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Traditional Health Workers (THWs) affiliated with organizations listed in OAR 410-141-3145 (list in this column).</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data;</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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5. Considered the CHP’s ability to impact pilot project prioritization;
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7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

<table>
<thead>
<tr>
<th>Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.)</th>
<th>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Established the process;</td>
<td></td>
</tr>
<tr>
<td>2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;</td>
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<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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| Willamette Neighborhood Housing Services | Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:  
1. Established the process;  
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;  
3. Discussed data;  
4. Agreed to a set of factors or values for consideration;  
5. Considered the CHP’s ability to impact pilot project prioritization;  
6. Agreed that equity, social determinants of health, and care coordination are guiding principles  
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
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<tr>
<td>Traditional Health Worker Hub</td>
<td>Involved in developing the most current CHP as...</td>
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<td>Strategic planning to ensure full outreach</td>
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<tr>
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<td>and engagement of community partners will be completed by March 2020</td>
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<td>1. Established the process;</td>
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<td>2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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<tr>
<td>Samaritan Medical Group</td>
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<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles; 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
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<td>Strong relationship throughout the process</td>
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<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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| Universal Care Coordination Workgroup | Involved in developing the most current CHP as part of the CAC's CHP Workgroup that:

1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
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5. Considered the CHP's ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity | Strong relationship throughout the process | Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020 |
<table>
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<tr>
<th>Organization</th>
<th>Involvement Details</th>
<th>Relationship Details</th>
<th>Community Engagement Details</th>
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<td>Traditional Health Workers Workgroup</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that: 1. Established the process; 2. Reviewed all Outcomes, Indicators, and Local Committee recommendations; 3. Discussed data; 4. Agreed to a set of factors or values for consideration; 5. Considered the CHP’s ability to impact pilot project prioritization; 6. Agreed that equity, social determinants of health, and care coordination are guiding principles 7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will be completed by March 2020</td>
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<tr>
<td>Family Tree Relief Nursery</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
<td>Outreach to all possible community partners will occur by March 2020</td>
</tr>
<tr>
<td>Benton County Health Department</td>
<td>Involved in developing the most current CHP as part of the CAC’s CHP Workgroup that:</td>
<td>Strong relationship throughout the process</td>
<td>Strategic planning to ensure full outreach and engagement of community partners will</td>
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</table>
1. Established the process;
2. Reviewed all Outcomes, Indicators, and Local Committee recommendations;
3. Discussed data;
4. Agreed to a set of factors or values for consideration;
5. Considered the CHP’s ability to impact pilot project prioritization;
6. Agreed that equity, social determinants of health, and care coordination are guiding principles
7. Agreed on Health Impact Areas, Outcomes and Indicator Concepts, and Areas of Opportunity

be completed by March 2020

<table>
<thead>
<tr>
<th>Culturally specific organizations and organizations that work with underserved or at-risk populations (list in this column below).</th>
<th>Albany InReach Services</th>
<th>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</th>
<th>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</th>
<th>Identified as a possible contributor of the CHA/CHP through an environmental scan</th>
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<tr>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<td>Community Outreach, Inc.</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<td>Strengthening Rural Families</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<tr>
<td>The Arc of Benton County</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<td>Veterans Employment Services</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<tr>
<td>Progressive Options</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<tr>
<td>Centro de Ayuda</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
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<td>Other organizations (list in this column below).</td>
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<tr>
<td>Lincoln County Schools</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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<tr>
<td>Corvallis School District</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP</td>
<td>Identified as a possible contributor of the CHA/CHP through an environmental scan</td>
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</tbody>
</table>
Linn Benton Lincoln Education Service District | Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP | Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP | Identified as a possible contributor of the CHA/CHP through an environmental scan
---|---|---|---
Greater Albany Public Schools | Strong partnership with IHN-CCO, no participation developing the IHN-CCO CHA/CHP | Identified as a possible contributor for the CHA/CHP through an environmental scan | Outreach to all possible community partners will occur by March 2020

*The four key domains of social determinants of health are economic stability, education, neighborhood and built environment, and social and community health.

**Engagement activities must begin by March 31, 2020 and applicant will report on progress through the June 2020 CCO CHP progress report.
Table 5: Assessment of existing social determinants of health priorities and process to select Year 1 social determinants of health priorities

All applicants must complete this full table to describe how the applicant will identify social determinants of health ("SDOH-HE") priorities to meet the CCO SDOH-HE spending requirements. Housing must be included as one of the SDOH-HE spending priorities.

<table>
<thead>
<tr>
<th>Part 1. List of existing SDOH-HE CHP priorities* in applicant's proposed service area from its own CHP or other existing CCO, local hospital, local public health authority and/or tribal CHPs, if applicable. Add additional rows as needed.</th>
<th>Part 1a. Source for priority (i.e. which CHP it came from).</th>
<th>Part 1b. Whether priority describes a health outcome goal (i.e. addressing food insecurity to address obesity as a health issue) or priority populations (i.e. addressing early childhood education for children as a priority population) or other.</th>
</tr>
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<tbody>
<tr>
<td>Housing and Transportation</td>
<td>Benton County Community Health Improvement Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Nutrition and Healthy Foods</td>
<td>IHN-CCO’s CAC Community Health Improvement Plan, Lincoln County Community Health Improvement Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Youth Mentoring</td>
<td>Lincoln County Community Health Improvement Plan</td>
<td>Priority populations</td>
</tr>
<tr>
<td>Community Navigator HUB Model</td>
<td>Lincoln County Community Health Improvement Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Food insecurity</td>
<td>Benton County Community Health Improvement Plan, Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Housing</td>
<td>IHN-CCO’s CAC Community Health Improvement Plan, Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Employment</td>
<td>Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
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<tr>
<td>Category</td>
<td>Description</td>
<td>Health outcome goal</td>
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<tr>
<td>Education</td>
<td>Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
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<tr>
<td>Environmental Issues</td>
<td>Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Transportation</td>
<td>IHN-CCO’s CAC Community Health Improvement Plan, Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Safe communities</td>
<td>Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan, Samaritan Pacific Communities Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
<tr>
<td>Child abuse and neglect</td>
<td>IHN-CCO’s CAC Community Health Improvement Plan, Samaritan Albany General Community Benefit Plan, Samaritan Lebanon Community Hospital Community Benefit Plan, Good Samaritan Regional Medical Center Community Benefit Plan, Samaritan North Lincoln Hospital Community Benefit Plan</td>
<td>Health outcome goal</td>
</tr>
</tbody>
</table>
**Part 2.** Description of process through which the applicant will identify and vet SDOH-HE priorities** in line with CHP priorities for submission to OHA by March 15, 2020. This must include, timelines, milestones, methods for vetting selected priorities with community partners (such as those described in Table B, Part 1) and CAC, and planned actions to clarify and define CCO housing priority in line with statewide priority.

- Process may also include planned actions to identify additional community-based SDOH-HE priorities from CHP priorities.
- If housing has not been identified as a priority in existing CHPs, note that housing must still be selected as an SDOH-HE priority. Consider adding the housing priority in alignment with either a health outcome goal or priority population identified in Part 1b.

The Social Determinants of Health Workgroup of the Delivery System Transformation Committee took the lead on identifying social determinant of health priority areas beginning in October 2018 through the below process. The SDoH Workgroup is comprised of community-based agency representatives, physical health clinic leadership, FQHC leadership, CAC representatives, representatives for all THW types, and more.

The SDoH Workgroup began the process by inviting all DST Workgroups to be a part of the strategic prioritizing thereby ensuring the priorities were community-driven. Early in the discussion the SDoH workgroup acknowledged that health equity and social determinants of health are intertwined; one cannot be addressed without the other. Inherent in all discussions and development of priority areas is the consideration of health equity, and an effort to reduce health disparities. The Health Equity Workgroup, Universal Care Coordination Workgroup, and Traditional Health Worker Workgroup were all highly involved in the process through monthly collaborative meetings. The process began with a literature review, environmental scan, and interviews with over 30 regional agencies. The next step was to engage the CAC by reviewing the CHP and requesting CAC input. The results of all this information gathering was to narrow the focus to three SDoH priority areas: housing, transportation, and food security. Once identified, the strategic plan for recommendations for IHN-CCO was developed. The goal was to identify foundational areas and achievable action items for IHN-CCO to adopt in order to appropriately and successfully affect SDoH areas. See graphic below that delineates how IHN-CCO is identifying SDoH priority areas. A version of this process will occur every two years to ensure up-to-date focus on SDoH priority areas.

Once identified, the SDoH Workgroup developed the methodology for IHN-CCO to fund projects that affect these areas. The first is to review past community-based pilot projects to build on successful strategies, including the Health and Housing Planning Initiative, the Children’s SDoH and ACEs Screening, and the Social Determinant of Health Screening with a Veggie RX Intervention pilots. The second recommendation is to do a call for proposals and select pilots that address specific housing, transportation, and food security areas. Thirdly, the SDoH Workgroup took it upon themselves to write into the recommendations that they will mentor new pilots and continue to make recommendations to IHN-CCO regarding successful strategies. The SDoH Workgroup also will work with IHN-CCO to identify and document policy/advocacy positions regarding housing, food security, and transportation to support community, state, and federal initiatives. Finally, the SDoH Workgroup and IHN-CCO have committed to foster linkages between county and hospital CHPs in addition to the CAC and IHN-CCO CHP to ensure alignment and connections among all CHPs. The housing area specifically calls for funding safe, stable, affordable housing services and supports within the parameters of allowable Medicaid funding and that builds on strategies developed through previous DST pilots. The call for proposals will ask for pilots that focus on the following strategies for the overall IHN-CCO population:

- Assisting individuals/families to get into housing;
- Supporting people to stay in housing (eviction prevention);
- Improvements that promote healthy homes; and
- Bringing health and wellness options into housing (such as; education, gym equipment, classes).

<table>
<thead>
<tr>
<th>Social Determinants of Health Workgroup Leads Priority Area Discussions</th>
<th>Literature Review, Key Informant Interviews, Environmental Scan</th>
<th>Crosswalk of all Information Gathered Developed</th>
<th>Collaborative Workgroup Discussions and Recommendations Developed</th>
<th>Delivery System Transformation Committee and Regional Planning Council Approval</th>
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</thead>
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<tr>
<td>September 2018</td>
<td>October 2018</td>
<td>November 2018</td>
<td>December 2018 - February 2019</td>
<td>January 2019</td>
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<tr>
<td>SDuH Workgroup Convenes All Other DST Workgroups</td>
<td>CHA/CHP Review</td>
<td>Priority Areas Identified</td>
<td>Collaborative Workgroup Approval</td>
<td>February 2019</td>
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<td>March 2019</td>
</tr>
</tbody>
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*Applicants must include description of housing priority if already identified in CHPs. (e.g. housing overall, housing for targeted populations).

**The four key domains of social determinants of health are economic stability, education, neighborhood and built environment, and social and community health. Refer to the Social Determinants of Health and Health Equity Glossary reference document.
Attachment 10: RFA Community Engagement Plan

General Component

1ab. InterCommunity Health Network Coordinated Care Organization (IHN-CCO) embraces a collaborative model called Collective Impact; bringing together providers, community partners, local government, citizens, and members to transform health in our region. IHN-CCO has identified stakeholders in the past seven years that coincide with the identified stakeholders from the Oregon Health Authority; OHP consumers, community-based organizations that address disparities and the social determinants of health, physical health providers, oral health providers, traditional health workers, long term care services, hospice, palliative care, health care interpreters and translators, behavioral health providers, bilingual and bicultural providers, the Regional Health Equity Coalition, the Linn Benton Lincoln Early Learning Hub, Benton, Lincoln, and Linn counties public health authorities, Benton, Lincoln, and Linn county mental health authorities, Benton, Lincoln, and Linn county local governments, the Community Advisory Council (CAC) and the Confederated Tribe of Siletz Indians. See Community Engagement Plan: Table 1 for full list of identified and specific stakeholders. These stakeholders are aligned with the components of success for the Collective Impact Model; Common Agenda, Shared Measurement, Mutually Reinforcing Activities, and Continuous Communications, with IHN-CCO as the backbone organization responsible for coordination with participating organizations.

2ab. The major projects currently identified as mechanisms for community engagement through the Collective Impact Model are:

   I. Unite Us Referral Network
   The Unite Us Referral Network project is a high impact project. Unite Us networks digitally interconnect health and community providers, allowing them to fully integrate the social determinants of health into patients’ care, track their progress throughout their total health journey, and report tangible outcomes across a full range of services in a centralized, cohesive, and collaborative ecosystem. It impacts the entire community; anyone responsible for referrals to social determinants of health organizations, physical health clinics, oral health organizations, behavioral health services, and more. Because of the high impact, there is varying levels of ease in the community regarding launch and adoption. IHN-CCO has decided it should be community driven and led with shared decision-making between participating organizations and IHN-CCO. IHN-CCO has set the Universal Care Coordination Workgroup (an open and public workgroup) as the body that identifies roles and responsibilities for the organizations and for project management. The Universal Care Coordination Workgroup consistently has members of the community, medical clinic representatives, community-based organization leaders, CAC representatives, and other interested parties attend.

   II. Delivery System Transformation Request for Proposal
   The Delivery System Transformation Request for Proposal process is a medium impact project considering that most funding decisions are widely accepted by the community and is not controversial. However, the level of engagement asked for from the community is high with shared decision-making to ensure alignment throughout the region. The Delivery System
Transformation Committee (DST) is open to anyone who can positively affect the health outcomes of IHN-CCO members and voting on funding recommendations is achieved through consistent attendance and signing a conflict of interest and responsibilities agreement.

III. Health Equity Workforce Development
The development of the Health Equity Workforce is another project that has high impact on the community and that IHN-CCO is engaging health equity experts on to ensure the program is successful through information, consultation, involvement, and collaboration. The Health Equity Workgroup created a strategic plan that will support this work and utilize community input. The Health Equity Workgroup consistently has members of the community, medical clinic representatives, community-based organization leaders, CAC representatives, and other interested parties attend.

IV. Social Determinants of Health Spending
The committee is highly involved in determining how IHN-CCO will be spending funds on social determinants of health projects. Through the Delivery System Transformation Committee and the Social Determinants of Health Workgroup, priority areas have already been identified for 2020 SDoH/HE spending. These funds will be given to engaged social determinant of health agencies through a targeted request for proposal process.

V. Behavioral Health System Strategic Planning and System Redesign
The community is highly involved with the strategic planning and redesign of the Behavioral Health System through consistent and open communication and connections in the Behavioral Health Quality Committee. This committee is comprised of behavioral health providers, primary care providers, Benton, Lincoln, and Linn counties public health authorities, Benton, Lincoln, and Linn counties mental health authorities, Samaritan Health Services Care Management, Federally Qualified Health Centers, IHN-CCO Quality Department, IHN-CCO Medical Management, Department of Human Services (DHS), addiction and recovery providers, and IHN-CCO leadership.

VI. The Regional Health Education Hub
The IHN-CCO funded Regional Health Education Hub is increasing outreach to community members to more fully engage IHN-CCO members in their health. Part of the strategic plan of the hub is to engage community members and community organizations in the decision-making process. Current partners include Samaritan Health Services, IHN-CCO, Benton County, Lincoln County, Linn County, and the Oregon Cascades West Council of Governments.

3. By participating in local advisory committee meetings, the regional CAC representatives, a variety of community partners, and community members who drop in from time to time, work together in the process and create recommendations which are sent up to the IHN-CCO via the CAC. The CAC also encourages all three county Local Advisory Committees to engage with IHN-CCO. The IHN-CCO Board of Directors reserves a position on the Board for an IHN-CCO member. This ensures a voice in the CCO decision-making process.

4. Through the Delivery System Transformation Committee of the Regional Planning Council, the member voice will be elevated. The DST’s 2019 spending on pilot projects will focus on
social determinants of health, but with the requirement that the funded organization include a member feedback loop and surveys regarding member experience. The feedback and survey results will be presented to IHN-CCO as recommendations for future strategic planning and operations. The CAC Coordinator is also a member of the OHA Recruitment and Engagement Committee and consistently brings back new information for IHN-CCO to use in planning.

5. Barriers to community engagement that exist in Benton, Lincoln, and Linn counties include:
   - Rural versus urban access issues
   - Geographical barriers between counties
   - Communication gaps

IHN-CCO, through pilot projects, the Regional Health Education Hub, IHN-CCO website, MyChart, and through new quality initiatives, will address the barriers through outreach, increased communication, and other strategies including video conferences and location changes for committees. The DST and Workgroups focus on strategic planning that addresses the gaps in partnerships. Currently the DST is focused on engaging the community partners that are missing from the table. The DST and Workgroups continually renew strategic plans and charters with member roles and responsibilities to ensure voices new and old to the conversation are heard.

6. Continuous quality improvement of community engagement will occur through feedback loops with the CAC and IHN-CCO Workgroups. Surveying members on community engagement will occur at these committees and will include a gap analysis. The results will be shared back through the Delivery System Transformation Committee, Workgroups, and the CAC.

**CAC Component**

1b. The IHN-CCO CAC ensures that the integrated healthcare needs of Benton, Lincoln, and Linn County InterCommunity Health Network Coordinated Care Organization (IHN-CCO) members and their communities are effectively and efficiently addressed. The Council advises and makes recommendations to the IHN-CCO to aid in strategic planning and implementation to improve the health and healthcare of those enrolled in the Oregon Health Plan (OHP). The relationship between the CAC and the IHN-CCO is intended to be inclusive, collaborative, and of mutual support to further the optimal healthcare services for the IHN-CCO membership. IHN-CCO will provide regular data reports to, timely feedback to, and active participation in, the CAC.

The IHN-CCO CAC consists of 19 Representatives:
   - IHN-CCO members, parents, caregivers, or legal guardians of IHN-CCO members must constitute a majority of the membership.
   - Benton, Lincoln, and Linn counties are each represented by four IHN-CCO members, one community member, one county staff person, and the CAC Chair.
   - A past chair may serve one term as an ex officio (and therefore a non-voting, non-officer) member of the CAC.

The work of the CAC is coordinated and supported by the Regional Planning Council Management Group (RPCMG) and the Communication Coordination Committee (CCC). The
CAC Communication Coordination Committee consists of the officers of the CAC and its local committees and is staffed by the IHN-CCO CEO, a County Health Administrator, the OHA Innovator Agent, and the CAC Coordinator. This group meets regularly to share information, be informed, provide input, plan and problem-solve, and prepare for bi-monthly CAC meetings. This group works together to support the work of the CAC and ensure alignment among local community improvement or benefit plans.

1c. Counties maintain a pool of CAC applicants, so they can recommend additional applicants to the IHN-CCO Board of Directors as needed. They work together with the IHN-CCO CEO and the CAC Coordinator. Representatives include members of the community, and each county government served by the IHN-CCO, with an effort to strive for diverse membership with an emphasis on those representing populations who experience health disparities. IHN-CCO and the CAC will develop a strategy to further connect and engage with the Confederated Tribes of Siletz Indians. CAC members are ensured at least one position on the IHN-CCO Board of Directors. IHN-CCO is also holding joint meetings with the CAC as public and open meetings.

More than half of IHN-CCO members live in rural areas (about 36,900). The most common language spoken by IHN-CCO members is English (94%). Spanish as a primary language comes in at 4.6% and 2% say they prefer another language. Approximately 36% (25,400) of IHN-CCO members have been diagnosed with a mental illness with 16% (11,500) diagnosed with Severe and Persistent Mental Illness. Nine percent (6,200) of IHN-CCO members have at least one disability that limits their ability to work. The CAC currently reflects these population characteristics: 37% of CAC representatives have a past or current behavioral health issue, 5% are bicultural/bilingual, over 50% are from rural areas, and 11% have a physical disability.

1d. Regarding collaboration with other CCOs, IHN-CCO will not be requesting zip codes in any other county but will be happy to support other CCO’s Community Health Assessments (CHAs) and Community Health Improvement Plans (CHPs) as needed and requested.

**CHA/CHP component**

1/2/3/4. The CHA/CHP is an extremely collaborative process in the Benton, Lincoln, and Linn County region. IHN-CCO has had a community advisory council since 2012 and has ensured that collaboration occurs with a wide variety of community partners and is engaged with all other regional community benefit or improvement plans. The future strategy is to completely align priorities by utilizing the Regional Health Assessment as the base data set all improvement plans are based off. Also, the county, hospital, and CAC improvement plans will work together through a liaison or collaborate workgroup to ensure alignment. See Attachment 10: RFA Community Engagement Plan Required Tables for more information.

5. The IHN-CCO DST has a process in place to ensure health-related services, community benefit initiatives, and spending are directly aligned with the CAC’s Community Health Improvement Plan. The DST targets and funds only pilot projects that directly and positively affect members in the priority population or through the health impact areas identified in the CAC’s CHP. Please refer to RFA Attachment 10 Narrative, C1a. for further details and information.
Attachment 10: Social Determinants of Health/Health Equity Questionnaire

Community Engagement

A1a. Did IHN-CCO obtain Community involvement in the development of the Application?

Yes, IHN-CCO obtained community involvement in the development of the CCO 2.0 application and strategic planning through the following councils, committees, and workgroups:

- Behavioral Health Quality Committee
- Community Advisory Council
- Delivery System Transformation Committee
- Health Equity Workgroup
- Regional Planning Council
- Social Determinant of Health Workgroup
- Traditional Health Workers Workgroup
- Universal Care Coordination Workgroup

The following organizations provided specific narrative or data information to the CCO 2.0 Application:

- Advantage Dental
- Benton County Health Department
- Communities Helping Addicts Negotiate Change Effectively
- Community Doula Program/Heart of the Valley Birth and Beyond
- Community Health Centers of Benton and Linn Counties
- Family Tree Relief Nursery
- Linn County Mental Health
- Olalla Center for Children and Families
- Old Mill Center for Children and Families
- Samaritan Health Plans
- Samaritan Health Services


Social Determinants of Health and Health Equity (SDOH-HE) Spending, Priorities, and Partnership

B1a. Does IHN-CCO currently hold any agreements or MOUs with entities that meet the definition of SDOH-HE partners, including housing partners? If yes, please describe the agreement.

IHN-CCO holds agreements and contracts with many SDoH/HE partners:

- Willamette Neighborhood Housing Services, Family Tree Relief Nursery, and Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.) all operate under a value based
payment contract with IHN-CCO. These contracts all have tracking systems in place to determine value of services with target drivers for cost and outcomes. Review of the performance metrics occurs periodically to ensure success and sustainability of the programs.

The Early Learning Hub of Linn, Benton, and Lincoln Counties, the Confederated Tribes of Siletz Indians, Benton County Public Health, Lincoln County Health and Human Services, Linn County Public Health, Marion County Public Health, Community Outreach, Inc., Yes House, Milestones Women’s Program, Amazing Treatment, Teen Challenge International, Reconnections Alcohol and Drug, Children’s Farm Home, Olalla Center for Children and Families, Old Mill Center for Children and Families, Lincoln County Children’s Advocacy Center, Oregon West Cascades Council of Governments, and Morrison Child and Family Services are all contracted providers with IHN-CCO. These contracts are standard provider contracts meeting all the requirements of the Oregon Administrative Rules and the Code of Federal Regulations including but not limited to:

- Provision of services
- Covered services
- Encounter data
- Quality assurance
- Confidentiality
- Patient rights
- Reimbursement
- Submission and payment of claims
- Liability
- Problem resolution
- Eligibility verification
- Screening services
- Cost, utilization, and membership reporting

These contracts are reviewed and negotiated periodically, and encounter data is evaluated reviewed through the performance metrics lens.

The Linn-Benton Health Equity Alliance, the Community Doula Program/Heart of the Valley Birth and Beyond, Community Roots/Olalla Center for Children and Families, the Corvallis School District 509j, the Homeless Resource Team/Samaritan Health Services, the Regional Health Education Hub/Samaritan Health Services Health Education, and the Veggie Rx in Lincoln County program have current pilot contracts with IHN-CCO Transformation. The contracts support innovative approaches toward serving IHN-CCO members that focus on higher quality, better access, and lower overall costs. The contracts focus on learning and innovation through project goals, measures, and outcomes. Sustainability, health equity, and social determinants of health are required elements. Performance is measured through quarterly reporting on metrics specific to each project or program. For example, the Community Roots pilot with Olalla Center for Children and Families must show improvements in family nutrition and recreation through demonstrated healthier cooking, eating, and playing habits of IHN-CCO members.
B1b. Does IHN-CCO currently have performance milestones and/or metrics in place related to SDOH-HE? These milestones/metrics may be at the plan level or Provider level. If yes, please describe.

Performance milestones at the plan level for SDoH/HE include integrating SDoH reporting into the claims system through encouraging provider diagnosis, utilizing the Unite Us Network, and measuring Delivery System Transformation Committee (DST) pilot projects on how well SDoH/HE programs achieve goals.

The Unite Us Referral Network project is a high impact system that will allow for networks to digitally interconnect health and community providers, allowing them to fully integrate the social determinants of health into patients’ care, track their progress throughout their total health journey, and report tangible outcomes across a full range of services in a centralized, cohesive, and collaborative ecosystem. The first milestone (to be achieved in 2019) is a successful launch of the network with early adopters in Linn County across the continuum of social determinants of health; housing, food security, transportation, and more.

The current measures IHN-CCO is looking at for SDoH/HE milestones are:

- Reduced costs for IHN-CCO members
- Filling gaps in service - organizations engaged that were recognized as missing
- Transition from homeless to housed
- Percent that stay in stable housing
- Percent that move into own home
- Closed-loop referrals - how many referrals are accepted and completed
- Length of time from referral to appointment
- Adoptability - how many licenses are being used and how often
- Eviction prevention rates

These measures and outcomes will be finalized once agreed upon by the community and IHN-CCO in the DST and the Universal Care Coordination Workgroup.

B1c. Does IHN-CCO have a current policy in place defining the role of the CAC in tracking, reviewing and determining how SDOH-HE spending occurs? If yes, please attach current policy. If no, please describe how IHN-CCO intends to define the role of the CAC in directing, tracking, and reviewing SDOH-HE spending.

IHN-CCO does not yet have an official written policy in place defining the role of the Community Advisory Council (CAC) in tracking, reviewing and determining how SDoH/HE spending occurs. However, through the Social Determinants of Health Workgroup and the DST, it is planned to utilize the DST’s current Request for Proposal (RFP) process for pilots. The RFP will focus on the recommended priority areas set forth in the SDoH Workgroup’s recommendations to IHN-CCO document; housing, transportation, and food security which was based in part on the CAC’s Community Health Improvement Plan (CHP). CAC Representatives also sit on the committees making the decisions; the Regional Planning Council and the Delivery System Transformation Committee. The strategic plan for CAC involvement also includes...
regular communication and outreach regarding possible decisions and requests for feedback when decisions on spending are being made.

B1d. Please describe how IHN-CCO intends to award funding for SDOH-HE projects, including:
   (1) How IHN-CCO will guard against potential conflicts of interest;
   (2) How IHN-CCO will ensure a transparent and equitable process;
   (3) How IHN-CCO will demonstrate the outcome of funded projects to Members, SDOH-HE partners, and other key stakeholders in the Community.

The Delivery System Transformation Committee (DST), a committee of the Regional Planning Council (RPC), will release a Request for Proposal (RFP) targeting SDoH/HE projects and organizations. For the past four years, the DST has released RFPs for pilot projects, and began targeting SDoH/HE pilot projects in 2017. All pilots are required to have a plan to address SDoH/HE throughout their project.

The 2019 RFP will target organizations and projects that directly impact housing, transportation, and food security through widespread outreach, a press release, and word of mouth. DST members are highly engaged in the process and previous RFPs have resulted in a high number of intended IHN-CCOs, creating a competitive process that drives innovative strategies.

The DST guards against conflict of interest by requiring voting members to abstain from voting on any pilot that they have a vested interest in. Voters must sign an agreement stating this. The RFP process is transparent in that the meetings are public and open to anyone that can positively affect the health outcomes of IHN-CCO members. Materials and communications are posted on IHNtogether.org, emailed to members, and provided to anyone that requests the information. The same goes to the outcomes of funded projects, all proposals, measures and outcomes, goals, progress reports, and final reports are reported to the DST and RPC as well as being posted publicly on IHNtogether.org.

B1e. For the statewide housing priority only: please provide proposed metrics for assessing the impact of investments in this area.

The proposed metrics for assessing the impact of investments in housing includes the following:

- Transition from homeless IHN-CCO members to housed
- Percent of IHN-CCO members that stay in stable housing
- Percent of IHN-CCO members that move into their own home
- Reduction in eviction prevention rates for IHN-CCO members

These metrics were created and defined by evaluation of the IHN-CCO CAC’s CHP.

B2a. Please describe the criteria IHN-CCO will apply when selecting SDOH-HE partners.

SDoH/HE organizations and projects must address at least one of the three SDoH priority areas identified by the SDoH Workgroup (housing, transportation, food security) as well as incorporate and promote health equity and IHN-CCO member feedback loops to qualify for funding.
Organizations must also address at least one component of the Transformation and Quality Strategy (TQS) and the CHP Health Impact Areas. Additional evaluation considerations include:

- Create opportunities for innovation and new learning for the DST
- Yield measurable outcomes that are new or different from previously funded pilot projects
- Establish new connections within and between the healthcare delivery system and the community
- Plan to sustain and continue project after DST funding ends
- Exhibit consideration of alternative funding sources
- Clearly articulate what part of the Medicaid population is affected and how
- Target areas of healthcare associated with escalating healthcare costs
- Develop and validate strategies for collaboration and creating interconnections between community services and healthcare systems
- Demonstrate clear linkage to the Patient-Centered Primary Care Home

Additionally, funds cannot be used to support construction or renovation, equipment costs greater than $20,000, vehicle purchases, work that cannot be measured, or organizational expenses. SDoH/HE pilot projects must also participate in at least one community-led DST Workgroup.

**B2b. Please describe how IHN-CCO will broadly communicate the following information to the public and through its network of partners: its SDOH-HE spending priorities, the availability of funding for projects, how interested parties can apply for consideration, and the project selection process.**

The DST disseminates the information via email, word of mouth, media outlets, and IHNtogether.org. The RFP document with information regarding spending priorities, availability of funding, contact information, pilot selection and further details is disseminated to providers, community organizations, and the greater community. The RFP document is written to be accessible to a broad array of organizations, from grassroots organizations with little technology access to the highly sophisticated and technologically complex medical organizations in the region. The IHN-CCO Transformation Department is readily available to answer questions and support through communication and technical assistance to potential pilot projects.

**B2c. Please describe how IHN-CCO will track and report SDOH-HE expenses and outcomes, including technological capacity and process for sharing and collecting data, financial systems, and methods for data collection.**

IHN-CCO has the ability to track and report SDoH/HE expenses and outcomes through Transformation invoicing, reporting, and project management. Through the work of IHN-CCO’s DST committee and workgroups, IHN-CCO will determine the best way to collect data from SDoH/HE partners on a case-by-case basis, understanding the technological differences among organizations. IHN-CCO will support and help standardize data collection with these organizations as much as possible. IHN-CCO’s core systems (data collection and storing and financial) have the ability to store this information and in turn, this information can be reported.
back out. This will include partnering with the Health Equity & SDoH Workgroups to identify a common demographic data set to use as an additional dimension in the risk stratification process. The initial phase will be to identify the data source, procure the data and then propagate it down to the systems used in the risk stratification process.

IHN-CCO has incorporated SDoH/HE into the Health Information Technology Strategic Plan to ensure we are able to stratify our members across several dimensions, including gender, race, ethnicity and other health factors that could reveal disparities.


Health-Related Services (HRS)

C1a. Please describe how HRS Community benefit investment decisions will be made, including the types of entities eligible for funding, how entities may apply, the process for how funding will be awarded, the role of the CAC (and Tribes/tribal advisory committee if applicable) in determining how investment decisions are made, and how HRS spending will align with CHP priorities.

The DST will decide which HRS community benefit initiatives will be made through strategic planning, environmental scans, review of best practices, review of past and current pilots, and the aforesaid RFP process. The RFP process begins with the RFP release through the press and ends with funding recommendations made to IHN-CCO. Widespread outreach is done to reach rural and urban organizations in all three counties as well as through different mediums to reach community-based organizations (including grassroots and cultural organizations), medical clinics and agencies, behavioral health providers, oral health organizations, local public health authorities, and more.

Transformation pilot projects are innovative ideas that implement collaborative strategies with a focus on IHN-CCO members. Pilots align with IHN-CCO goals and Collective Impact process, have described outcomes, and focus on the triple aim of better health and better care at reduced cost. All pilots are required to address (and many directly focus on) creating health equity and addressing SDoH. The priorities in the CHP and its 2016 Addendum have consistently been and will continue to be used to prioritize pilot projects. The 2019 CHP will also be used further, particularly the outcomes and indicators specified by the CAC.

In 2016 and 2017, IHN-CCO administered a pre/post survey to the CAC to determine knowledge of pilot projects and communication preferences. The results indicated high knowledge of pilot projects, but also a desire from CAC members to receive more regular and simpler documentation on IHN-CCO Transformation projects than was previously disseminated. The Pilot Summaries with CHP Areas document was created by the Transformation Department and has received extensive positive feedback from the CAC and other partners and organizations around the state. The document clearly shows the link between CAC CHP areas and the pilot projects. The document strives to be clear and concise while still providing enough information to be informative and interesting, taking health literacy standards and communication styles into account.
Community Advisory Council membership and role

D1a. Please identify the data source(s) Applicant proposes to use when defining the demographic composition of Medicaid Members in the Applicant’s Service Area.

IHN-CCO will use claims data and the Oregon Health Authority dashboard membership data to define the demographic composition of IHN-CCO members in Benton, Lincoln, and Linn counties.

The CAC currently reflects most of the population characteristics. Thirty-seven percent of CAC members have a past or current behavioral health need including mental health diagnosis or substance abuse and addiction, 5% are bicultural/bilingual, over 50% are from rural areas, 16% have experienced homelessness, and 11% have a physical disability.

The CAC and the IHN-CCO Board of Directors are also beginning to hold joint and public meetings. Two are currently scheduled and it is anticipated that these will continue throughout the IHN-CCO contract. The IHN-CCO Board is also adding another position on the Board specifically for an OHP consumer, making two total positions dedicated to OHP consumers.

D2a. See Attachment 10: Community Engagement Plan for more information.

Health Equity Assessment and Health Equity Plan

E1a. Please briefly describe the Applicant’s current organizational capacity to develop, administer, and monitor completion of training material to organizational staff and contractors, including whether IHN-CCO currently requires its providers or subcontractors to complete training topics on health and Health Equity.

IHN-CCO develops, administers, and monitors completion of training material to staff and contractors through in-person and web-based training modules and programs. IHN-CCO currently requires staff to undergo Trauma Informed Care training and annual cultural competence training. Required cultural responsiveness and implicit bias training strategic plans are in the works and will be implemented in 2020. IHN-CCO is partnering with the Linn-Benton Health Equity Alliance to provide additional and more in-depth provider and staff trainings in the region, with topics including cultural responsiveness, eliminating health inequities, and implicit bias. Multiple Health Equity Summits were held in Benton, Lincoln, and Linn counties in 2018-2019.

IHN-CCO designated a single point of accountability with budgetary decision-making authority and health equity expertise, including DELTA program (Developing Equity Leadership Through Training and Action) certification. IHN-CCO is committed to maintaining sufficient internal infrastructure and investments to coordinate and support health equity trainings and activities. Samaritan Health Services also has an Equity and Inclusion Council that will develop initiatives that are aligned with IHN-CCO’s Health Equity Plan with member involvement in both areas.
IHN-CCO’s Health Equity Strategic Plan’s vision is a community where all members of IHN-CCO can meet their potential for optimum health and well-being. The mission is that IHN-CCO meets the culturally diverse needs of Members and eliminates health disparities, including promoting a diverse workforce.

Health Equity Strategic Plan Goals:
A. Increase the availability and knowledge of quantitative and qualitative data to inform, prioritize, and monitor strategies to meet the needs of culturally diverse members and to reduce health disparities.
B. Support and champion cultural competence and health equity trainings for the IHN-CCO Health Equity Workgroup, IHN-CCO staff, IHN-CCO providers, and other community stakeholders.
C. Support and encourage IHN-CCO provider and staff composition that reflects member diversity.
D. Increase, retain, and sustain support for Traditional Health Workers (THWs) to address health disparities across IHN-CCO services and in Linn, Benton and Lincoln counties.
E. Ensure regular communication between the IHN-CCO Health Equity Workgroup, IHN-CCO staff, IHN-CCO DST Committee, IHN-CCO CAC, other stakeholders and IHN-CCO workgroups about health disparities and health equity activities in the community.

E1b. Please describe Applicant’s capacity to collect and analyze REAL+D data.

IHN-CCO has the ability to collect and analyze REAL+D data. Through the work of IHN-CCO’s Health Equity committee, IHN-CCO will determine the best process to collect this information from the member. Many workflows can be enhanced to collect this information and use it to include as part of our longitudinal patient record. IHN-CCO’s core system can store this information and in turn, this information can be reported back out. In addition, IHN-CCO plans to include these data elements as part of the risk stratification for members.

E2a. Please provide a general description of the Applicant’s organizational practices, related to the provision of culturally and linguistically appropriate services. Include description of data collection procedures and how data informs the provision of such services, if applicable.

IHN-CCO is committed to building capacity within the organization by raising awareness of the impacts of trauma and how to be inclusive and showcase culturally and linguistically appropriate services. Many of the community clinics, providers, and social services agencies are already actively training staff to provide Trauma Informed Care, Implicit Bias training, and other culturally and linguistically appropriate trainings. As the insurance provider, IHN-CCO has a special role in supporting our community to ensure that our members have access to the best possible care. IHN-CCO takes this opportunity to spread best practices and message trainings around culturally and linguistically appropriate service to provide the best service to our members and our delivery system.

IHN-CCO is continually undertaking a process of training, self-assessment, and identification of organizational actions and opportunities that will promote and support a more Trauma Informed system. Through electronic annual trainings, completion and scores are tracked. IHN-CCO
utilizes community partners, Community Health Improvement Plans, the Community Health Assessment, IHN-CCO enrollment data, and metrics to track the regions performance on providing culturally and linguistically appropriate services. IHN-CCO also tracks attendance at each training in Linn, Benton, and Lincoln counties and is surveying the community to determine what additional trainings, education, and input is still needed.

E2b. Please describe the strategies used to recruit, retain, and promote at all levels, diverse personnel and leadership that are representative of the demographic characteristics of the Service Area.

Strategies to recruit, retain, and promote at all levels, diverse personnel and leadership that are representative of the demographic characteristics of the Service Area. IHN-CCO is an affiliate of Samaritan Health Services (SHS), an integrated healthcare delivery system. Through the SHS Equity and Inclusion Council, best practices for recruitment of health care personnel and providers are disseminated through the organization, inclusive of Human Resources hiring and promoting practices. SHS Equity and Inclusion Council also has community members representing diversity and several key individuals have gone through training through Oregon Health Authority DELTA program (Developing Equity Leadership Through Training and Action).

The Health Equity Workgroup of the DST developed a strategic plan approved by IHN-CCO. One of the five components is Diverse Workforce with the goal of supporting and encouraging IHN-CCO provider and staff composition that reflects member diversity. The Health Equity Workgroup’s current action items are to collect demographic data on the current workforce, identify best practices for increasing and retaining health workforce diversity, and develop and present to IHN-CCO the recommendations for provider diversity to reflect diverse members.

Additionally, Traditional Health Workers have increased the diverse workforce that reflects IHN-CCO member composition. Partnering with IHN-CCO, Oregon State University and Heart of the Valley Birth and Beyond, the Community Doula Pilot trains bicultural and bilingual doulas that represent characteristics of IHN-CCO pregnant members to impact health outcomes for mothers and babies. Other sustained pilot programs for IHN-CCO members include bilingual health navigators embedded in schools, community health workers in Patient-Centered Primary Care Homes, and maternal care coordinators in obstetrics and gynecology clinics.

E2c. Please describe how Applicant will ensure the provision of linguistically appropriate services to Members, including the use of bilingual personnel, qualified and certified interpreter services, translation of notices in languages other than English, including the use of alternate formats. Applicant should describe how services can be accessed by the Member, staff, and Provider, and how Applicant intends to measure and/or evaluate the quality of language services.

IHN-CCO respects the dignity and the diversity of our members and the communities where they live. IHN-CCO serves the needs of people of all cultures, languages, races, ethnic backgrounds, abilities, religions, genders, sexual orientation, gender identification, and other special needs of our members. Member education materials are provided in both English and Spanish. All linked documents with the audience of IHN-CCO members are evaluated and approved by Oregon
Health Authority (OHA) as meeting the sixth-grade reading level standards. Authors of documents that are not subject to OHA review for evaluation of reading level will be asked to use standard, readily available tools to test that their content meets the sixth-grade reading level. If not able to do so, the author will be asked to provide a summary of the document that meets the sixth-grade reading level standards.

IHN-CCO ensures members’ linguistic needs are met to support the management and comprehension of their health care. IHN CCO contracts with Oregon Qualified or Certified Healthcare Interpreter services providers to deliver the largest variety of language options available, including but not limited to: spoken language other than English and sign language for the hearing or speech impaired. All interpreters are capable of translating clinical information effectively in English and the members’ primary language.

IHN-CCO provides information on linguistic interpreter service options and how to obtain services via member materials, provider manual, and public plan website. Materials are provided and available for all members and providers. IHN-CCO makes in person linguistic interpreter services available to its members and works with providers to ensure that services are delivered when needed.

IHN-CCO requires its contracted providers to meet the requirements of the Affordable Care Act (ACA) regarding linguistic interpretation, 42 CFR 92.201, section 1557. This required evaluation of compliance, language assistance services requirements, provision to offer and provide qualified interpreters, restriction of requirements of the persons to provide an interpreter, and ensuring persons are not required to accept language assistance services.

The IHN-CCO Health Equity Strategic Plan has called out Diverse Workforce as a priority area. The plan will focus on data collection of member and staff/provider demographics (including language) and comparison of member to staff/provider languages to determine access issues. The evaluation will consider location and type of service in order to identify gaps. Further analysis will identify barriers to appropriate quality access and action items will be created to ensure IHN-CCO has the systems in place to provide equal access regardless of preferred language or disability, including people who are deaf/hard of hearing.

E2d. Please describe how Applicant will ensure Members with disabilities will have access to auxiliary aids and services at no cost as required in 42 CFR 438.10, 42 CFR part 92, and Section 1557 of the Affordable Care Act. Response should include a description of how Applicant plans to monitor access for Members with disabilities with all contracted providers.

IHN-CCO staff and contracted providers (subcontractors) provide translation and interpretive services, large print, TTY, braille, and other auxiliary aids and services at member request. These are provided at no cost and in a culturally responsive manner. When members enroll into IHN-CCO their member handbook will provide them opportunity to request aids and services. Upon initial communication with providers they are offered auxiliary aids and services for their appointments and communication with provider offices. IHN-CCO care management staff include aids and service questions when completing screening and assessments for members who may need care coordination or case management.
IHN-CCO requires contracted providers (subcontractors) to comply with all federal and State laws and regulations including Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 (regarding education programs and activities) the Age Discrimination Act of 1975, the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and all amendments to those acts and all regulations promulgated thereunder. Subcontractor shall also comply with all applicable requirements of State civil rights and rehabilitation statutes and rules.

IHN-CCO will implement monitoring of access for auxiliary aids and services for Members with disabilities by having offices attest on an annual basis that they are complying with 42 CFR 438.10, 42 CFR part 92, and Section 1557 of the Affordable Care Act.

E3. Please see Attachment 10: Policies for additional information.

Traditional Health Workers (THW) Utilization and Integration

F1a. Does Applicant currently utilize THWs in any capacity? If yes, please describe how they are utilized, how performance is measured and evaluated, and identify the number of THWs (by THW type) in the Applicant’s workforce.

IHN-CCO utilizes four types of THWs; doulas, peer support specialists, peer wellness specialists, and community health workers, though several community health workers essentially operate as health navigators in schools and housing complexes. The number of THWs by THW type is below:

<table>
<thead>
<tr>
<th>THW Type</th>
<th>Number</th>
<th>Estimated Interactions in 2018</th>
<th>Payment Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doulas</td>
<td>5 (60 in training)</td>
<td>300</td>
<td>Grant, APM</td>
</tr>
<tr>
<td>Community Health Workers</td>
<td>40</td>
<td>&gt;100,000</td>
<td>Grant, APM, OHP state funds, HRSA, county funds, grant funds, donor funds</td>
</tr>
<tr>
<td>Peer Support Specialists</td>
<td>97</td>
<td>25,000</td>
<td>PMPM, grant programs, county programs, donor funds</td>
</tr>
<tr>
<td>Peer Wellness Specialists</td>
<td>3 (15 in training)</td>
<td>100</td>
<td>PMPM, grant programs, county programs, donor funds</td>
</tr>
</tbody>
</table>

IHN-CCO utilizes and evaluates THWs through value based payment contracts. These are evaluated and discussed on a quarterly basis with each agency to determine value of services, target drivers for cost and outcomes and review of the performance metrics. These contracts, data, and “Touch Tracking” or more currently, CareSTEPS, are used for utilization and baseline data. The THW Training Hub also has responsibility and capacity for fidelity monitoring and reporting accountability. The THW Workgroup will continue to develop, refine, and standardize tracking and payment systems. Other activities include monitoring and sharing developments in THW payment models at the state level by member participation in the Oregon Community Health Workers Association (ORCHWA) and the Traditional Health Workers Commission.
F1b. If Applicant currently utilizes THWs, please describe the payment methodology used to reimburse for THW services, including any alternative payment structures.

Contracted Traditional Health Worker (THW) agencies are reimbursed a HCPLan (Health Care Payment Learning & Action Network) category 4A value based payment model (VBP) where the THW receives a Per Member Per Month (PMPM) capitation for members enrolled in the programs based on monthly capacity reports submitted by three of the four agencies, and by members attributed to a PCPCH that the THW is working with in one of the four agency contracts. The agreement includes a Pay for Performance (P4P) component where the THW agency receives additional quality pool funds when at least 50% of the weighted metrics are achieved and can receive 100% of the quality pool funds when 80% are achieved. VBP contracts are evaluated and discussed on a quarterly basis with each agency to determine value of services, target drivers for cost and outcomes and review of the performance metrics.

F2a/F3. See Attachment 10: THW Integration and Utilization Plan.

G1a. See Attachment 10: RFA Community Engagement Plan.
Attachment 10: Traditional Health Workers (THW) Utilization and Integration Plan

F2a. Please submit a THW Integration and Utilization Plan which describes:

- IHN-CCO’s proposed plan for integrating THWs into the delivery of services;
- How IHN-CCO proposes to communicate to Members about the benefits and availability of THW services;
- How IHN-CCO intends to increase THW utilization;
- How IHN-CCO intends to implement THW Commission best practices;
- How IHN-CCO proposes to measure baseline utilization and performance over time; and
- How IHN-CCO proposes to utilize the THW Liaison position to improve access to Members and increase recruitment and retention of THWs in its operations.

IHN-CCO and the Delivery System Transformation Committee (DST), an IHN-CCO committee of the Regional Planning Council, is dedicated to improving the health of our communities by building on current resources and partnerships within the tri-county region. IHN-CCO and the DST support Traditional Health Workers (THW) as a critical component of the workforce, with a unique ability to address the social determinants of health of individuals living in Linn, Benton, and Lincoln counties. The DST has funded over $20 million in pilots and formed the Traditional Health Workers Workgroup. THWs have increased the diverse workforce that reflects IHN-CCO member composition. IHN-CCO recognizes the THW Workgroup as the experts in the field and look to the Workgroup for how to move forward. The THW Workgroup includes care coordinators from cross-sectors, peer-lead organizations, relief nursery, and Oregon State University among many others.

A strategic plan has been developed by the THW Workgroup to drive focus and change for the upcoming years. An emphasis on development of an expansion strategy for all types of THWs along with reaching out and identifying community agencies interested in utilizing THWs. The THW Workgroup will provide education and information to the interested agencies and determine what type of THW will best meet their service needs.

IHN-CCO has partnered with Benton County Health Department since 2013 to incorporate and build out the THW workforce and strategically implement THWs throughout the delivery system. Currently there are 145 THWs within our delivery system that work in clinics, housing complexes, schools, emergency departments, etc.

“The Tri-County Traditional Health Worker Training Hub” (THW Training Hub) was created with backbone support from Benton County Health Services in partnership with the THW Workgroup. Tri-County THW Training Hub is a collaborative approach based upon a collective impact model to facilitate change in the healthcare delivery system with coordination of multiple organizations. Adapted from Community Capacitation Center Multnomah County’s “We are Health” Community Health Worker training curriculum, the THW Training Hub modified it to suit the region’s needs by adding additional modules to satisfy training gaps. The Peer Wellness additional training is projected to be completed and implemented by fourth quarter of 2019.
The training is culturally competent and responsive/sensitive, and it is tailored towards our region, which allows for integration into the community in a culturally responsive way. The THW Workgroup will expand the number of certified THWs in the region through the development of the THW Training Hub. Support OHA certified curriculum for Community Health Workers, Navigators, Doulas, Peer Specialists, and Peer Wellness Specialists. Identify the frequency and type of THW training and mentoring program to be offered each year.

The training is comprised of 23 topic areas ranging from popular education, health literacy, communication, mental health, oral health, addiction and recovery and more. The Tri-County Traditional Health Worker Training expands over six weeks with sessions two times a week. Multiple partner agencies co-facilitate sessions that they are experts in.

Traditional Health Workers have increased the diverse workforce that reflects IHN-CCO member composition. Partnering with IHN-CCO, Oregon State University and Heart of the Valley Birth and Beyond, the Community Doula Pilot trains bicultural and bilingual doulas that represent characteristics of IHN-CCO pregnant members to impact health outcomes for mothers and babies. Other sustained pilot programs for IHN-CCO members include bilingual health navigators embedded in schools, community health workers in Patient-Centered Primary Care Homes, and maternal care coordinators in obstetrics and gynecology clinics.

An additional expansion focus is for the Clinical Community Health Worker (CHW)/Health Navigator (HN). The Clinical Community Health Worker (CHW)/Health Navigator (HN) requires specialized curricula and a mentoring program that provides additional training for THWs beyond the basic training to enhance their skills to work in a healthcare setting as a Clinical Community Health Worker/Health Navigator (Clinical CHW/HN).

Clinics interested in having a Clinical CHW/HN on-site will receive a formalized training approach for Clinic Managers and Clinical Care Teams to assist them in understanding how to successfully use Clinical CHW/HNs. A focus will be on identifying the frequency of Clinical CHW/HN training and mentoring program to be offered each year and determine how many Clinical CHW/HNs can be trained in each cohort. There are currently four Clinical CHW/HNs working in our region in four clinics.

The THW Workgroup has and will continue hosting Traditional Health Worker Meet and Greets in Lincoln and Linn/Benton counties. The outreach has been expansive to be as inclusive as possible. There was a concerted push to reach out to grassroots organizations for dissemination of information to the most appropriate individuals and particularly to rural areas. Increasing the breadth of THW repertoire provides opportunity for organizations to engage and find the right fit. Develop a THW network that will provide mentoring, supervision, and support for THWs in the tri-county region and will work with the Oregon Community Health Workers Association (ORCHWA) to aid in developing local support network and ensure networking opportunities in Linn, Benton, and Lincoln counties.

To continue recruitment and retention of the THWs workforce on-going continuing education units (CEU) training will be held to maintain credentialing for THW and activities to foster networking and connections among the THW workforce. Also, the THW Workgroup will
collaborate with other IHN-CCO Committees and Workgroups to support opportunities for other types of workers in the community to impact social determinants of health (example Community Paramedics and health educators). There is an opportunity to assess the feasibility and appropriateness of certification for other types of workers within the THW Training Hub. Continuing the conversations and collaborations, the THW Workgroup will support potential pilots, foster conversations and sharing among others doing similar work and encourage coordination with THWs.

Another collaborative approach is to connect with the THW Commission for best practices. Our region is fortunate to have a member on THW Commission. CHW Training Hub Coordinator of Community Health Centers of Benton & Linn Counties sits on the THW Commission ensuring quick responses and changes to best practices as outlined by the THW Commission. The CHW Training Hub Coordinator attends the THW Workgroup where the region’s THW organizations facilitate and drive change, allowing for smoother implementation of best practices. The THW Workgroup meets monthly and is in email contact if decisions need to be made prior to the monthly Workgroup meeting.

Contracted THW agencies receive a value based payment (VBP) of a Per Member Per Month (PMPM) capitation for members enrolled in the programs. This is based on monthly capacity reports submitted or by members attributed to a PCPCH that the THW is working with. The agreement includes a Pay for Performance component where the THW agency receives additional quality pool funds when at least 50% of the weighted metrics are achieved and can receive 100% of the quality pool funds when 80% are achieved. VBP contracts are evaluated and discussed on a quarterly basis with each agency to determine value of services, target drivers for cost and outcomes and review of the performance metrics. These contracts, data, and “Touch Tracking” are used for utilization and baseline. The THW Training Hub will have capacity for fidelity monitoring and reporting accountability. The THW Workgroup will continue to develop an VBP for certified THWs and to develop, refine, and standardize “Touch Tracking” and payment systems. IHN-CCO will have the ability to monitor and share developments in THW payment models at the state level by member participation (when possible) in the Oregon Community Health Workers Association (ORCHWA) and the Traditional Health Workers Commission.

Members are informed of the availability of THWs from language in the IHN-CCO handbook stating that getting the right care is a team approach with specially trained people to provide care. Care Coordination are also called CHW, Peer Wellness, THW, Health Navigators and more. We also utilize our website IHNtogether to share information about benefits including THWs and also provide information on the THW Workgroup and the Delivery System Transformation Committee and the work they are doing around THWs. IHN-CCO expansive partners also provide knowledge sharing and message spreading of THW services.

The THW Liaison position will work in tandem with the THW Workgroup to improve member access and increase recruitment and retention of THWs in the service delivery area. The THW Liaison position will build upon communication avenues already established and create new connections. They will work with the experts in the field, the THW Workgroup, THWs, and agencies that utilize THWs to strengthen our recruitment of THWs. Also, this position, partnered
with the THW Workgroup, will work towards planning the expansion of the THW workforce and growth opportunities. This will be done by adding additional training certifications, holding culturally appropriate trainings, and providing shadowing opportunities.

With OHA providing focus and dedication to helping create a sustainable pathway forward for THWs, IHN-CCO and the THW Workgroup are excited to be able to further pursue and permeate the Linn, Benton, Lincoln counties with THWs that are reflective of the workforce. We are looking forward to utilizing the THW Liaison position and the THW Workgroup to increase the integration and utilization of THWs into the delivery system, message to Members about the benefits and availability of THWs, and to continue to strengthen our connection with THW Commission. This will allow us to help create best practices all the while using data and measurements to ensure we are providing the best culturally and linguistically appropriate care to Members.
Attachment 11: Behavioral Health Questionnaire

See Attachment 11: Strategic Plan and Attachment 11: Roadmap as supporting documents to this Questionnaire.

Behavioral Health Benefit

1. How does Applicant plan to ensure that Behavioral Health, oral health and physical health services are seamlessly integrated so that Members are unaware of any differences in how the benefits are managed?

IHN-CCO ensures seamless integration through the Patient-Centered Primary Care Home or Behavioral Health Home model.

Patient-Centered Primary Care Homes (PCPCHs) are designed to provide convenient access to integrated care as teams working together provide comprehensive whole person care, engaging members and their families in shared decision making. Behavioral health, oral health and physical health services are seamlessly integrated in PCPCHs. The team-based approach includes nurse practitioners, doctors, nurses, pharmacists, behaviorists, and Traditional Health Workers (THW) with access to specialists and dental providers working together to coordinate care. IHN-CCO is advancing these team-based care models across the three-county region. Community Health Centers of Benton, Linn Counties and Lincoln Community Health Center are excellent examples of how care and services can be integrated in a way that is seamless to the member.

IHN-CCO has established numerous mechanisms within the payment, contracting, oversight, transformation and governance systems to ensure members receive behavioral health services and supports in an integrated manner that is seamless to the member.

An example of a transformation strategy to provide seamless care to the member is by having a behavioral specialist to perform behavioral services in a clinical setting. This allows for doctors and mid-level practitioners to remain available to function at the highest clinical level in their particular skillset and for the provider base to maintain the depth necessary to serve the increasing numbers of IHN-CCO members in need. PCPCHs offer behavioral specialist services to IHN-CCO members to assists with timely treatment of depression, anxiety, attention deficit disorder, post-traumatic stress disorder, autism spectrum disorder, obsessive compulsive disorder, and more.

Additionally, the Alternative Payment Methodology (APM) transformation pilot funded through IHN-CCO’s Delivery System Transformation Committee increased the provision of Mental Health/Behavioral Health services in PCPCHs by a substantial amount. Mental Health/Behavioral Health visits in PCPCHs increased by 204% as a result of the APM pilot efforts. All PCPCHs are now on a value-based payment methodology based on this model. Clinics are investing in Psychiatric-Mental Health Nurse Practitioners, Licensed Clinical Social Workers, and Behavioral Psychologists to grow integrated mental health and behavioral health access.

Other Behavioral Health integration projects such as the Child Psychiatry Capacity Building and Primary Care Psychiatric Consultation (PCPC) take some of the work load off specialty mental
health by shifting care for relatively straightforward cases to the primary care provider, allowing the specialty mental health psychiatrist to focus on the more complex cases.

IHN-CCO provides oversight and convenes interdisciplinary care team meetings to bring all clinicians, providers, services, supports and stakeholders together with the member in a way that makes care more effective and timelier.

A2. How will Applicant manage the Global Budget (as defined in ORS 414.025) in a fully integrated manner meaning that Applicant will not identify a pre-defined cap on Behavioral Health spending, nor separate funding for Behavioral Health and physical health care by delegating the benefit coverage to separate entities that do not coordinate or integrate?

IHN-CCO does not impose rate determined caps on behavioral health or physical health spending levels. IHN-CCO manages the entire budget in whole to achieve desired medical loss ratio (MLR) targets. The rates and volumes contracted in the network are not bounded by any specific service category. For example, IHN-CCO has gone above mental health OHA rates in regions that required the expenditure and access. As future population needs are evaluated through community committees, internal analysis, and network determinations, funding is made available to expand into services that are aligned with the triple aim regardless of service category. IHN-CCO will prioritize funding to Providers that integrate behavioral health and physical health, while working with non-integrated providers to move towards coordinated models. This will be done through PCPCH funding, value-based payments (VBPs), and network management.

IHN-CCO retains central care coordination and provides triage, screening and referral processes that are coordinated with the member’s primary care team. Referrals to intensive levels of care are facilitated by IHN-CCO staff through contracted providers, qualified licensed practitioners and crisis response teams.

A3. How will Applicant fund Behavioral Health for its Service Area in compliance with the Mental Health Parity and Addictions Equity Act of 2008?

The Mental Health Parity and Addictions Equity Act (MHPAEA) of 2008 requires IHN-CCO to provide the same level of benefits for behavioral health as for physical health care. A parity analysis conducted in 2018, showed IHN-CCO met compliance requirements outlined in MHPAEA. IHN-CCO is an established leader in this area and was one of five CCOs found compliant with no corrective action resulting from the parity analysis. IHN-CCO continues internal audits to ensure compliance. Policies and procedures are aligned to ensure that financial requirements and treatment limitations for mental health (MH) and substance use disorder (SUD) treatment benefits are not more restrictive than financial requirements or limitations on physical health benefits. This includes:

- Aggregate lifetime and annual dollar limits;
- Financial requirements such as copays;
- Quantitative treatment limitations (QTLs) such as visit limits; and
- Non-quantitative treatment limitations (NQTLs), such as prior authorization.
IHN-CCO ensures benefit packages, the utilization management (UM) processes, strategies and evidentiary standards are comparable and no more stringently applied in the child or adult benefit packages to mental health or substance use disorder benefits than to physical health benefits.

Evidence-based UM criteria is applied to inpatient and outpatient benefits through prior authorization, concurrent review, and retrospective review (RR) to ensure appropriateness of care and cost effectiveness of services and or treatment benefits.

UM is assigned to MH/SUD and medical inpatient benefits primarily using four strategies:

- To ensure coverage, appropriateness of care and prevent unnecessary overutilization (e.g., in violation of relevant OARs, the Health Evidence Review Commission (HERC) Prioritized List and guidelines).
- To ensure appropriate treatment in the least restrictive environment that maintains the safety of the individual.
- To maximize use of IHN-CCO providers to promote cost-effectiveness.
- To comply with federal and State requirements.

In addition, for MH/SUD, physical health review, IHN-CCO assigns UM to ensure members get the right care at the right time and scarce resources are preserved.

For prior authorization of prescription drugs, IHN-CCO uses a formulary that is developed by the Pharmacy &Therapeutics committee. This formulary allows for drug coverage with and without prior authorization review. However, the majority of behavioral health drugs are carved out of the CCO benefit package. To effectively understand medication adherence and risk stratify members, behavioral health drugs should be included in a comprehensive prescription data set and not be part of the carve out.

IHN-CCO promotes consistency of criteria application through interrater reliability (IRR) testing with an 85% standard and a concordance rate 95% in 2018.

IHN-CCO benefits and authorization requirements are reviewed annually using data for type of service and number of services provided, along with network availability and cost of care.

IHN-CCO contracts with a majority of the Mental Health providers through a value-based payment methodology that is based on the established DMAP rates to ensure equitable payment. IHN-CCO conducted a full analysis of Mental Health rates to ensure compliance with MHPAEA. As part of its annual review, IHN-CCO will analyze its provider network to ensure ongoing compliance.

A4. How will Applicant monitor the need for Behavioral Health services and fund Behavioral Health to address prevalence rather than historical regional spend? How will Applicant monitor cost and utilization of the Behavioral Health benefit?

The Alternative Payment Methodology (APM) pilot funded through IHN-CCO’s Delivery System Transformation Committee increased the provision of Mental Health/Behavioral Health services in PCPCHs by a substantial amount. Mental Health/Behavioral Health visits in PCPCHs increased by 204% as a result of the APM pilot efforts. All PCPCHs are now on a value-based payment methodology based on this model that uses the risks and needs of the members.
attributed to the clinic and not on historical spending. Clinics are investing in Psychiatric-Mental Health Nurse Practitioners, Licensed Clinical Social Workers, and Behavioral Psychologists to grow integrated mental health and behavioral health access.

Samaritan Mental Health has been funded by transformation projects including the Child Psychiatry Capacity Building and Primary Care Psychiatric Consultation. These pilots integrate Behavioral Health into the Primary Care, improving access for members and setting the stage for monitoring the need through the PCPCH. These creates an access point for behavioral health services addressing prevalence rather than spend. Members receive services while in their PCPs office reducing missed appointments and wait times.

For specialty services provided by Community Mental Health Programs, IHN-CCO monitors a dashboard of performance metrics to ensure services are appropriate and meeting member needs. IHN-CCO is conducting a robust population needs assessment and comparing national prevalence indicators to the IHN-CCO population and comparing with cost and utilization trends with prevalence of conditions. Historical spend is monitored and funding adjusted to ensure services are available to meet the unique needs of IHN-CCO members in the three-county region.

Behavioral Health Performance Metrics:

- Follow-up after crisis intervention in the emergency department for members age 18 and over for primary reason of mental health crisis within 7 days of discharge
- Follow-up within 7 days after discharge from a psychiatric hospitalization for mental illness
- Increase the number of individuals who are receiving peer-delivered services
- Assertive Community Treatment (ACT) - increase in the number of supported employment services for members enrolled in ACT
- ACT - Number of clients enrolled in ACT remain in the community
- Increase the number of individuals served by mobile crisis
- Mental health assessments within 60 days for children in Department of Human Services Custody
- Recidivism within 60 days of discharge of a youth psychiatric residential stay
- Return to psychiatric hospital within 45 days from discharge from a psychiatric hospital
- Two or more care coordination (wrap-like) encounters provided while youth is in psychiatric residential care
- Inpatient psychiatric length of stay
- Parent-Child Interaction Therapy effectiveness

IHN-CCO provides quarterly reports to each Community Mental Health Program (CMHP) on both the spending under their capitation arrangement and for other paneled providers and services reimbursed through Fee For Service payments made by IHN-CCO. Mental health expenditures and utilization are closely monitored in aggregate at the CCO-level and county-level. The total spending for outpatient services to members assigned to the CMHP are then reconciled on a quarterly basis to ensure reimbursement is based on the needs of the members and not historical spending or established limits. The reports are further broken down by service category, such as residential, psychiatric hospitalization, Wraparound services, day treatment, and outpatient services by monthly expenditure and utilization. This reporting has been
invaluable to understanding the services provided in each county and related cost so that IHN-CCO’s Behavioral Health committees can develop strategies to improve access while containing costs.

Quarterly Review:

- **Performance metrics**
  - IHN-CCO meets with each of Community Mental Health Programs quarterly to review quality measures and performance related to access to care, service delivery and recidivism. A Score Card format is used to financially incentivize evidenced based services and coordinated and integrated care to meet the needs of members.

- **OHA determined metrics**
  - OHA Disparity Metric: IHN-CCO has been focusing on Emergency Department Disparity metric identifying those members with complex medical and behavioral health issues. Chart reviews occur to conduct a chain analysis, better understand utilization patterns and determine who has been and is a part of the individuals Care Team. Interdisciplinary Team Meetings are held to assess needs, evaluate resources and create a plan of care that will meet the needs of the member.

- **IHN-CCO determined metrics**
  - IHN-CCO integrates metrics tracked by Community Mental Health Programs and applies these internal metrics to track patterns of utilization for members with complex needs, acuity level, and health risk factors. Review of these metrics shows service-level needs and practice patterns so that pathways of care can revised to better meet social, emotional, physical, dental, and environmental needs. Current reports include but are not limited to: individuals who readmit to Intensive treatment services and inpatient psychiatric services, individuals with co-occurring disorders, youth place in substitute care, members who are placed outside of the community in Behavioral Rehabilitative Services and members with serious mental illness.

- **Monitoring cost:**
  - IHN-CCO has developed financial reports that track Behavioral Health expenses in non-community-based services, community behavioral health programs and PCPCHs.

A5. How will Applicant contract for Behavioral Health services in primary care service delivery locations, contract for physical health services in Behavioral Health care service delivery locations, reimburse for the complete Behavioral Health Benefit Package, and ensure Providers integrate Behavioral Health services and physical health services?

The Alternative Payment Methodology (APM) pilot funded through IHN-CCO’s Delivery System Transformation Committee (DST) increased the provision of Mental Health/Behavioral Health services in PCPCHs by a substantial amount. Mental Health/Behavioral Health visits in PCPCHs increased by 204% as a result of the APM pilot efforts. All PCPCHs are now on a value-based payment methodology based on this model. Clinics are investing in Psychiatric-Mental Health Nurse Practitioners, Traditional Health Workers, Licensed Clinical Social...
Workers, and Behavioral Psychologists to grow integrated mental health and behavioral health access.

An example of a transformation strategy to provide seamless care to the member is by having a behavioral specialist to perform behavioral services in a clinical setting. This allows for doctors and mid-level practitioners to remain available to function at the highest clinical level in their particular skillset and for the provider base to maintain the depth necessary to serve the increasing numbers of IHN-CCO members in need. PCPCHs offer behavioral specialist services to IHN-CCO members to assist with timely treatment of depression, anxiety, attention deficit disorder, post-traumatic stress disorder, autism spectrum disorder, obsessive compulsive disorder, and more.

With the success of these pilots, IHN-CCO now contracts for Behavioral Health services through the PCPCH model to serve members in convenient service locations. PCPCHs are incentivized with value based payment (VBP) arrangements to increase behavioral health, social supports and Traditional Health Workers to support members in the primary care setting. The PCPCH is measured on level of PCPCH tier achievement and encouraged to achieve at least a tier 4 level, which requires the integration of Behavioral Health.

To meet the PCPCH metric, CCOs must achieve the benchmark of 68% of members assigned to a PCPCH. Depending on the contract, PCPCH achievement could be a combination of 3, 4 and 5 or simply 4 or higher. IHN-CCO has 95% of members assigned to a PCPCH.

IHN-CCO provides funding and technical support in sharing best practices and strengthening the PCPCH infrastructure to provide additional non-traditional services (e.g. care coordination, home visits) through the additional PCPCH case management fees that PCPCH’s receive as well as incentive quality pools received based on performance achieved.

IHN-CCO has VBP contracts with 94.5% of the PCPCH clinics in the region that allow the provision of Behavioral Health services in the clinics. Through these agreements IHN-CCO has seen a large increase in the Behavioral Health services to IHN-CCO members in PCPCHs. Additionally, there is a substantial network of Federally Qualified Health Centers (FQHCs) that provide an integrated service continuum in those clinics.

IHN-CCO has an open panel network throughout the region for Behavioral Health services and are actively pursuing additional independent providers to join the panel. The VBP contracts with CMHP encourage working with PCPCHs and includes the quarterly monitoring and review of costs, value of services, and potential over and underutilization of services, which leads to strategic network planning. CMHP are also held accountable for many quality metrics in alignment with the Oregon Health Improvement Plan for mental health services. Partners are accountable for implementing required programs to fidelity or collaboratively working with IHN-CCO to develop networks that allows members with severe and persistent mental illness (SPMI) to stay in their community and making sure the most appropriate services are accessible and are provided at the right time. IHN-CCO is pursuing development of Behavioral Health Homes with CMHP in partnership with PCPCHs, embedding primary care providers in specialty behavioral health.
A6. How will Applicant ensure the full Behavioral Health benefit is available to all Members in Applicant’s Service Area?

IHN-CCO has developed a Behavioral Health Strategic Plan to ensure accountability for the full behavioral health benefit regardless of where the member resides within the three-county region. The Strategic Plan will address the adequacy of the provider network, ensuring timely access and effective treatment across the full continuum of care from prevention to acute care and treatment facilities.

Timely Access to Treatment Services and Supports

A key strategy to ensure members have seamless access to the full Behavioral Health benefit is in assignment to a PCPCH clinic. As of January 2019, 94.9% of IHN-CCO’s 50,796 members were assigned to a PCPCH clinic.

IHN-CCO members assigned:
- 447 enrolled at two Tier 2 clinics;
- 26,892 members were enrolled at 24 Tier 3 clinics;
- 11,951 members were enrolled in 16 Tier 4 clinics; and
- 8,912 members were enrolled at 9 5 Star (Tier 5) clinics.

IHN-CCO had 2,594 members not assigned to a PCPCH clinic at the time of evaluation.

To be recognized as a PCPCH, a clinic must have a screening strategy for mental health, substance abuse and a process to refer to local resources. IHN-CCO is continuing to provide education and resources to help PCPCHs achieve 5 STAR recognition. Through 5 STAR recognition, IHN-CCO can assure the PCPCH provides integrated behavioral health services, including population-based, same-day consultation by behavioral health providers.

IHN-CCO compares population data to national prevalence indicators to determine member needs for Behavioral Health services and to evaluate the adequacy of the service delivery system. This includes developing appropriate pathways to PCPCHs, CMHP and Intensive Services. Traditional Health Workers (including Community Health Workers and Peer Supports) are integral to providing services to members in their most natural environments. IHN-CCO has strong relationships with each of the three counties CMHP including contracts in place for the IHN-CCO population.

Adequate Provider Network

There is a state-wide shortage of primary care and mental health professionals. IHN-CCO’s three-county region is largely rural, making it especially challenging to maintain an adequate provider network. Nonetheless, for the last six years IHN-CCO has been able to demonstrate network adequacy and has continually focused on increasing access to behavioral health services and supports. However, it is acknowledged that additional work needs to be done in this area. IHN-CCO is conducting an analysis of the provider network and workforce. IHN-CCO is evaluating the capacity and appropriateness of the network services and supports. Detail on the service delivery providers will be compared to prevalence data and used to determine gaps. During the analysis, IHN-CCO is also analyzing the timeliness of all services and supports that
are available to its members. Identified gaps will be prioritized for workforce development initiatives across the three-county region. Short- and long-term plans will be developed in collaboration with local, state and federal resources and initiatives.

Through the analysis and local community input, IHN-CCO is working towards three-county wide alignment and integration through the PCPCH and Behavioral Health Home model that will effectively coordinate multiple services and supports. The goal will be to have seamless referral and access pathways for all, but especially prioritized for special populations.

Additionally, IHN-CCO is partnering with Samaritan Mental Health Leadership Council on recruitment and retention efforts of Behavioral Health providers. Supporting and expanding the existing provider network is a key initiative. To increase access to care this next year, Samaritan Health Services (SHS) plans to:

1. Bring the Collaborative Care model to each of its primary care clinics. Over the past four years, SHS has been providing psychiatric consultation to some of the adult and pediatric clinics. This model will be expanded and refined to more closely align with the national model of collaborative care. Primary care and pediatrics are the priority but soon following, the desire is to bring this model to specialty care, such as obstetrics and gynecology, sports medicine, and hospice.
   a. Collaborative care is a national model supported by the American Psychiatric Association (APA) and partners with the University of Washington as part of CMS’s Transforming Clinical Practice Initiative.
   b. “The Collaborative Care Model has the most evidence among integration models to demonstrate its effective and efficient integration in terms of controlling costs, improving access, improving clinical outcomes, and increasing patient satisfaction in a variety of primary care settings – rural, urban, and among veterans.” – APA website.
   c. The model uses mental health specialists to interview patients in their medical home, provide information to the psychiatric consultant and act as a liaison between the consultant and the primary care doctor.
   d. Create a registry in the electronic medical record (Epic) to make the program “population based”, as it is in the national models. This allows the mental health specialist to keep track of how the patient is doing, contacting them every two to four weeks to keep adjusting treatment until the patient shows improvement on outcome measures. To address the need, Epic staff plan to have registry completed and ready to use by June 2019.

2. Add several additional outpatient psychiatrists, as well as mental health specialists, to meet the needs of the primary care clinics throughout SHS.

3. Add several therapists to begin to address the lack of outpatient therapy services, offering individual therapy, as well as group therapy, focusing on trauma-informed therapy for adults and children.

4. Work with SHS (PharmD) to assist with a metabolic clinic to address the needs of patients with side effects to medication who may not be accessing primary care services.

5. Special clinic options, such as a designated clinic to quickly see patients after they have been transferred back to primary care but may have a return of symptoms; Attention Deficit/Hyperactivity Disorder (ADHD) clinics to offer shorter visits to increase access.
6. Increase availability and ease of use of telemedicine throughout the service area, targeting rural populations with transportation issues.

Effective Treatment Across the Continuum of Care

IHN-CCO is working with local PCPCHs, specialists, CMHPs, facilities and local supports and services to institute standardized criteria for members to receive care in the right settings and care pathways to move between being cared for in their Primary Care Physician (PCP) office and with a specialist. To preserve access to scarce resources such as psychiatrists, IHN-CCO is working to ensure members are receiving care at the right level for the duration that is appropriate and building trust among providers to ensure members can move between the different levels of care when appropriate. If members are to receive care in their PCP setting, their PCP office should have the appropriate staff to provide care to these members.

Criteria has been developed to determine individuals who can be safely treated in the PCPCH setting and those individuals who need specialist support or a Behavioral Health Home (BHH).

1. Members appropriate for care in the PCP setting:
   a. Mild-moderate symptomatology that has potential for behaviorally driven change within 4-8 sessions.
   b. Patients who need traditional antidepressants (selective serotonin reuptake inhibitor (SRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs) etc.), short term anxiolytics, and/or stimulants
   c. Patients who need diagnostic clarification for coordination of SDS or other community services (ex. in home care, cognitive screeners etc.)

2. Members who may be appropriate for care in the PCP setting with support of Specialist providing services:
   a. Mild to moderate symptomatology in bipolar disorders, alcohol abuse, specific phobias, gender dysphoria etc.
   b. Patients with eating disorders that have stabilized
   c. Patients who need Antiepileptics, Typical or Atypical Antipsychotics, Lithium, beta and alpha blockers for management of their diagnoses (as many PCPs will refuse to manage these medications due to lack of familiarity, even with psychiatric consult)

3. Members who are not appropriate for care in the PCP setting and should receive care with a specialist or in a BHH:
   a. Severe, persistent symptomatology
   b. Schizophrenia Spectrum or Psychotic Disorders
   c. Substance Use Disorders (Moderate-Severe, Dependence category)
   d. Eating Disorders
   e. Dissociative Disorders
   f. Conduct disorders (that strongly recommend engagement of family members and behavioral management for parents)
   g. Patients with >4 psychopharmacological prescriptions
   h. Patients who are determined by the inpatient team, including the psychiatrist, to need specialty psychiatric management
In an effort to better meet the region’s needs higher acuity mental health and reflect a more contemporary model of care, the hospital in Benton County, Good Samaritan Regional Medical Center, is reconfiguring its current mental health facilities. The result will be to convert one of the hospital’s two inpatient mental health units into an expanded, highly structured outpatient program. These “partial hospitalization” programs have been shown to eliminate the need for inpatient hospitalization for some patients, as well as decrease the length of stay for those admitted to the inpatient unit. When fully implemented, this outpatient program, combined with the remaining inpatient unit, will allow Samaritan Health Services to increase the number of individuals that can receive treatment services and supports.

Local mental health authority leaders are strongly supportive of this change as they have identified the lack of a structured outpatient program as a real need in the region. This change is scheduled to be operational in the fall of 2019. A new residential treatment facility is currently being built in Lebanon that will treat men and women of all ages for substance abuse. There will a 16-bed facility that will also include space for outpatient treatment programs.

IHN-CCO will continue to explore expanding access through telehealth and other unconventional methods to ensure members have timely access to care. IHN-CCO are working with provider groups to develop and support telehealth initiatives and are actively working to resolve concerns around video quality and the security of the telehealth platform before we can move forward with telehealth strategy.

A7. How will Applicant ensure timely access to all Behavioral Health services for all Members?

IHN-CCO is committed to ensuring members receive the right care at the right time at the right place through a variety of ways. IHN-CCO is working to shift the focus to prevention and early identification through universal screenings in all available supports and services a member may utilize in the region. Through partnering with the community and work towards aggregation of data of all levels of care screening, IHN-CCO will be able to create care pathways for the common conditions identified in the population and identify members earlier for lower levels of intervention. With standardized care pathways and differing levels of care, as talked about above, IHN-CCO will be working to ensure members are receiving care in a timely manner and that the necessary network is available.

Through VBPs, clinics are able to recruit Psychiatric-Mental Health Nurse Practitioners, Licensed Clinical Social Workers, and Behavioral Psychologists to grow integrated mental health and behavioral health access. PCPCHs offer timely access to behavioral specialist services to IHN-CCO members to assists with timely treatment of depression, anxiety, attention deficit disorder, post-traumatic stress disorder, autism spectrum disorder, obsessive compulsive disorder, and more.

IHN-CCO has developed centralized triage, screening and referral processes through a care management hub to ensure timely access. IHN-CCO is developing access tracking and mitigation plans as part of a long-term strategy to ensure seamless access to appropriate services. Primary care providers will be supported with consultation from in-network and in-office psychiatrists to intervene early and stabilize members in the most appropriate care setting. The umbrella of Traditional Health Workers (THWs) are also an asset to the community with 145
THWS in this region. Many THWs are imbedded within the PCP clinics allowing for a more seamless transition and continuation of care. Services and supports are strengthened and supported through a new initiative to implement a common referral and tracking system, Unite Us. Unite Us is a software platform to address Social Determinants of Health (SDoH). The Unite Us platform connects people to services. It originated for veterans to help them establish connection to social service providers. Unite Us now has networks established across the country. IHN-CCO purchased Unite Us to be used as a community resource to connect social service agencies with community members. The DST is engaging community stakeholders and taking the lead on implementation of the Unite Us Referral Network project.

The Unite Us Referral Network project digitally connects health and community providers (including mental and behavioral health providers), allowing them to fully integrate the social determinants of health into patients’ care, track their progress throughout their health journey, and report tangible outcomes across a full range of services in a centralized, cohesive, and collaborative ecosystem. It impacts the entire community; anyone responsible for referrals to social determinants of health organizations, physical health clinics, oral health organizations, behavioral health services, and more. This will support the data collection plans by bringing a different kind of data for analysis. Referrals can be tracked to determine prevalence rather than actual utilization of services to discover and repair gaps in services.

A8. How will Applicant ensure that Members can receive Behavioral Health services out of the Service Area, due to lack of access within the Service Area, and that Applicant will remain responsible for arranging and paying for such out-of-service-area care?

IHN-CCO Behavioral Health case managers review and coordinate services for members when out of service area or out of network services are requested. Within case management and intensive care coordination processes, members are assessed, and service needs identified and facilitated. Intensive Care Management (ICM) and Intensive Care Coordination (ICC) process screen for service needs that may be follow up as part of an interdisciplinary care team (ICT). Ideally a member is actively involved in intensive care coordination at the IHN-CCO or CMHP level prior to them leaving the area for services. The allows IHN-CCO care management to prearrange and authorize services before a member leaves the area for services.

IHN-CCO has streamlined the authorization process for non-contracted providers. Non-contracted providers are reviewed to ensure provider meets credentialing standards. Once completed, care management facilitates discussions with the contracting department to determine whether a single case agreement (SCA) is needed. If a SCA is needed, contracting works directly with the provider to establish service plan and associated billing processes for payment. Ongoing services require concurrent review and authorization to continue, including care coordination, discharge planning and return to community services. The requests are tracked using the internal process. Ongoing case management is tracked through the care management hub tracking tool.

IHN-CCO has determined that authorizations are appropriate for non-contracted providers when:

- Member is new to IHN-CCO and there is a need for continuity of care with current provider.
- Services not available through contracted provider.
• Client is in a Behavioral Residential Services (BRS) or Residential placement outside of the region.
• Services needed from a “specialty” provider not easily available through contracted providers.

Members who are unaware of service availability or in need of support in accessing a service can contact customer service and be routed to the care management hub. Health Care Guides will contact providers to determine capacity or research the health care network connecting members to appropriate service providers. Health Care Guides can also help the Service Providers navigate the IHN-CCO authorization process.

A9. How will Applicant ensure Applicant’s physical, oral and Behavioral Health Providers are completing comprehensive screening of physical and Behavioral Health care using evidence-based screening tools?

IHN-CCO has standardized workflows for Screening, Brief Intervention, and Referral to Treatment (SBIRT) among primary care clinics and emergency departments. IHN-CCO has implemented VBP for screenings in certain settings to ensure providers are completing comprehensive evidence-based screenings for physical and behavioral health care. These include VBP for Maternity Case Management for completion of the evidence-based screening tools; Alcohol and Drug Screening, Depression (PHQ9), Adverse Childhood Experiences (ACEs) screening for pediatric members, Colorectal Cancer Screening and Suicide Screening Tools. IHN-CCO will continue to expand VBP for other screening in provider settings. IHN-CCO will also ensure screenings are completed through Health Information Exchange (HIE) integration and full EHR adoption. IHN-CCO’s contracted Dental Care Organizations (DCOs) have evidence-based screening tools embedded in their HIE and IHN-CCO will work with the DCOs to ensure they are being completed for all IHN-CCO members.

Additionally, the tri-county Perinatal Task Force and SHS developed and implemented a universal prenatal drug, alcohol, intimate partner violence (IPV) and mental health screening protocol throughout the IHN-CCO service areas of Benton, Lincoln and Linn counties. Universal Prenatal Screening is an evidence-based screening protocol utilizing the Screening, Brief Intervention, and Referral to Treatment (SBIRT) and 5Ps verbal screening tool in conjunction with urine drug testing by patient consent for expecting mothers. Sites include all regional hospitals, SHS obstetrical and family practice clinics, The Corvallis Clinic, and independent obstetrical providers.

A10. How will Applicant ensure access to Mobile Crisis Services for all Members to promote stabilization in a Community setting rather than arrest, presentation to an Emergency Department, or admission to an Acute Care Psychiatric Hospital, in accordance with OAR 309-019-0105, 309-019-0150, 309-019-0242, and 309-019-0300 to 309-019-0320?

Mobile Crisis teams will be available through contracts with Community Mental Health Programs (CMHP). IHN-CCO monitors policies and practices for these services through yearly audits of the CMHP and quarterly score card metrics which incentivize increase in numbers of individuals served by Mobile Crisis. Recidivism rates are tracked as are follow-up to Emergency Department utilization and hospitalization.
A11. Describe how Applicant will utilize Peers in the Behavioral Health system.

IHN-CCO has utilized Traditional Health Workers (THWs) and Peer Delivered Services within the Behavioral Health system for many years and is developing a roadmap to further increase utilization and integration. Some of the organizations that provide Peer services are Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.), Family Tree Relief Nursery, Family Support Programs, Oregon Family Support Network, and OneToAnother that provides family and youth support services. The three CMHPs also support Peer Delivered Services within the Behavioral Health system.

IHN-CCO has partnered with Benton County Health Department since 2013 to incorporate and build out the THW workforce and strategically implement THWs throughout the delivery system. Currently there are 145 THWs within the delivery system that work in clinics, housing complexes, schools, emergency departments, etc. A strategic plan has been developed by the Delivery System Transformation’s THW Workgroup to drive focus and change for the upcoming years. There is an emphasis on development of an expansion for all types of THWs and reaching out and identifying community agencies interested in utilizing THWs. The THW Workgroup will provide education and information to the interested agencies and determine what type of THW will best meet their service needs. The Peer Wellness Specialist transformation pilot is also supporting additional trainings for Peer Support Specialists and Peer Wellness Specialists.

IHN-CCO and numerous cross-sector organizations are pursuing transformational initiatives around THWs and behavioral health. Organizations and initiatives around Peer Supports:

C.H.A.N.C.E. views the key to the success of their program is that each member of the staff, uses his or her own personal life experience of recovery as an example that recovery is not only achievable, but real and imperative. C.H.A.N.C.E. assists with the physical, mental and behavioral health along with promoting individual, and group programs that foster health and resilience. They are increasing permanent housing, employment, education, and other necessary support networks and to reduce the barriers to social inclusion and stigma associated with mental health and addiction recovery. They are a recovery support service and offer variety of peer to peer services and self-help groups (i.e. anger management, parenting classes, step work groups, dual diagnosis anonymous, symptoms management, etc.).

Family Tree Relief Nursery is expanding and integrating the existing collaborative partnerships of the Traditional Health Worker (THW) community in the tri-county area by building upon previous pilots and work of the THW Workgroup. They are focusing on design, creation, accreditation, and delivery of a certified training course for Peer Support Wellness Specialists in the tri-county area in conjunction with the Tri-County Traditional Health Worker Training Hub. This pilot will demonstrate the strategic focus of; effectiveness and sustainability, expanding, connecting and demonstrating access to person-centered Medicaid focused healthcare, and connecting social determinants of health and upstream health to the traditional healthcare system.

Stepping Up Initiative is focusing on reducing the number of people with mental illnesses in jails and helping with transition back into the community in a culturally responsive manor. The goals of Stepping UP Initiative are to establish diversion services which includes: Mobile Crisis
Response; Peer Delivered Services; Supportive/Transitional housing; Pre-Trial Services/Intervention; utilizing robust Peer-Delivered services and providing education; along with providing formal re-entry planning.

A12. How will Applicant ensure access to a diversity of integrated community supports that mitigate SDOH-HE, increase individuals’ integration into the community, and ensure all Members access to Peer services and networks.

IHN-CCO created workgroups through the Delivery System Transformation Committee to support delivery system transformation that identifies and reduces health disparities and advances health equity focusing on social determinants of health; Health Equity Workgroup and the Social Determinants of Health Workgroup.

The Health Equity Workgroup has been in operation since 2017 supports the culturally diverse needs of members (cultural competence training, provider and Certified Traditional Health Workers composition reflect member diversity). Quality improvement focused on eliminating racial, ethnic, linguistic, and other disparities in access, quality of care, experience of care, and outcomes. The Strategic Plan identifies ways to work towards having a diverse workforce that reflects the community.

Also created by the Delivery System Transformation Committee is the Traditional Health Worker (THW) Workgroup that has been in operation since 2015. THWs have increased the diverse workforce that reflects IHN-CCO member composition. Currently there are 145 certified THWs within the delivery system that work in clinics, housing complexes, schools, emergency departments, and more; 40 Community Health Workers (CHWs), 5 Birth Doulas, 97 Peer Support Specialists (PSSs), and 3 Peer Wellness Specialists (PWSs). An additional 60 THWs are currently in Birth Doula training and 15 community members are training to be PWSs and will be credentialed at the end of 2019. Some CHWs work as Health Navigators in schools and housing complexes. IHN-CCO has supported the development of an extensive list of Traditional Health Workers to support individuals in their most natural environment. These include Community Health Workers, Health Navigators, Birth Doulas, Peer Support Specialists, and Peer Wellness Specialist. The reasons for member’s needs which reflect Social Determinants of Health are tracked daily and reports submitted to IHN-CCO in order to better quantify and understand the needs of members, create appropriate pathways to care, and ensure that members are served as close to home as possible.

The Tri-County Traditional Health Worker Training Hub (THW Training Hub) was created through IHN-CCO transformation fund investment with backbone support from Benton County Health Services in partnership with the THW Workgroup. THW Training Hub is a collaborative approach based upon a collective impact model to facilitate change in the healthcare delivery system with coordination of multiple organizations. Adapted from Community Capacitation Center Multnomah County’s “We are Health” Community Health Worker training curriculum, the THW Training Hub modified it to suit the region’s needs by adding additional modules to satisfy training gaps. The Peer Wellness additional training is projected to be completed and implemented by fourth quarter of 2019.
The main training curriculum has two days dedicated to introduction of mental health, self-care, motivating for change, and addiction and recovery. The training provides a foundation in trauma informed principles, cultural awareness and is tailored to individual communities, which allows for integration into the community in a culturally responsive way.

One of the ways that IHN-CCO informs members that there are Peers Delivered Services and other THWs is by adding information into the Member Handbook, “there may be times when you need help getting the right care. Your primary care team may have people specially trained to do this. These people are called Care Coordinators, Community Health Workers, Peer Wellness Specialists, and Personal Health Navigators.”

IHN-CCO staff complete comprehensive trainings to ensure members are being served in the most integrated, culturally responsive and linguistically appropriate way. An example is the Diversity in Health Care course that provides core curricula on diversity, equipping staff with awareness and practical applications to develop cultural competence and appreciation for how a culture of inclusion benefits organizations and members. Staff also are trained in trauma-informed care. The Customer Service department is able to directly access health care guides to support members. They do this by routing the call notes directly to the health care guides. This ensures information is provided directly to the health care guide, so the member does not need to communicate their need twice.

Billing System and Policy Barriers to Integration

B1. Please describe Applicant’s process to provide Warm Handoffs, any potential barriers to ensuring Warm Handoffs occur and are documented, and how Applicant plans to address them.

IHN-CCO removed barriers between mental health and physical health billing when IHN-CCO was formed. Since that time, IHN-CCO has allowed providers to bill for any service they are licensed to provide.

- The IHN-CCO Strategic Plan for Behavioral Health 2020-2024 includes the goals:
  - Culturally-responsive care pathways with handoffs that are structured and supported
  - Seamless referral and access pathways
- IHN-CCO works closely with Community Mental Health Programs (CMHP), Provider Network and Partner agencies to transition plans are created and documented for members involved with intensive services, so that access to the full continuum of services needed is supported. The transition plans are documented in the member’s Electronic Health Record (EHR) and are reviewed as part of the IHN-CCO utilization management process and on-going monitoring of providers.
- Our CMHP have documented processes that ensure members receiving Crisis Services through the Emergency Department (ED) connect with appropriate community services through follow-up phone calls within 24 hours of transition. If barriers to transitions are identified through Utilization Management (UM) process, Behavioral Health care managers will reach out to providers to ensure necessary parties are involved in transition planning.
- Providers use Transitional Care Management (TCM) service codes to document transition services provided to members and ensure that efforts are captured.
• IHN-CCO is currently evaluating configuration of Collective Plan to notify IHN-CCO when a member with specified criteria is seen in the ED to provide additional support and monitoring of transitions/hand-offs to ensure continuity of needed services.

• IHN-CCO uses a Care Coordination Model to work with members and their Interdisciplinary Team to assess the needs of members, create goals that reflect needs and plans of support, identify barriers to achieving goals, and monitor effectiveness of plan (reassessing and making changes to plan as needed).

B2. How does Applicant plan to assess for need and utilization of in-home care services (Behavioral Health services delivered in the Member’s home) for Members?

IHN-CCO has an extensive Provider Network and uses the contract on utilization process to ensure that Providers follow Oregon’s Administrative Rules. Providers conduct psychosocial assessments to identify and understand challenges and create a plan of treatment with the member to address these challenges. Treatment plans include in-home services when appropriate and agreed upon by the Member.

The Care Coordination model includes an Interdisciplinary Team Process to identify life domains in which members experience challenges. These include but are not limited to: home, school, work, spiritual, physical, and social. A Care Plan is developed with the Member (and their family as appropriate) identifying needs, goals and objectives and a range of community resources that can support positive outcomes.

IHN-CCO does not restrict billing based on a location of service. This allows providers to provide services and supports at a location that best meets the needs of the member. The value based payment (VBP) methodology and the increased use of THWs has allow more members to be in home, in school, at a homeless shelter, or any other location.

B3. Please describe Applicant’s process for discharge planning, noting that discharge planning begins at the beginning of an Episode of Care and must be included in the care plan. Discharge Planning involves the transition of a patient’s care from one level of care to the next or Episode of Care. Treatment team and the patient and/or the patient’s representative participate in discharge planning activities.

IHN-CCO has a thorough Utilization Management (UM) Process and is actively involved in both reviewing documentation and communicating with providers throughout a Member’s stay in Intensive Treatment and Inpatient Services. The Utilization Review Process includes evaluating appropriateness of care based on standardized guidelines and review of treatment plans and service notes ensuring the documenting of goals for discharge and on-going transitional planning throughout the episode of care.

It is the expectation, communicated to providers, that discharge planning begins at admission. Indications of family/natural support involvement is discussed during communication with providers and monitored to ensure that Member representatives are supportive and involved in planning. An Interdisciplinary Team process is encouraged to support provider and community involvement in the development of a safe and appropriate discharge plan. IHN-CCO documents discharge/transition planning in Care Coordination notes. These notes are viewed either
electronically through access to Electronic Health Records (EHR) or requested hard copy clinical records and service notes.

IHN-CCO includes requirements for Care Coordination in contracts with providers and expectations related to discharge planning. IHN-CCO utilizes “Score Cards” to incentivize team planning and family treatment.

The IHN-CCO Utilization Management team has access to the member’s EHR notes in Epic which facilitates support of the member’s discharge planning. IHN-CCO is available to facilitate and or participate in the Care Team when appropriate.

Additionally, IHN-CCO convened an Utilization Management/Care Management workgroup of hospital utilization and care management leaders that meet monthly to address system issues and streamline processes. The UM/CM workgroup has improved communication and coordination of the discharge and transition process. Issues addressed were to workflow map the admission to discharge process, identifying best practices for medication reconciliation, durable medical equipment (DME) ordering, transportation, temporary housing, and skilled nursing facility placement.

B4. Please describe Applicant’s plan to coordinate Behavioral Health care for Fully Dual Eligible Members with Medicare providers and Medicare plans, including ensuring proper billing for Medicare covered services and addressing barriers to Fully Dual Eligibles accessing OHP Covered Services.

IHN-CCO is able to seamlessly coordinate care for members dually eligible for Medicare and Medicaid with Samaritan Advantage Dual-Special Needs Plan (D-SNP) Health Maintenance Organization (HMO) coverage. IHN-CCO provides enhanced services, including mental health, dental, and transportation to and from appointments. Coordination of benefits between Samaritan Advantage D-SNP and IHN-CCO is automated by the claims department. For Medicare Part B, the pharmacy benefit manager covers member prescriptions at the point of purchase. Also offered is an over-the-counter drug benefit to cover cold and allergy medications, vitamins, and pain relievers.

IHN-CCO has no pre-authorization requirement for behavioral health services provided by PCPCHs to dual eligible members. PCPCHs have a broad spectrum of physical and behavioral health specialists that provide integrated physical and behavioral health care to members.

The utilization management team reviews authorizations submitted on behalf of dual eligible members and ensures that if the requested service is not covered under the primary insurance, it is reviewed again under the secondary insurance for approval. IHN-CCO has granted transformation funding for provider driven projects that increase Behavioral Health expertise to address member-specific needs that would otherwise not be met in the Primary Care Physician (PCP) offices.

When a claim is received from a provider for a dual eligible member, the Samaritan Health Plans (SHP) claims department processes the claim under the member’s Medicare benefit as the primary payor. The claim is evaluated to verify it meets correct CMS billing rules. If so, the
claims system automatically copies and processes the claim under the member’s IHN-CCO coverage in coordination with the Medicare payment.

As the secondary payor, IHN-CCO will pay up to the allowable amount for covered benefits that were not paid under the Medicare benefits. The IHN-CCO amount paid, in addition to the Medicare amount paid, will not exceed the amount billed.

**MOU with Community Mental Health Program (CMHP)**

C1. Describe how Applicant plans to develop a comprehensive Behavioral Health plan for Applicant’s Service Area. Please include dates, milestones, and Community partners.

IHN-CCO has developed and is committed to implementing a Strategic Behavioral Health Plan for the three counties; Benton, Lincoln, Linn. IHN-CCO’s goal with the plan is “to empower members to live, work, and thrive in their communities.” The Strategic Plan aligns with the Community Health Improvement Plan (CHP), the State Health Improvement Plan (SHIP), and the future requirements of OHA for CCOs in the state of Oregon. IHN-CCO does not want to add any additional burden to the already stretched thin CMHP and behavioral health system in the three counties.

IHN-CCO understands that to empower members, the member must be at the center of the plan. To understand the view of members on behavioral health in the three counties, IHN-CCO utilized the Local Advisory Committees to the CAC. The three committees were generous enough to allow an IHN-CCO representative to help guide a discussion to get input on five questions that were sent ahead of time. IHN-CCO was present at the following Local Advisory Committees Meeting:
- Benton, February 22, 2019
- Lincoln, March 6, 2019
- Linn, February 28, 2019

The input and recommendations from the Local Advisory Committees was incorporated with the Strategic Behavioral Health Plan and presented at the Behavioral Health Quality Committee (BHQC) who has members from IHN-CCO, Community Mental Health Programs representatives, Samaritan Mental Health representatives, and local community supports and services. Following review and discussion, the BHQC approved the Strategic Plan approach. IHN-CCO also presented the Strategic Plan for review at IHN-CCO’s Quality Management Council and the Regional Planning Council (RPC) on March 12, 2019.

IHN-CCO plan includes five areas of focus. Those five areas are:
- Population Assessment
  - Design delivery system to meet the needs of population
- Workforce Development and Provider Network
  - Support provider network to achieve mental health parity and health equity for members
- Delivery System
  - Provide access to full array of services that are responsive to member needs, including focus on Oregon Health Authority identified special populations
• Financing & Payment Models
  o Implement financing models, including Value Based Payments to advance quality, evidence-based practice and integration
• Leadership and Accountability
  o Establish system oversight and accountability

The Behavioral Health plan will be reviewed and adjusted by IHN-CCO and the BHQC based on evaluation of implementation.

See Attachment 11: Strategic Plan and Attachment 11: Roadmap

C2. Describe how Applicant plans to collaborate and coordinate with the Local Mental Health Authority in the development of the CHP.

IHN-CCO, three county partners, and Oregon Cascades West Council of Governments have jointly funded a Community Advisory (CAC) Council Coordinator position. One of the functions of this position is to work across the counties and with IHN-CCO to ensure coordination and collaboration among the counties Community Health Improvement Plan and the CCO CHP. Additionally, the region has co-funded a regional health assessment team that has created a regional data warehouse for health information that is used in the regions Community Health Assessment processes and then works with each county, hospitals, and IHN-CCO to develop its’ CHP. This has provided a great deal of strategic alignment with the process and plans.

The CAC submitted the 2018 CHP Progress report June 2018. The progress report was organized by outcomes and indicators for Access to Healthcare, Behavioral Health, Child Health, Chronic Disease and Maternal Health. The report supports improvement provision of services.

IHN-CCO and the three county partners have already agreed upon a renewed the Memorandum of Agreement (MOA) with the Local Mental Health Authority (LMHA) and Local Public Health Authority to facilitate advantageous use of the system of public health and behavioral health care and services currently available through local community mental health, addictions and public health programs and to ensure continued and conceivable enhanced access to a full continuum of health care and build upon the strengths of current resources. The local mental health authority will meet statutory responsibility to operate a CMHP, the duties of which are delineated in ORS 430.630. ORS 414.153 directs that there be a written agreement between each coordinated care organization (CCO) and the local health authorities in the area served by the CCO and further defines role(s) of local authorities and the recognition of the shared responsibility of the CCO and the local authorities for the full continuum of healthcare services for the area/region served by the CCO.

The mutual goal of the MOA is to coordinate services and efforts to meet the health needs of the CCO members and the community, maintain the mental health, addictions and public health safety nets, and achieve the improved health outcomes envisioned by the “Triple Aim”. In order to achieve these goals, the parties to this MOA desire to set forth their respective roles and responsibilities to coordinate care and share accountability.
C3. Describe how Applicant plans to collaborate and coordinate with the Local Mental Health Authority in the development of the local plan. Please include dates and milestones.

IHN-CCO has collaborated with all three CMHPs, through the Behavioral Health Quality Committee (BHQC) established by Samaritan Health Plans to advise the Quality Management Council and participating providers on community needs and priorities for services in the areas of addictions, mental health, and to assist in planning and evaluating the service delivery system. BHQC conducted a comprehensive Behavioral Health Program Assessment in May 2018. The assessment identified gaps and barriers to services for members and areas of focus for IHN-CCO and providers. The need to provide and coordinate services including peer supports and psychiatry, create systems for enhanced communication, developing process of oversight and monitoring were also identified.

The Behavioral Health Assessment was aligned with the CHP and set the foundation for the Strategic Behavioral Health Plan.

C4. Does Applicant expect any challenges or barriers to executing the written plan or MOU extension with the Local Mental Health Authority? If yes, please describe.

The barriers to executing the Behavioral Health plan are many and may not differ much from other CCO’s. To capture a complete picture of members, IHN-CCO must combine many disparate data sources, including Social Determinants of Health (SDoH). Claims data is not enough and does not present a complete picture of members. The Z codes in ICD10, enable the ability to capture some SDoH information for members and continuing to work with the provider population to increase utilization of these codes. IHN-CCO will continue to work with community providers to increase utilization of Electronic Medical Records (EMRs) in the area and will continue to work to identify other methodology to combine data from the EMRs available through the Regional Health Information Collaborative (RHIC). Data can also be found and aggregated from Collective Plan, once fully implemented.

The Unite Us Referral Network project digitally connects health and community providers (including mental and behavioral health providers), allowing them to fully integrate the social determinants of health into patients’ care, track their progress throughout their total health journey, and report tangible outcomes across a full range of services in a centralized, cohesive, and collaborative ecosystem. It impacts the entire community; anyone responsible for referrals to social determinants of health organizations, physical health clinics, oral health organizations, behavioral health services, and more. This will support the data collection plans by bringing a different kind of data for analysis. Referrals can be tracked to determine prevalence rather than actual utilization of services to discover and repair gaps in services.

Our current provider network may also present a barrier to implementing the plan. As shown in the Behavioral Health System Maturity Assessment of CCO 1.0, IHN-CCO struggles with having the minimally adequate population of behavioral health providers. Although Benton County meets the benchmarks in the assessment, Linn County does not. It is worth noting that this assessment is not specific to the Medicaid population. Based on information from the CAC and narratives from members, IHN-CCO believes there are access issues in all three counties. IHN-CCO is currently working on assessing the provider network to better understand the
proportion of Medicaid members serviced in agency and individual provider practices and how long the wait list is for a Medicaid client. Through review of current available data and as part of the Strategic Behavioral Plan, IHN-CCO intends to identify access needs and implement evidenced based care pathways for members.

Along with the workforce, there are other aspects of service needs that create barriers. The number of providers approved to provide Medication Assisted Treatment (MAT) locally, the availability of residential care for teens and other special populations, the lack of respite care, and the reduction of Peer Supports in the region supported by the CMHPs. IHN-CCO is aware that there is need to be planful as the workforce increases and determine how to leverage current providers (i.e. PCPCH’s) providing the right service in the right place.

**Provision of Covered Services**

D1. Please provide a report on the Behavioral Health needs in Applicant’s Service Area.

IHN-CCO performed a Behavioral Health Assessment throughout much of 2018 to identify the current state of the system. Much of the effort was on discovering gaps and barriers in IHN-CCO current area and this information was brought forth to the Behavioral Health Quality Committee (BHQC) for evaluation. Below is a breakdown of the gaps and barriers in the system.

**Child and Youth Mental Health Services**

A large area of concern identified was for children and youth in the area was identified by the provider community, partners, supports and agencies. This was echoed through meetings with the Local Advisory Committees. The Oregon Pediatric Improvement Partnership (OPIP) report on Health Complexity shows overall IHN-CCO does not differ much from the state in terms of youth health. Where IHN-CCO differs, is that it is higher with members who have 3 or more factors for Social Complexity. In the State of Oregon, 3.0% of youth were both complex chronic and had 3 or more factors for social complexity. In IHN-CCO, 3.8% of the youth meet that criteria, and 11.7% meet it for Non-Complex chronic and 3 or more social complexity, whereas the state of Oregon, was 9.5%. This gives IHN-CCO insight into best practice for these groups and the needs for youth. Complex Chronic and High Social Complexity youth do not respond well to telephonic care. This is an area where there is a need for Behavioral Health providers with a specialty in youth care readily available for members. Both the need for more providers for youth and the lack of response to telephonic care for these members was echoed at most rural Local Advisory Committee meetings. The members with non-complex chronic and high social complexity are at risk for inappropriate utilization. These are members that would thrive with lower levels of care and are where IHN-CCO will utilize community partners. The non-chronic, or healthy, youth with high social complexity are youth that need IHN-CCO will need to focus building resiliency with.

Members are very concerned about most areas of behavioral health care for youth in the state and especially transitional youth, 17 – 25-years old. One area of praise from all, is regarding Wraparound and the success it has had with youth. Below are gaps or barriers that were identified during the assessment and confirmed by members.
• Lack of providers with specialty for youth in the area and the youth being put on long
wait lists with providers.
• Lack of respite care for youth in the area and for the parents/caregivers of youth with
behavioral health issues.
• Crisis response
• Suicide prevention
• New capacity for residential beds
• Psychiatric alternative to sending youth out of county/alternatives to Emergency
Department (ED)
• Need for youth peer supports
• Family engagement and need for education about resources
• Communication/Care Coordination between Intensive Treatment Service (ITS) programs
and Community team (while child is in ITS care and through discharge)
• Psychiatric capacity - evaluation and prescription
• Bed availability for Behavior Rehabilitation Services and Psychiatric Residential
Treatment Services in state
• Delays in Individual Education Plans from school
• Capacity issues for outpatient mental health including culturally and gender specific
providers
• Housing for families
• Support in school for youth with challenging behaviors
• Child Development Resource Center referral wait list

Adult Mental Health Services

There is a great need for behavioral health in the IHN-CCO area, as roughly 8,000 of members
over the age of 18 qualify as severe and persistent mental illness (SPMI) right now. This number
has only increased in the last few years and will continue to unless working to address it. The
largest need is related to workforce and access to care. This need has been echoed by all in the
IHN-CCO area and is one of the areas of focus in the Behavioral Health Strategic Plan. With
many members needing behavioral health services and a limited number of behavioral health
practitioners, IHN-CCO is in need of standardized care pathways for members as they move
through differing levels of care. Below are gaps or barriers that were identified during the
assessment and confirmed by members.

• Discharge planning
• Outpatient mental health capacity
  o Shortage of participating outpatient mental health providers (therapists and
    prescribers); long waitlists
  o Inability to identify the specialty and availability of current participating providers
    – makes it difficult to refer members to appropriate care and slows discharge
    planning from higher levels of care
• Warm handoffs for members
• Limited crisis respite beds and step-down options for members discharging from
inpatient level of care
• Lack of low-income housing and shelter bed
Care Coordination

The need to strengthen Care Coordination at all levels of care was identified and confirmed by community members. IHN-CCO refers, offers and performs Intensive Care Coordination for all members, however members are not always aware of this. IHN-CCO will continue to evaluate and refine care coordination efforts to best meet the needs of the members. The parents and guardians of children were the most vocal about the need for this, as much of their time was taken up with coordinating care between the many supports and services.

Substance Use Disorder Treatment

Of those roughly 8,000 SPMI members in IHN-CCO, roughly 25% qualify as having a Substance Use Disorder and that rate is increasing each year. There is a great need for substance use treatment in the area. An area of need is Peer Support for these individuals. Both community partners and members have mentioned the positive effects of past peer support efforts and the need for it to grow. IHN-CCO also needs to better understand the number of physicians that can prescribe Medication Assisted Treatment (MAT) for members. Community members have described the trouble of transportation for MAT members and the issue with obtaining housing for members on MAT, as they are viewed as still using.

Housing

During the assessment and while visiting the Local Advisory Committees, affordable housing was big topic of concern. IHN-CCO is already working on many strategic initiatives to address this with community partners and will continue to throughout CCO 2.0. The Delivery System Transformation Committee (DST) has funded a few pilots around housing- one was placing a Health Navigator within low-income housing complex which reduced over 100 evictions within a year. A current pilot is building a care team around IHN-CCO members who are homeless. The DST also funded a pilot with five primary areas of focus; emergency housing assistance, transitional housing support, transportation support, reintegration into the community, and education around quality health, health care, and navigation. Housing is a priority area for the DST and the Social Determinants of Health Workgroup and upcoming initiatives/pilots will have a focus around housing.

D2. Please provide an analysis of the capacity of Applicant’s workforce to provide needed services that will lead to better health, based on existing Behavioral Health needs of the population in Applicant’s Service Area.

IHN-CCO maintains adequate member to provider ratios through contracting efforts with any willing provider that meets credentialing requirements and has been identified by a member’s need. Among other characteristics, IHN-CCO looks at geographic location of providers and members and considers distance and travel time, means of transportation, and physical access for members with disabilities when looking at providing an adequate network. IHN-CCO contracts with the majority of providers in the three-county service area, so that members do not have to travel more than 60 miles or 60 minutes to access health care services in rural areas or 30 miles or 30 minutes in urban areas, which are community standards. IHN-CCO is adequate due to the contracting and outreach efforts; as contracting happens with any willing provider that meets credentialing requirements and that has been identified by a member’s need.
As shown in the Behavioral Health Systems Maturity Assessment of CCO 1.0, IHN-CCO struggles with having minimally adequate population of behavioral health providers. Although Benton County meets the benchmarks in the assessment, Linn and Lincoln County do not. It is worth noting that this assessment is not specific to the Medicaid population. Based on information from the CAC and narratives from members, IHN-CCO believes there are access issues in all three of the counties.

IHN-CCO is committed to providing integrated health for members, as seen by the primary care physician (PCP) and behavioral health providers and care management staff work together with the member and their support team to develop the care plan. Members are screened for health risks and engaged in setting goals. Case managers, health care guides, behavioral health care managers and community partners all provide relevant information to the interdisciplinary care team and care plan. Care plans are revised as needed by the PCP and/or case manager with the member's input. Medical Management facilitates regular meetings to assist in coordination and is researching outside vendors as a possibility to increase efficiency. IHN-CCO utilizes many Traditional Health Workers (THW) in the region and will continue to expand the use of THWs.

IHN-CCO has utilized THWs including Peer Support Specialists and Peer Wellness Specialists within the Behavioral Health system for many years and is developing a roadmap to further increase utilization and integration. Some of the organizations that provide Peer services are Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.), Family Tree Relief Nursery, Family Support Programs, Oregon Family Support Network, and OneToAnother that provides family and youth support services. The three Community Mental Health Programs (CMHPs) also support Peer Delivered Services within the Behavioral Health system.

IHN-CCO has partnered with Benton County Health Department since 2013 to incorporate and build out the THW workforce and strategically implement THWs throughout the delivery system. Currently there are 145 THWs within the delivery system that work in clinics, housing complexes, schools, emergency departments, etc. A strategic plan has been developed by the Delivery System Transformation’s THW Workgroup to drive focus and change for the upcoming years. There is an emphasis on development of an expansion for all types of THWs and reaching out and identifying community agencies interested in utilizing THWs. The THW Workgroup will provide education and information to the interested agencies and determine what type of THW will best meet their service needs. The Peer Wellness Specialist transformation pilot is also supporting additional trainings for Peer Support Specialists and Peer Wellness Specialists.

IHN-CCO and numerous cross-sector organizations are pursuing transformational initiatives around THWs and behavioral health. Organizations and initiatives around Peer Supports:

C.H.A.N.C.E. views the key to the success of their program is that each member of the staff, uses his or her own personal life experience of recovery as an example that recovery is not only achievable, but real and imperative. C.H.A.N.C.E. assists with the physical, mental and behavioral health along with promoting individual, and group programs that foster health and resilience. They are increasing permanent housing, employment, education, and other necessary support networks and to reduce the barriers to social inclusion and stigma associated with mental health and addiction recovery. They are a recovery support service and offer variety of peer to
peer services and self-help groups (i.e. anger management, parenting classes, step work groups, dual diagnosis anonymous, symptoms management, etc.).

When IHN-CCO identified the need for additional capacity for substance use disorder (SUD) residential treatment and detox services. To meet this need, Samaritan Health Services is in process of developing a facility and has recruited additional medical practitioners to provide medical detox. Efforts to contract with providers that do alternative therapies have been increased as the tapering off of pain medications for enrollees has occurred.

In an effort to better meet the region’s needs higher acuity mental health and reflect a more contemporary model of care, Good Samaritan Regional Medical Center is reconfiguring its current mental health facilities. The result will be to convert one of the hospital’s two inpatient mental health units into an expanded, highly structured outpatient program. These “partial hospitalization” programs have been shown to eliminate the need for inpatient hospitalization for some patients, as well as decrease the length of stay for those admitted to the inpatient unit. When fully implemented, this outpatient program, combined with the remaining inpatient unit, will allow Samaritan Health Services to increase the number of individuals that can receive treatment services and supports.

IHN-CCO utilizes, and will continue to explore expanding, telemedicine so gaps in service can be reduced and eliminated. Other efforts to offset the behavioral health disparity will be explored and implemented if possible.

D3. How does Applicant plan to work with Applicant’s local communities and local and state educational resources to develop an action plan to ensure the workforce is prepared to provide Behavioral Health services to Applicant’s Members?

IHN-CCO is working with community partners, contracted providers, and other resources to evaluate the Behavioral Health workforce. IHN-CCO went to the Local Advisory Committees and learned that access to Behavioral Health providers and services is the number one concern of community members. IHN-CCO is making it a priority to address the workforce to ensure that there are not only enough providers to meet the needs of members, but also that they are providing it in a culturally, linguistically, and trauma informed way.

IHN-CCO supports the provision of mental health first aid training across the three-county region. Since 2013 approximately 3000 people across community and professional sectors have been trained. Training has significantly expanded the awareness and is the first line of defense for mental health. Last year, six Trauma Informed Care trainings were held with 155 people trained. There are 16 training scheduled for 2019.

Additionally, IHN-CCO funded the transformation pilot Helping High School Students to Understand Pain, Opioid Addiction, and Healthy Self-Care at Crescent Valley and Corvallis High School that supports children at risk for behavioral health issues.

IHN-CCO is engaging Oregon State University (OSU) to help perform a robust population health needs assessment and a workforce analysis. This analysis will be driving the strategic plan for Behavioral Health. With the engagement of OSU, IHN-CCO hopes to strengthen the
relationship with a major community partner and build a pipeline for their brightest graduates to join IHN-CCO in all capacities.

IHN-CCO will continue to engage community partners and community members in evaluating the workforce and working alongside IHN-CCO in completing the Strategic plan.

D4. What is Applicant’s strategy to ensure workforce capacity meets the needs of Applicant’s Members and Potential Members?

IHN-CCO’s strategy is to ensure the delivery system is designed and aligned to meet the needs of the population as identified in the population assessment. This means IHN-CCO knows the needs of members, current capacity, the capacity needed to serve those members, and a future forward view to ensure adaption to the current environment. IHN-CCO will continue to engage and build strong community support.

IHN-CCO is in discussions with Behavioral Health providers. Psychiatrist, psychologists, and Licensed Clinical Social Workers (LCSWs), who are currently not contracted with IHN-CCO to form a network and contract with IHN-CCO. This will increase the capacity of workforce for specialized mental health. IHN-CCO is working with all behavioral health providers in the network on creating and utilizing appropriate care pathways between specialty mental health and lower levels of care for stable members. Again, this will increase capacity for specialty mental health in the IHN-CCO service area.

IHN-CCO facilities initiatives to ensure providers are able to work at the top of their licenses through administrative efficiencies, work flow changes, VPB methodologies, use of THWs and Qualified Mental Health Associates, and other methods helps the workforce meet the needs of the members. IHN-CCO is working with Samaritan Health Services (SHS) to increase the residency and training programs and collaborating with education partners to develop the provider network. IHN-CCO has facilitated the development of a THW training hub to train more individuals from the communities in the region to become certified THWs.

IHN-CCO is committed to continually re-evaluate the information we have and will collaborate with the provider network and community partners to best meet the needs of the members in the service area.

D5. What strategies does Applicant plan to use to support the workforce pipeline in Applicant’s area?

As a more rural area, IHN-CCO is aware of the need to implement a “grow your own” strategy to strengthen the workforce pipeline. Therefore, IHN-CCO will investigate how it can partner with statewide universities in having graduate students placed in settings that serve the IHN-CCO. An example may be Portland State University’s graduate school of Social Work and working to get IHN-CCO related sites as a placement for their clinical hours. By implementing this practice, IHN-CCO will not only increase the workforce for the short-term while the student is placed but may increase the workforce long-term as the students are offered careers in those settings.
D6. How will Applicant utilize the data required to be collected and reported about Members with SPMI to improve the quality of services and outcomes for this population? What other data and processes will Applicant collect and utilize for this purpose?

IHN-CCO is using SPMI member population data and reports to identify trends, gaps and care pathway development among behavioral health delivery system partners. This information is analyzed monthly and presented to the Behavioral Health Quality Committee (BHQC) for review and decision making. For example, one area of work has been around the emergency department (ED) Disparity measure and how to address members seeking care in the ED inappropriately. IHN-CCO is using this collaborative model with other areas to serve members with SPMI, such as follow up with Mental Health Specialist after an inpatient psychiatric stay, to help members transition and ultimately avoid being admitted again. IHN-CCO is using this to identify gaps in care for members in the differing levels of care that is needed for these members.

IHN-CCO stratifies and analyzes the population of members with SPMI on a monthly basis. Through this analysis it has been discovered that Major Depressive Disorder is the highest prevalence in the region and has significant co-morbidity with SUD. Again, the BHQC is working together to create care pathways for these members. IHN-CCO will continue to expand this analysis and engagement with the community resources to better serve members with behavioral health needs.

D7. What Outreach and/or collaboration has Applicant conducted with Tribes and/or other Indian Health Care Providers in Applicant’s Service Area to establish plans for coordination of care, coordination of access to services (including crisis services), and coordination of patient release?

The IHN-CCO Provider Engagement Department is in contact with administration at the Siletz Community Health Clinic to establish regular meetings, to strengthen relationships, and have open lines of communication. IHN-CCO is setting up meetings to discuss programs offered by the Confederated Tribes of Siletz Indians, specifically Siletz Community Health Clinic, and determine how to enhance programs that benefit the region. Information discussed at quarterly meetings will be provided to the IHN-CCO Board and the Community Advisory Council (CAC). A strategic plan and workflow will be established the IHN-CCO Board, CAC, and the Confederated Tribes of Siletz Indians to best serve members. Confederated Tribes of Siletz Indians leadership also serves on the Regional System of Care Advisory Committee and Executive Council enhancing collaboration.

Covered Services Components

Substance Use Disorder

E1a. How will Applicant provide, in a culturally responsive and linguistically appropriate manner, SUD services to Members, including outpatient, intensive outpatient, residential, detoxification and MAT services?

The IHN-CCO Health Equity Workgroup supports delivery system transformation that identifies and reduces health disparities and advances health equity by: supporting the culturally diverse
needs of members (cultural competence training, provider composition reflects member diversity, Certified Traditional Health Workers and Traditional Health Workers composition reflect member diversity); supporting quality improvement focused on eliminating racial, ethnic, linguistic, and other disparities in access, quality of care, experience of care, and outcomes; and supporting IHN-CCO’s Community Health Needs Assessment and Community Health Improvement Plan. IHN-CCO’s Health Equity Strategic Plan’s vision is a community where all members of IHN-CCO can meet their potential for optimum health and well-being. The mission is that IHN-CCO meets the culturally diverse needs of Members and eliminates health disparities, including promoting a diverse workforce.

IHN-CCO supports the provider network to achieve mental health parity and health equity for members. The Behavioral Health strategic plan (including SUD services) includes strategies to ensure workforce receives cultural responsiveness training and trauma informed care principles. IHN-CCO will develop an education and outreach campaign in collaboration with IHN-CCO provider services and community clinicians. A system will be developed to monitor and track and compare training to national standards for evidence-based curricula. IHN-CCO care management staff are provided training such as motivational interviewing, trauma informed care and mental health first aid.

Additionally, educational materials for member are available in the member handbook, on the IHN-CCO website, and through customer service. Members are encouraged to call the plan for assistance. Trained and licensed staff are available to assist members. Other community educational opportunities are provided related to the dangers of opioid use and alternatives to that use.

E1b. How will Applicant provide culturally responsive and linguistically appropriate alcohol, tobacco, and other drug abuse prevention and education services that reduce Substance Use Disorders risk to Members?

IHN-CCO partners with the local education system and Community Mental Health Programs (CMHP) to provide Drug and Alcohol Prevention and Education services.

IHN-CCO encourages providers to engage in culturally responsive and linguistically (CLAS) appropriate prevention and education services. Through the process of Utilization Management, we review documentation of:

- Provision of collaborative and strengths-based services keeping the member at the center of the care plan and guiding the process.
- Culturally and spirituality informed practice will be provided to all members.
- Focus shall be on Integrating Health & Wellness, Mental Health, Sobriety, and Culture into the treatment plan, American Society of Addiction Medicine (ASAM) and services.
- Culturally appropriate referrals and support are provided as needed and upon request from the member. Referrals will be timely. Members will be able to access services and supports immediately or within 72 hours.

Monitoring processes include:

- Adherence to CLAS Standards: Policies, program design and services meet CLAS.
• Health Literacy: Thereby having the capacity to attain, manage and understand basic health information and services needed to make appropriate health decisions for themselves and their family.

• Linguistically Appropriate: Multi lingual staff and people of diverse cultures and backgrounds will be employed within the health plan and actively engaged in policy discussion and member engagement.

• Employment statement mission, agency mission statement, bylaws, orders of service, website, newsletter and all member materials will include inclusive welcoming language.

• Certified translators and staff from culturally diverse backgrounds are be available upon demand and when the need is recognized.

IHN-CCO and Signs of Victory (SOV) Homeless Shelter, Albany InReach Clinic, Oregon Health and Science University (OHSU) School of Nursing, and the Mid-Valley/ Coast Tobacco Prevention Initiative partnered to support the overall health and wellbeing of individuals who are homeless. This partnership focused on the development and adoption of a tobacco-free property policy as a strategy to promote tobacco cessation within the homeless population. To support this policy, this partnership also provided tobacco cessation and prevention resources, training opportunities for SOV staff, and appropriate education/resources to support the policy implementation. A Comprehensive Wellness Plan was developed and implemented a Community Health Navigator works in the wellness room about four hours a week to connect clients with resources, assist with navigating the health care system and social services, and act as an advocate on behalf of the client. The room also includes basic medical services such as blood glucose and blood pressure checks, and Hepatitis C and HIV tests. first aid, and basic hygiene supplies.

E1c. How will Applicant inform Members, in a culturally responsive and linguistically appropriate manner, of SUD services, which will include outpatient, intensive outpatient, residential, detoxification and MAT services?

IHN-CCO will ensure:

• All member materials will include properly translated and health literate verbiage.

• Qualified or Certified Health Care Interpreter translators and staff from culturally diverse backgrounds will be available for phone and face to face meetings.

• All staff will undergo implicit biased training and participate in cultural proficiency trainings.

• IHN-CCO will actively engage in culturally diverse community activities that advertise culturally inclusive and trauma informed SUD providers and services.

• Leaders and members from diverse communities and backgrounds will be asked to participate in focus groups that review member materials before being mailed to members to ensure accuracy and culturally competent language.

• Applicant will carry out focus groups within underserved and minority groups in order to constantly improve member materials and communication barriers.

• Programs and services meet culturally and linguistically appropriate services (CLAS) Standards.

E1d. In collaboration with local providers and CMHPs, ensure that adequate workforce, Provider capacity, and recovery support services exist in Applicant’s Service Area for individuals and
families in need of opioid use disorder treatment and recovery services. This includes: sufficient up to date training of contracted Providers on the PDMP, prescribing guidelines, buprenorphine waiver eligibility, overdose reversal, and accurate data reporting on utilization and capacity.

As Oregon ranks 6th in the nation for prevalence of substance use disorder (SUD) and Linn County ranks 7th in Oregon, IHN-CCO has identified the need for additional capacity for SUD residential and detox services. To meet this need, Samaritan Health Services along with partner agencies is developing a treatment facility in Lebanon. Samaritan Health Services has recruiting additional medical practitioners to provide medical detox and Medication-Assisted Treatment (MAT). The new program entitled Samaritan Treatment and Recovery Services (STARS) will expand to residential services once the facility is completed.

E1e. Coordinate with Providers to have as many eligible Providers as possible be DATA Waived so they can prescribe MAT drugs.

IHN-CCO is actively recruiting primary care providers to be Medication-Assisted Treatment (MAT) certified. IHN-CCO care management hub coordinates with providers and refers members to MAT certified providers.

IHN-CCO population data reports show that 30% of the members with SPMI have a co-occurring SUD and is working to design a delivery system to meet the needs of this population. The Behavioral Health Quality Committee is focusing on the needs of individuals with SUD. IHN-CCO is in process of cataloguing the current provider network to determine resource needs and develop strategies to address gaps and increase available workforce. This will include:

- Actively recruit SUD providers;
- Working with providers to identify SUD through screening;
- Establish care pathways;
- Enhance access to X Waiver providers through value-based payments; and
- Reduce barriers in billing to ensure timely payment.

E1f. Coordinate care with local Hospitals, Emergency Departments, law enforcement, EMS, DCOs, certified Peers, housing coordinators, and other local partners to facilitate continuum of care (prevention, treatment, recovery) for individuals and families struggling with opioid use disorder in their Community.

IHN-CCO has convened a Universal Care Coordination (UCC) Workgroup and has developed referral and care coordination pathways among services and supports providers. Community partners, Peer Support Specialists, care coordinators, and IHN-CCO attend UCC. IHN-CCO utilizes notifications and communication of high needs members through the notification and referral tracking system (Collective Plan and Unite Us) applications available through Regional Health Information Collaborative to coordinate care.
E1g. Additional efforts to address opioid use disorder and dependency shall also include: Implementation of comprehensive treatment and prevention strategies.

IHN-CCO’s 2019 Performance Improvement Plan (PIP) on Improving Opioid Safety is designed to assist members and providers with solutions to opioid use. The plan includes training and education. A summary of the last three years’ work and ongoing plan is underway. Barriers were prioritized based on utilizing existing workflows, stakeholder relationships, and educational opportunities. IHN-CCO prioritized the barriers that would have the most impact, such as implementing soft and hard stops on opioids to address overprescribing. Throughout the project, care was taken to keep prioritization of barriers fluid based on member grievances and feedback from providers to best meet the needs of members.

The processes and measures used to evaluate the effectiveness of each individual intervention are described below:

Opioid Quantity Limits intervention effectiveness was evaluated using the following:

- Quantity limit reject rate. We set up a system to reject opioid prescriptions at specific MED levels, with clinical review for appropriate usage. All opioid prescriptions were reviewed against these MED limits.
- Opioid usage. Quarterly, evaluated high dose opioid usage by members. There was a consistent and significant decrease in members on high dose opioids.
- Medication Assisted Treatment (MAT) utilization. The number of MAT drug prescriptions filled were collected quarterly and compared to prior year. As members taper off opioids and seek treatment for opioid dependence, we expected the utilization of MAT drugs to increase.
- Qualitatively, monitored provider and member grievance rates (related to opioids) to evaluate adoption/acceptance of the opioid quantity limits.
- Alignment with PainWise – a public resource created by a joint taskforce with healthcare partners of Benton, Lincoln, and Linn counties. This helps providers and the community understand pain so that it can be treated safely and effectively. (painwise.org)

Provider Education intervention effectiveness was evaluated as follows:

- Continuing medical education (CMEs) were evaluated by the attending provider and were determined effective based on whether the provider indicated they would make changes in their practice based on the CMEs information.
- Collected the number of contracted providers and new Samaritan Health Services (SHS) employees that completed the required onboarding pain management education and the number of people accessing the PainWise website. However, effectiveness data is not available for these specific interventions.
- Newsletter article effectiveness was not evaluated; however, distributorship numbers were collected.

Member Education intervention effectiveness was evaluated as follows:

- Pain classes (PainWise First Steps and Movement, Mindfulness, and Pain Science) were evaluated for effectiveness by tracking the number of members that completed the course and their individual opioid use before and after completing the class.
- PainWise website access data was collected monthly, however effectiveness data is not available.
• Newsletter article effectiveness was not evaluated; however, distributorship numbers were collected.

Interventions to address lack of funded alternative pain modalities were evaluated by analyzing the utilization of alternative treatments such as physical therapy, acupuncture, chiropractic manipulation, etc. Ultimately, were unable to tie the data directly to outcomes to prove effectiveness.

Opioid Quantity Limits intervention results:
• Quantity limit reject rate (2018): 94% Implemented system interventions that every opiate prescription was reviewed under and of the opiate prescriptions over the MED limits, 94% were rejected and 6% were covered based on clinical review.
• Opioid usage (9/1/17-8/31/18 most current data available): 7% of target population on >90 MED. This is a 51.7% improvement over the 2016 baseline.
• MAT utilization (2018): 5974 MAT drug prescriptions filled. This is a 56% increase over 2017 and a 173% increase from baseline (2016). An increase in the prescribing and utilization of MAT drugs shows that more members are accessing appropriate treatment and providers are recognizing the need for MAT to treat opiate use disorders and chronic pain. (Attachment 3)
• Opioid grievances (2018): 27 total (0 in Quarter 4)- Less than 1% of members on opioids filed a grievance. The lack of a significant number of grievances, compared to the number of members on opioids, speaks to the members and providers understanding the importance of actions taken. The low grievance rate also shows that interventions were implemented in such a way as to not elicit significant dissatisfaction from members or providers.

Provider Education intervention results:
• CME’s (2018): 1 CME was offered in 2018 on tapering patients off opiates. 15 providers attended and 12 returned surveys. All agreed that CME objectives were met and indicated that providers will alter their practice based on CME information.
• Contracted Providers completing pain education (2018): 84
• New SHS Employees completing opioid training (2018): 135
• PainWise website access: 118 PainWise newsletter subscriptions. 22 new opioid posts were added to Opioids in the News. 24 new posts were added to Articles and Videos. In 2018, the site received an average of 321 visitors a month and on average 84.8% of visitors to the site each month are new. There is no way to identify visitors as providers or members.
• Provider newsletter data (2018): One article with distributorship of greater than 500.

Member Education intervention results
• Pain classes PainWise First Steps (2018): 52 enrolled, 9 completed. Of the 9 members that completed the class, 33% were on opioids at the time of the class; of those, 33% were able to reduce their opioid usage after finishing the class. Zero members increased their opioid usage after completing the class.
• Movement, Mindfulness, and Pain Science (2018): 28 enrolled, 15 completed. Of the 15 members that completed the class, 27% were on opioids at the time of the class; of those, 25% were able to reduce their opioid usage after finishing the class. Zero members increase their opioid usage after completing the class.
PainWise website access: 118 PainWise newsletter subscriptions. 22 new opioid posts added to Opioids in the News. 24 new posts added to Articles and Videos. The site receives an average of 321 visitors a month and on average 84.8% of visitors to the site each month are new. There is no way to identify visitors as providers or members.

- Member newsletter data (2018): 3 articles with distributorship of over 26,500 English speaking and more than 1,100 Spanish speaking households.

Alternative pain modality intervention results (utilizing the most recent data available, Sept 2017 – Aug 2018)
- 35% of members on >90 MED of opioids (any day) also utilized an alternative pain modality.
- The most common alternative treatment utilized was Physical Therapy/Occupational Therapy. Many members used more than one type of alternative therapy.

Overall, this PIP appears to have produced positive effects without creating new harms. State data, from OHA, suggests a generally positive impact without a spike in opioid related deaths or death from non-pharmaceutical Fentanyl in the counties.

Next steps for each intervention based on evaluated data are described below:

The Opioid Quantity Limits intervention has been very successful in decreasing member’s opioid use and will be continued.
- Quantity limits that reject opioid prescriptions at specific MED levels will remain in place.
- Members naïve to opioid use will be limited to 49 MED and members on continued opioids will have a hard stop at 90 MED.
- MAT will continue to be made available to members and will be tracked by pharmacy programs.
- Provider and member grievances related to opioids will continue to be monitored by the Appeals and Grievance team.

The provider education intervention was successful in creating a paradigm shift in provider thinking about pain management and treatment.
- Through the onboarding process of new providers, future CME’s, and the PainWise website provider education will continue.
- Providers have the opportunity to attend the 2019 Oregon Pain Summit in January. This is a unique forum for clinicians to come together and learn about pain from a new perspective.

The member education intervention was successful in providing members with classes to enhance their knowledge of pain, pain management, and alternatives to opioid treatment.
- Both the PainWise First Steps and Movement, Mindfulness, and Pain Science classes will continue to be available for IHN-CCO members.
- The PainWise website will continue to be available to members.
Our successful implementation of covering various alternative pain modalities provided members the opportunity to utilize alternatives to opioid treatment that had been unavailable prior to this PIP.

- Coverage for alternative pain modalities will continue to be covered as per the expansive interpretation of Guidelines 56, 92, and 6.
- Because of the success of this PIP there is excitement to pursue the next statewide opioid PIP addressing opioid naïve members.
Prioritize Access for Pregnant Women and Children Ages Birth through Five Years

E2a. How will Applicant ensure that periodic social-emotional screening for all children birth through five years is conducted in the primary care setting? What will take place if the screening reveals concerns?

IHN-CCO is collaborating with the Regional Early Learning Hub around community education and awareness initiatives to support pregnant women, children, and families.

All contracted providers are required to complete a screening at the new patient visit. Additionally, screening occurs at the 9-month and 24-month well-child checks and yearly for ages 3-12. The adverse childhood experiences (ACEs) screening tool will be used to screen patients to determine behavioral health needs with Pathways to supports developed inclusive of Traditional Health Worker/Community Health Worker or Social Worker many who are
embedded within the clinics. They will be able to provide referral and connection to resources to support member ongoing. Many of pediatric clinics also use the Ages and Stages Questionnaire (ASQs) to determine developmental progress.

E2b. What screening tool(s) to assess for ACEs and trauma will be used? How will Applicant assess for resiliency? How will Applicant evaluate the use of these screenings and their application to developing service and support plans?

As part of a pilot, IHN-CCO is implementing Social Determinants of Health (SDoH) and Adverse Childhood Experiences (ACEs) screening tools for selected well child checks in a pediatric Patient-Centered Primary Care Home with a panel that includes more than 50% IHN-CCO members. Positive screens will be referred to the Community Health Worker (CHW) or social worker embedded in the clinic based on the results of the screening; for behavioral health, mental health, or SDoH services. The primary pilot goal is to improve the health and wellbeing of families who are experiencing, or who have experienced, violence and trauma, and who have a need for connection with social resources. The provider administering the tool is bilingual (Spanish and English) and sees a larger portion of the Spanish-only speaking families than most other providers.

IHN-CCO has created a tracking system for the ACEs and SDoH scores that are recorded with this tool and are consistently referring to the CHW’s for SDoH needs. Referrals for symptoms related to trauma are being referred to social workers in clinic or outside mental health professionals. Families are also offered parenting assistance for behaviors related to trauma. IHN-CCO is working with the provider network to implement and expand use of evidence-based resiliency screening tools in conjunction with the ACE screening tool. This will include but is not limited to depression screenings.

All providers within the IHN-CCO network are encouraged to be strength based in their assessment of members to ensure that inherent assets are supported as essential to progress and increased health. IHN-CCO endorses and supports the use of Motivational Interviewing to identify and resolve the ambivalence that interferes with positive change and help members find the internal motivation the leads to better health and social relatedness.

E2c. How will Applicant support Providers in screening all (universal screening) pregnant women for Behavioral Health needs, at least once during pregnancy and post-partum?

In 2017, the tri-county Perinatal Task Force and Samaritan Health Services (SHS) developed and implemented a universal prenatal drug, alcohol, intimate partner violence (IPV), and mental health screening protocol throughout Benton, Lincoln, and Linn counties. The evidence-based screening protocol utilized is the Screening, Brief Intervention, and Referral to Treatment (SBIRT) and the 5Ps (questions related to substance use by women’s parents, peers, partner, during pregnancy, and in the past) tool in conjunction with urine drug testing by patient consent.

IHN-CCO will work with providers to remove any barriers for related to their ability to perform screening for Behavioral Health needs for expecting mothers. IHN-CCO will work with the provider network to ensure pregnant women are screened for depression, anxiety and substance
use at least once at the members regular checkup time. This screening will be universal and documented in the providers Electronic Health Record (EHR). Post-partum members will also receive a screening for the same things above and it will be recorded in the EHR. If the screening is positive, the member is provided a warm handoff to work with a CHW or Social Worker that is embedded in the clinic to provide referrals or connections to resources.

E2d. How will Applicant ensure that clinical staff providing post-partum care is prepared to refer patients to appropriate Behavioral Health resources when indicated and that systems are in place to ensure follow-up for diagnosis and treatment?

As mentioned above, if the screening is positive, the member is provided a warm handoff to work with a CHW or Social Worker that is embedded in the clinic to provide referrals or connections to resources. IHN-CCO will work to implement referral tracking to ensure members referrals are being received and the member is receiving timely access to the services they are being referred to. If no capacity for the member to receive intake and assessment they will receive interim services while the members is on the waitlist.

E2e. How will evidence based Dyadic Treatment and treatment allowing children to remain living with their primary parent or guardian be defined and made available to families who need these treatments?

IHN-CCO continues to recruit providers who provide evidenced based therapies including parent-child dyadic treatment. IHN-CCO supports identification of specialties within the network. Parent Child Interaction Therapy (PCIT) is a therapy provided in all three of the counties.

IHN-CCO understands that success with children and their families is directly related to the parent-child attachment/relationship.

Outpatient Programs:

- Provide family sessions with the client (child) to focus on attachment-based interventions, trauma informed parenting and Collaborative Problem Solving.
- Provide family sessions without the client when specific parenting strategies are needed to review client’s related symptoms &/or behaviors and parenting strategies to provide trauma informed responses to the client’s activated responses resulting in related symptoms and behaviors.
- Provide in-home skills training sessions to assist client and parent in building healthy attachment, increase collaborative problem-solving skills and reinforce trauma informed parenting strategies learned in therapy sessions.

E2f. How will Applicant ensure that Providers conduct in-home Assessments for adequacy of Family Supports, and offer supportive services (for example, housing adequacy, nutrition and food, diaper needs, transportation needs, safety needs and home visiting)?

IHN-CCO utilizes the Maternity Case Management Plus Program (MCM+) for its members and is expanding its Value Based Payment contract. IHN-CCO will be expanding this program to
address the needs of the population with a higher category value based payments (VBP) model in place that supports providing access to more IHN-CCO pregnant members and families from the onset of pregnancy to postpartum, promoting the integration of care with the whole provider community, and the evaluation of quality outcomes and program effectiveness.

The purpose of the Maternal Case Management Plus Program is to expand upon the current delivery system to achieve the mutual goal of IHN-CCO, the non-clinical providers, public health providers, and the clinical providers in the community to help IHN-CCO women have healthier pregnancies, healthier outcomes, and to raise healthy children.

County public health partners will work collaboratively and connect women and their families to Obstetricians, behavioral Health providers, Traditional Health Workers, Dental providers, PCPCH’s, and to other health and parenting resources in Public Health and in the community, such as prenatal care and parenting classes. All providers shall visit pregnant women and new mothers where convenient for the member.

Nurse Family Partnership (NFP) services will be delivered using evidence-based home-visiting services per the National Service Office of Nurse Family Partnerships. This model includes building community resources and community service partners to support social determinants of health and coordination with clinical providers, traditional health workers and other community-based organizations.

Partners included in coordinating Maternal Case Management Plus Program care will use Health Information Technology (HIT) systems supported by IHN-CCO to collect data, including at a minimum social determinants of health information, ACEs scores, Health Risk Assessments to manage appropriate care plans and to ensure communication and information sharing with the appropriate non-clinical, public health, and clinical providers included in the care plan.

IHN-CCO Screening and Assessment Metrics:
- Completion of Health Risk Assessments (Family Connects)
- Patient satisfaction survey results
- Services and outreach provided to other family members in the home
- The percentage of pregnant women enrolled in the program
- The number of case management services provided
- Referrals for oral health
- Referrals for behavioral health
- Referrals to PCPCH
- Alcohol and drug screenings performed
- Completion of ACEs questionnaires

IHN-CCO will monitor the following performance metrics in PCPCH VBP contracts, dental care organization VBP contracts, and Traditional Health Worker contracts:

PCPCH:
- Timeliness to prenatal care and postpartum care
- Childhood immunizations
• Developmental screenings in the first 36 months of life

Dental Care Organizations:
• Increase the percent of members who have a dental visit during pregnancy

Traditional Health Workers:
• Childhood immunizations
• Developmental screenings in the first 36 months of life
• Referrals to MCM+ Program

E2g. Describe how Applicant will meet the additional Complex Care Management and evidence-based Behavioral Health intervention needs of children 0-5, and their caregivers, with indications of ACEs and high complexity.

IHN-CCO has included prioritized access for special populations in the Behavioral Health Strategic Plan. The needs of children 0-5 and their caregivers will be an area of focus.

IHN-CCO is implementing social determinants of health (SDoH) and Adverse Childhood Experiences (ACEs) screening tools at selected well child checks in pediatric Patient-Centered Primary Care Home (PCPCH) with a panel of more than 50% IHN-CCO members. Positive screens will be referred to the Community Health Worker (CHW) or social worker embedded in the clinic based on the results of the screening; for behavioral health, mental health, or SDoH services. The primary pilot goal is to improve the health and wellbeing of families who are experiencing, or who have experienced, violence and trauma, and who have a need for connection with social resources.

IHN-CCO has implemented a value-based contract with Family Tree Relief Nursery to support their child abuse prevention programs and early intervention services to children and families at no cost in Linn County. Their home-based family services increase access and support for high risk families including those experiencing high levels of stress as a result of poverty, domestic violence, behavioral concerns, drug and alcohol abuse, food insecurity, criminality and homelessness. A blended service delivery model has been developed using a home-based interventionist who is trained as a CHW and Peer Support Specialist (PSS) who is able to create a bridge between the family and their primary care home as well as linking them to additional health related services, providing parent education, recovery support services, access to food, early childhood education developmental screening and other behavioral and social supports.

IHN-CCO contracts with Old Mill Center for Children and Families to provide Psychiatric Day Treatment to youth 3-6 years old. The program has a strong focus of family therapy treating youth and their families with complex needs and connecting them to needed resources and community supports. In addition, Old Mill Center also has a relief nursery.

IHN-CCO is supporting the efforts of Olalla Center for Children and Families who provide services to youth and their families with complex behavioral health needs. Their innovative approaches provide a safe environment for youth and their families to reduce stress and engage in mindfulness, outdoor experiences and sensory integration and experiences to support positive social interactions and a healthy life. IHN-CCO supports the Olalla Center in
their process of becoming a relief nursery.

E2h. How will Applicant ensure children referred to the highest levels of care (day treatment, subacute or PRTS) are able to continue Dyadic Treatment with their parents or primary caregivers whenever possible?

IHN-CCO believes in the importance of family therapy particularly for youth 0 – 14. IHN-CCO has incentivized family therapy in the scorecards created with Trillium Family Services for youth in outpatient and intensive treatment services. As part of Utilization Management for youth in Intensive Treatment Services (ITS) and acute care services, Behavioral Care Managers review documentation for evidence of family treatment in both Treatment Plans and Service Notes. Discussion of the family involvement in treatment occur during the verbal Utilization Review (UR) process and is strongly encouraged.

The Behavioral Health Quality Committee, (BHQC), reviews data reports to determine if Pathways for Care are evidenced based and appropriate to the needs of members. Dyadic Treatment is an evidence-based practice that is encouraged.

- IHN-CCO includes family treatment in scorecards with incentives available.
- The BHQC reviews data reports to determine if appropriate pathways for care are utilized.
- Outpatient Treatment Providers are encouraged but not required to continue to be involved in assessing the treatment needs of members and their families through coordination with ITS providers and as part of transition planning.
- The Wraparound process continues as members and their families receive ITS and Wraparound goals related participation of families in treatment are monitored through the Wraparound and UR process for inclusion in ITS Plans of Care. Goals for transition are reviewed and objectives modified based on continuing assessments of the youth and family needs and expectations.

E2i. Describe Applicant’s annual training plan for Applicant’s staff and Providers that addresses ACEs, trauma informed approaches and practices, tools and interventions that promote healing from trauma and the creation/support of resiliency for families.

IHN-CCO develops, administers, and monitors completion of training material to staff and contractors through in-person and web-based training modules and programs. IHN-CCO currently requires staff to undergo Trauma Informed Care training and annual cultural competence training. Required cultural responsiveness and implicit bias training strategic plans are in the works and will be implemented in 2020. Multiple Health Equity Summits were held in Benton, Lincoln, and Linn counties in 2018-2019 targeted towards community and providers.

Care coordinators receive comprehensive training to ensure they are able to effectively engage and equip members with special and complex health care needs to access physical, dental, and behavioral health care and other services. While the education and training of care coordinators is essential, IHN-CCO recognizes a broader need for enhanced awareness and sensitivity training for community providers and staff, who serve members with special and complex health care needs.
Network providers and staff will receive additional cultural awareness and skills training to include, but not limited to, Cultural Diversity and Inclusion, Motivational Interviewing, Trauma Informed Care, and Mental Health First Aid. With enhanced training, providers will be equipped to engage members in shared decision-making, empowering members to live, work and thrive in their communities.

IHN-CO is partnering with the Linn-Benton Health Equity Alliance to provide additional and more in-depth provider and staff trainings in the region, with topics including cultural responsiveness, eliminating health inequities, and implicit bias. A plan is in place to develop education and outreach campaign in collaboration with IHN-CO Provider Services and community clinicians. IHN-CO will monitor using existing learning and documentation system that delivers and tracks required compliance training for direct contract clinicians.

**Care Coordination**

E3a(1). How will Applicant determine which enrollees receive Care Coordination services?

IHN-CO uses a population health management approach to screen members for Care Coordination Services. Members are identified and stratified according to health risks, special and complex health needs, conditions or disease and level of progression. Additionally, IHN-CO provides Care Coordination to members with high utilization of services and or those who are referred to the Care Coordination Hub by providers, family, or self-referred.

This includes but is not limited to:

- Children and youth engaged in mental health services that have two or more placement disruptions due to emotional and/or behavioral precipitators in less than one year
- Children and youth placed in a correctional facility solely for stabilizing a mental health condition
- Children and youth placed out of IHN-CO catchment area in Behavior Rehabilitation Services programs under the jurisdiction of child welfare
- Children and youth, known to be receiving or to have received care in an Emergency Department, or admission to Acute Inpatient Psychiatric Care and/or Sub-Acute Care or upon discharge from such care
- Individuals referred to Intensive Services (Psychiatric Day Treatment, Psychiatric Residential Treatment) without Wraparound
- Members referred to Secure Adolescent Inpatient Program (SAIP), Secure Children’s Inpatient Program (SCIP) services
- Members who experience Mental Health issues or a Substance Use Disorders (SUD)
- Members referred to Residential addictions and mental health services
- Members referred to state mental institutions
- Individuals experiencing multiple chronic conditions including mental illness or SUD
E3a(2). How will Applicant ensure that enrollees who need Care Coordination are able to access these services?

IHN-CCO provides Care Coordination services either through the provider network or internally through Health Care Guides, Behavioral Health Care Managers or Nurse Case Managers. Contracts with Behavioral Health Providers (including PCPCH) include Care Coordination and/or services meeting the requirements of the Oregon Administration Rules. Providers are required to complete an assessment at the time of entry and a service plan identifying needed services and supports.

IHN-CCO utilizes the Care Coordination Team e-mail as the referral pathway for individuals who need support in connecting to services or developing an Interdisciplinary Care Team (ICT) approach to identifying needs and appropriate care and supports. This includes but is not limited to: individuals who self-refer, individuals who are placed in Behavioral Rehabilitative Services (BRS), individuals transitioning from the state hospital. In addition, through the Utilization Management process, individuals in inpatient, residential, ITS or long term psychiatric care (LTPC) who benefit from a more Intensive Care Coordination (ICC) model are identified. Data reports help identify individuals who have been readmitted Inpatient or Residential programs, individuals identified as having co-occurring mental health and Substance Use Disorder and those individuals who have multiple emergency department services and have a mental health diagnosis.

E3a(3). How will Applicant identify enrollees who have had no utilization within the first six months of Enrollment, and what strategies will Applicant use to contact and assess these enrollees?

IHN-CCO uses reports to identify members who have had no utilization within the first six months of enrollment. These members receive outreach from the care management team, who will conduct health screenings, identify and resolve issues and encourage members to engage with their primary care physician (PCP). Members with Dual-Special Needs Plan (D-SNP) coverage are contacted by the care management vendor partner, AxisPoint Health, who will reach out to members to complete a health risk assessment (HRA) and develop and individualized care plan as well as link with a PCP.

The VPB that IHN-CCO has with PCPCHs appropriately incentivizes and reinforces the need for primary care practices to reach out to and engage attributed members in primary care. PCPCHs have increased their team-based approach allowing the workforce to outreach and engage members. Also, the significant increase in Traditional Health Workers (THWs) in the workforce throughout the region has increased the engagement of members into the health care system.

The IHN-CCO Community Advisory Council (CAC) identified this access measure in their Community Health Improvement Plan (CHP) and have been measuring the time from enrollment to first service since 2014. This has focused attention on reducing the amount of time it takes to see any provider and specific information regarding seeing a PCP. In future CHP progress reports there will be a data point regarding the average time from enrollment to seeing a behavioral health provider.
One of the indicators in the CAC’s 2018 CHP is length of time from enrollment to first appointment. IHN-CCO tracks this information. For IHN-CCO, the average number of days from enrollment to first appointment with a PCP has dropped 40 days since 2014. See Table 1.

Table 1. Average Number of Days for New IHN-CCO Members to See a Provider

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new members</td>
<td>27,765</td>
<td>15,975</td>
<td>14,304</td>
<td>16,739</td>
</tr>
<tr>
<td>Number with first Claim</td>
<td>19,211</td>
<td>10,872</td>
<td>8,172</td>
<td>9,660</td>
</tr>
<tr>
<td>Average number of days until first claim (any provider)</td>
<td>67.5</td>
<td>55.3</td>
<td>41.5</td>
<td>32.9</td>
</tr>
<tr>
<td>Average number of days until first PCP claim</td>
<td>87.8</td>
<td>72.3</td>
<td>53.3</td>
<td>47.8</td>
</tr>
</tbody>
</table>

E3b. How does Applicant plan to complete initial screening and Assessment of Intensive Care Coordination (ICC) within the designated timeline? (May submit work flow chart if desirable).

Standardized screening and assessment tools are used for all members referred to or identified for IHN-CCO care management. The initial screening is completed within two business days of identifying ICC needs. Information is gathered on member’s current medical, behavioral and oral health conditions, strengths, barriers, gaps in care and social determinants of health challenges including food security, transportation and housing. Once the screening and assessment are completed a care manager will identify if the member has triggered the need for ICC. If yes, they will be assigned to a care manager (Registered Nurse (RN) or Licensed Clinical Social Worker (LCSW)) or health care guide, depending on the acuity and need.

E3c. Please describe Applicant’s proposed process for developing, monitoring the implementation of and for updating Intensive Care Coordination plans.

IHN-CCO care management team provides outreach and conducts health screenings, makes referrals and coordinates care with the member and their providers. Members receive an individualized plan of care as outlined in the Care Coordination policy. Care Management policies are reviewed every two years, or as needed in alignment with the National Committee for Quality Assurance (NCQA) Population Health Management Standards. Care plans are created using information gathered through assessment and screening and care team meetings. Individualized care plans include goals and desired outcomes that are prioritized by the member and include their stated preferences and timeframe for reevaluation. Care managers provide education and resources so that the member is informed of care options, risks and benefits to make informed decisions about their care take charge of their health. Care managers convene interdisciplinary care team (ICT) meetings with the member and use collaborative approaches to support members in achieving their goals. Barriers are addressed, such as language or literacy level, understanding health care terminology and understanding their conditions and accessing food, housing and reliable transportation. Care plans are updated as members transition among providers and or levels of care with input from the member and ICT. The care team communicates regularly and share updates through a secure information platform.
E3d. How does Applicant plan to provide cost-effective integrated Care Coordination (including all health and social support systems)?

IHN-CCO has convened a Universal Care Coordination Workgroup of health and social service providers. A Strategic Plan has been developed to provide cost-effective integrated Care Coordination.

- Shared expectations among workgroup members: Organizational readiness and commitment; transparency and authenticity; shared definition of success; participation at all levels; act as ambassadors for the work; data sharing between organizations.
- Assessment and intakes: Implement shared platform and application including intake to meet needs of local community;
- Referral Mechanism: develop shared platform for agency referrals; define outreach expectations; develop mechanism for multi-directional referrals between (e.g. agencies, clinics and community partners)
- Resource Directory: start building resource lists, housing as first priority; identify strategy for subsequent priority areas; plan for updating directory information

IHN-CCO also supports a shared platform for real-time and close-looped referrals from health providers to social support systems, and vice versa.

E3e. What is Applicant’s policy for ensuring Applicant is operating in a way guided by person centered, Culturally Responsive and trauma informed principles?

IHN-CCO Member Rights and Responsibility Policy supports the provider network to achieve mental health parity and health equity for members. The Behavioral Health strategic plan will develop strategies to ensure workforce receives cultural responsiveness training and trauma informed care principles. IHN-CCO will develop an education and outreach campaign in collaboration with IHN-CCO provider services and community clinicians. A system will be developed to monitor and track and compare training to national standards for evidence-based curricula. IHN-CCO care management staff are provided training such as motivational interviewing, trauma informed care, and mental health first aid.

E3f. Does Applicant plan to delegate Care Coordination outside of Applicant’s organization? How does Applicant plan to enforce the Contract requirement if Care Coordination delegation is chosen?

The SNP portion of the population, approximately 1500 members, have been delegated to the Care Management Vendor, AxisPoint Health (APH) for care coordination. IHN-CCO works closely with APH to ensure seamless care is provided to members in accordance to D-SNP Model of Care. There is monetary risk associated with not meeting regularity compliance for the vendor around the SNP membership and care coordination. IHN-CCO plans to mitigate the risk delegating this through regular operations meeting, receipt of all necessary data to verify results, and regular audits of documentation.

IHN-CCO includes Intensive Care Coordination (ICC) in contracts with Local Mental Health Authorities in each County specific to provision of Wraparound and Assertive Community Treatment (ACT). Oversight and monitoring are conducted regularly.
Wraparound: A youth is determined eligible for Wraparound Services if requested by a guardian and meeting the following criteria:

- 0-17 years of age (or members who continue receiving Wraparound services from 18-25 years of age), AND
- Placement in Secure Adolescent Inpatient Program (SAIP), Secure Children’s Inpatient Program (SCIP), OR
- Receiving services from Psychiatric Residential Treatment Services or the Commercial Sexually Exploited Children’s residential program funded by Oregon Health Authority, OR
- High mental health acuity exhibited by behaviors which include psychotic, suicidal or homicidal behavior or ideation and pose a significant risk of harm to self or others. OR
- Engaged in intensive outpatient mental health services and has one of the following:
  - High mental health acuity exhibited by high risk behaviors. OR
  - Has one or more placement disruptions to living environment in less than one year. OR
  - Behavior has impacted ability to receive appropriate education AND other interventions have been tried without sustained success. OR
  - Has been assessed by two or more child serving agencies or providers as having significant challenges.

IHN-CCO currently has Care Coordinators providing either ICC or Wraparound based on the youth and family request.

IHN-CCO monitors the provision of ICC and Wraparound provided by Community Mental Health Programs (CMHP) through the review of the CMHP policies and procedures, participation in Community Practice Level Committees and monthly lists of members served.

ACT is currently provided and meeting fidelity standards in both Benton and Linn counties. Criteria meets requirements as identified in the Oregon Administrative Rules.

- IHN-CCO monitors the provision of ACT provided by County Mental Health through the review of the Community Mental Health Providers policies and procedures and monthly lists of members served.
- As part of Strategic Plan for Behavioral Health 2020 – 2024 see Attachment 11: Behavioral Health Strategic Plan, IHN-CCO will be more involved in directly monitoring ACT delivery developing a comprehensive plan for ACT will meet the needs of members and contractual obligations, clear roles and responsibilities, accountability standards and how members will be supported if they chose not to be involved in ACT or do not meet criteria.

E3g. For Fully Dual Eligibles, describe any specific Care Coordination partnerships with your Affiliated Medicare Advantage plan for Behavioral Health issues.

For the SNP population, Care Coordination is being performed by the care management vendor, AxisPoint Health in accordance with the Model of Care and CareTogether care management program. IHN-CCO works with all community partners, local agencies and resources, and the provider network, to ensure partners and members know about the Care Coordination available through IHN-CCO. Members may have many people involved in their healthcare and IHN-CCO...
serves a crucial role to coordinate the coordinators working with members to avoid possible confusion and ensure seamless interaction with healthcare professionals. AxisPoint Health staff are well versed in benefit, service, and coordination of care needs for each plan, IHN-CCO and SNP, respectively.

SNP Members will receive a health risk assessment (HRA). IHN-CCO will provide multiple attempts to reach members and complete that HRA so that the care plan can be individualized to meet that member’s need. If unable to contact the member, a care plan is developed based on conditions present from assessment of claims data and other information. Members are continually monitored for changes in condition regardless of whether they complete the HRA. Members with identified care gaps will be identified and contacted to engage them in appropriate services. An example of this is PCP linkage for members who have not seen their PCP in 6 or 12 months to work to close this gap. This is one way IHN-CCO identifies members that have had no or little utilization of services in the first six months of enrollment for SNP members. Care management staff will work to make telephonic contact, letter contact, and even leverage the local Traditional Health Worker (THW) to reach these members.

E3h. What is Applicant’s strategy for engaging specialized and ICC populations? What is Applicant’s plan for addressing engagement barriers with ICC populations?

IHN-CCO uses a trauma informed and culturally responsive strategy to engage members with complex and special health needs receiving Intensive Care Coordination (ICC). Through the screening and assessment process the assigned care coordinator identifies member’s preferred method of contact, cultural and language preferences. The care coordinator works with the member and their primary supports to identify care team members including natural and community supports. Once identified, member will outreach via telephone up to three times. After two attempts, care coordinator will send an introductory mailer to member to inform of ICC services and how to contact a care coordinator. Care coordinator will engage members of the care team to identify strategies to support member engagement if above mentioned efforts are unsuccessful.

Members who are transitioning from a specialized program are assigned a Care Coordinator based on their assessment of need and most appropriate service provider. The specialized program will provide a warm hand-off to the care coordinator allowing members to participate and engage in communication and planning.

IHN-CCO recognizes that involvement with Peer Support Specialists (PSS) and THW can improve the development of rapport and relationships important to member engagement and are working with the provider network to increase the number of PSS and THW.

IHN-CCO has involved the Community Mental Health Programs (CMHP) to provide ICC for youth ages 0-17 who exhibit significant behavioral health challenges which interfere with their ability to regulate emotions and to effectively integrate with their family and community. ICC supports understanding of the needs of the youth and their families and referrals to needed services and supports.
For adults ages 18 and older, CMHP are expanding their models of response to include ICC as an alternative to Assertive Community Treatment (ACT). In addition, ICC is provided as part of the Early Assessment and Support Alliance (EASA).

E3i. Please describe Applicant’s process of notifying a Member if they are discharged from Care Coordination/ICC services. Please include additional processes in place for Members who are being discharged due to lack of engagement.

Members will receive a phone call and a letter when goals are met are discharged from ICC services. IHN-CCO care managers verifies contact information and outreach to the member at least three times before discontinuing ICC services. After the three attempts, a letter will be sent offering contact information in the event member decides to engage or has another need in the future. Members will continue to be monitored through data and reports and contacted if conditions change or needs are indicated.

If the member is being discharged from ICC for a lack of engagement, IHN-CCO is following the same format as above but instead of the letter and/or phone call stating it is because the members goals have been met, it will instead say due to a lack of engagement. The member will receive information by phone and or letter on how to contact the ICC team in the event the member decides they will be engaged or have another need in the future.

For those members not directly provided Care Coordination/ICC services by IHN-CCO staff, IHN-CCO meets needs of members by identifying, with providers, clear roles and responsibilities and processes for engaging members in alternative/individualized plans to meet their needs. In addition, the reasons and process for referring and transitioning Care Coordination from one Provider/Agency to another will be defined.

E3j. Describe Applicant’s plans to ensure continuity of care for Members while in different levels of care and/or episodes of care, including those outside of Applicant’s Service Area. How will Applicant coordinate with Providers across levels of care?

IHN-CCO defines Care Coordination as a service that involves deliberately organizing member care activities and sharing information among all participants concerned with a member’s care to achieve safer and more effective care. This means that the member’s needs and preferences are known ahead of time and communicated at the right time to the right people, and that this information is used to provide safe, appropriate, and effective care to the member. IHN-CCO defines ICC as a process to coordinate multiple services and supports available to members who have complex medical, dental and/or behavioral health needs that may include multiple chronic conditions and/or severe and persistent behavioral health challenges. ICC facilitates communication between member, providers and community partners through interdisciplinary care teams to address health disparities, assist in accessing appropriate preventative, remedial and supportive care and services, and manage transitions and gaps in care to improve outcomes.

Like all services, IHN-CCO views Care Coordination as a continuum of support based on the needs, complexity and acuity of members. Although the goal is to support self-determination and self-efficacy, some individuals require more assistance to identify needs create a care plan and care pathways. The continuum of care is virtual in perspective and not limited to a specific
setting. Care Coordination occurs in different settings and by different providers depending on the needs of the member and where they are best served. This includes those agencies and individual practitioners who provide behavioral health services and those partner agencies who serve populations based on identified issues such as Department of Human Services (DHS), Seniors and People with Disabilities, Juvenile Justice, and Education. In all cases, there is an expectation that Care Coordinators will be involved in: Understanding member’s needs; developing a Plan of Care; and developing strategies for implementing the Plan of Care and coordination between team members (which at minimum includes the member and the care coordinator). In situations that are more complex and have multiple systems involved in supporting the member, ICC will additionally involve: development of an Interdisciplinary Team; evaluating and ongoing monitoring of the Plan of Care; continuous assessment and revision of the Plan of Care as necessary; and evaluating outcomes.

In the Strategic Plan for Behavioral Health 2020 – 2024, IHN-CCO will develop a comprehensive plan for how care coordination will be provided to meet the needs of members and contractual obligations, clear roles and responsibilities, tools for care coordination, and accountability standards. This will include a more thorough mapping of the system of care coordination as it currently exists, and development of the future state based on best practice standards and determination of those providers who are the most appropriate care coordination service provider. Roles and responsibilities will be better defined specific to individuals referred to and from the Oregon State Hospital (OSH) and the Special Needs Populations (SNP) and how IHN-CCO can work with providers without duplicating or interfering but remain involved in monitoring progress and defining successful outcomes. In addition, the reasons and process for referring and transitioning care coordination from one provider/agency to another will be defined. Referral pathways will be better identified and information on these pathways disseminated to providers and members.

Care Coordination System

Care Coordination is provided by a range of providers who are contracted and funded by IHN-CCO. This includes but is not limited to: PCPCH Providers, Community Mental Health Programs, C.H.A.N.C.E., Willamette Family Housing, Family Relief Nursery, Traditional Health Workers, Inpatient Mental Health, Intensive Treatment Service Providers, and IHN-CCO. Either Care Coordination or Intensive Care Coordination is provided to Members:

Age 0 – 5: PCPCH and Specialty Behavioral Health Providers including Old Mill Center for Children and Families, Olalla Center for Children and Families, Family Tree Relief Nursery

Children and Youth

ICC including Wraparound: All three Community Mental Health Programs, Trillium Family Services, Old Mill Center for Children and Families and Olalla Center for Children and Families

ICC

- Children and youth engaged in mental health services that have two or more placement disruptions due to emotional and/or behavioral precipitators in less than one year.
- Children and youth placed in a correctional facility solely for the purpose of stabilizing a mental health condition.
• Children and youth placed out of the CCO catchment area in Behavior Rehabilitation Services programs under the jurisdiction of child welfare.
• Children and youth, known to be receiving or to have received care in an Emergency Department, or admission to Acute Inpatient Psychiatric Care and/or Sub-Acute Care or upon discharge from such care.
• Families/Youth are unable/unwilling to participate in the Wraparound process.
• Access, when appropriate, to Intensive Treatment Services (Psychiatric Day Treatment, Psychiatric Residential Treatment) without Wraparound

Care Coordination
• Youth receiving services from SCIP and SAIP service ensuring appropriate transitions by linking Child and Family Team and Intensive outpatient services
• Youth Placed in Substitute Care through DHS

Adults
• ICC provided through Assertive Community Treatment (ACT) for individuals who meet the Oregon Administrative Rules admission Criteria
• Care Coordination
  o Provided for individuals referred to and receiving services through Residential addictions and mental health services
  o State mental institutions and other mental health hospitals settings to facilitate Member transitions
• Members who have been service two or more times in the Emergency Department
• Members with complex medical and behavioral health issues as identified through Health Risk Assessments and Data reports

The table below represents current pathways for Care Coordination. Note that, depending on the complexity of the case, capacity of providers and pathway for referral, members with similar characteristics may have their Care Coordination provided by different individuals.
E3k. How will Applicant manage discharge planning, knowing that good discharge planning begins from the moment a Member enters services?

IHN-CCO RN and LCSW care managers will concurrently review care, treatment and services for members who are admitted to a facility. Upon admission, concurrent reviewers will refer members to the care management hub for discharge planning, ongoing care management and care coordination needs. Interdisciplinary care team meetings will be scheduled through the care management hub and include primary care and specialty providers, durable medical equipment (DME) suppliers, social supports, family as member requests to ensure services are coordinated.

IHN-CCO is aware that many members are engaged in supports and services from others in the community. IHN-CCO will work directly with the supports and services for members that are discharging. This will occur through expansion of HIT, specifically Collective Plan and its ability to set up alerts on cohorts. Through strong partnerships with community supports and services, IHN-CCO is set up for success knowing that good discharge planning begins before the member even enter services.

E3l. What steps will Applicant take to ensure Care Coordination involvement for ICC Members while they are in other systems (e.g., Hospital, subacute, criminal justice facility)?

IHN-CCO care management supports members across the continuum of care, including the criminal justice system by coordinating transitions and ensuring warm handoffs between
providers and that the care plan and support team are updated. Communication between the care
team members are essential in assuring safe transitions and interdisciplinary care team meetings
are convened by care management staff regularly. Additionally, IHN-CCO has collaborated with
stakeholders to implement Collective Plan platform. This platform enables real-time tracking and
secure communication among providers across the continue of care.

Providers who support youth involved in Wraparound and ICC, and adults involved in ACT and
ICC, will continue and be expected to actively be involved in the Interdisciplinary Team to
ensure that services are available and coordinated through transitions and meet the need of the
Members.

E3m. Describe how Applicant will ensure ICC Care Coordinators will maintain the 15:1
caseload requirement.

IHN-CCO care management leadership monitors care coordinator caseload ratios regularly by
reviewing monthly reports of caseloads and referrals. There is a convening group of stakeholders
developing standards and policies around acuity and case levels. The policy will assist in
monitoring and evaluating necessary shifts in caseloads; maintain the 15:1 caseload requirement.

E3n. Which outcome measure tool for Care Coordination services will Applicant use? What
other general ways will Applicant use to measure for Care Coordination?

Care management services are comprehensive of whole person care and include physical,
behavioral, social, and oral health needs. Medical Management reviews and evaluates reports of
care management services on a monthly and quarterly basis. IHN-CCO use the Plans of Care to
track outcomes of members. The percentage of members who have been identified for care
management services, the participation rate and number of members participating in Individual
Care Team (ICT) meetings who are identified for the service are tracked. There is a process for
outcome tracking of services as well as monitoring health risk assessment completion rates. IHN-
CCO also uses Consumer Assessment of Healthcare Providers and Systems (CAHPS) results to
identify issues and measure outcomes. Additional measures include care gap closure and no-
show rates for primary care providers.

E3o. How will Applicant ensure that Member information is available to Primary Care
Providers, specialists, Behavioral Health Providers, care managers and other appropriate parties
(e.g., caregivers, Family) who need the information to ensure the Member is receiving needed
services and Care Coordination?

The interdisciplinary care team includes the PCP, specialists, behavioral health providers, care
managers and others, including the member and natural support system. The care team develops
the individualized care plan together and regularly updates the plan via care team meetings.
Information is shared amongst the care team. IHN-CCO has access to Epic and Collective Plan
to use as a collaborative mechanism for identifying team members and Care Plans. IHN-CCO is
involved in workgroups to enhance the use of these platforms. The use of the Regional Health
Information Collaborative (RHIC) is being developed to understand functionality related to
members Social Determinants of Health needs.
Severe and Persistent Mental Illness (SPMI)

E4a. How will Applicant work with OHA, other state agencies, and other state funded or operated entities to identify areas where treatment and services for adult Members with SPMI can be improved?

IHN-CCO welcomes the opportunity to increase collaboration with OHA, other state agencies and other entities that provide treatment services for adult members with SPMI. It is critical that state funded services and services that are the responsibility of IHN-CCO become more connected and collaborative to better meet the needs of individuals with SPMI. A few years ago, IHN-CCO was involved in a pilot project with OHA as an early adopter of Adult Mental Health Residential Services and continue to be very interested in engaging discussions about how to best move that part of the Medicaid program into the CCO benefit. Additionally, IHN-CCO looks forward to discussion about increasing the role of IHN-CCO with the Oregon State Hospital and models of risk sharing.

IHN-CCO Behavioral Care Manager and Medical Management Director participate in CCO Behavioral Directors Meeting monthly and CCO Oregon Behavioral Care Managers Meeting quarterly. This supports the sharing of best practices and enhanced communication and collaboration on member and provider issues. Because OHA representatives are also involved in these meetings, opportunities to increase understanding of community responses and resource needs are discussed increasing cooperative processes in meeting state and federal expectations. IHN-CCO Chief Medical Officer and Medical Director attend the state Quality and Health Outcomes Committee (QHOC). The purpose of the committee is to bring together clinical leadership from CCOs and their community partners across the state to coordinate and lead quality improvement efforts and support the implementations of innovative health care practices throughout the state.

E4b. How will Applicant provide oversight, Care Coordination, transition planning and management for Members receiving Behavioral Health services, including Mental Health Rehabilitative Services, Personal Care Services and Habilitation Services, in licensed and non-licensed home and Community-based settings, to ensure individuals who no longer need placement in such settings are transitioned to a Community placement in the most integrated Community setting appropriate for that person?

Members receiving behavioral health and mental health services in community-based settings will have a care coordinator assigned. Initial screening, assessment, and individualized care plan will already be completed and initiated. Care plans are revised frequently. When a member is identified for transition to a community placement, a re-assessment is completed. Specific discharge criteria are used to develop a successful transition plan. The transition plan is shared with the member, if appropriate, and member’s care team. Frequent meetings are conducted to work towards the transition.

Policies and procedures exist and are used as part of the oversight of the transition plans. Policies include requirements of initial screening, assessment and care plan completion and creation. The Medical Management Behavioral Health Transitions policy provides guidance on requirements
as well as oversight activities. IHN-CCO holds monthly meetings with involved stakeholders to review transition plans. Analysis of the plans is documented in oversight and monitoring dashboards to assist with trending and reporting as well as remediating any issues identified.

E4c. How will Applicant ensure Members with SPMI receive ICC support in finding appropriate housing and receive coordination in addressing Member’s housing needs?

Intensive Care Coordination (ICC) policies and procedures outline criteria for ICC which includes assessing needs, barriers, and gaps. Social Determinants of Health (SDoH) are part of the screening and assessment tool used for each member receiving ICC, which includes housing. Members with SPMI may also receive support through ACT or other community programs and ICC will coordinate with those programs to connect member with housing needs. IHN-CCO Universal Care Coordination Model allows for closed loop referrals to housing assistance programs and the ICC coordinator will assist member in connecting to appropriate housing.

E4d. How will Applicant assist Members with SPMI to obtain housing, Supported Housing to the extent possible, consistent with the individual’s treatment goals, clinical needs, and the individual’s informed choice?

IHN-CCO and CMHP work closely with community programs that support members in obtaining appropriate housing. Members who are in specialized populations and those receiving ICC will include housing in the screening process to identify needs, barriers and gaps, including housing. The member and their care team will identify optimal options to support member’s choice, goals and clinical needs.

Examples of community programs IHN-CCO partner with is Willamette Neighborhood Housing Services (WNHS.) WNHS provides safe and health affordable housing along with support and education opportunities. A THW resident services program is supported by IHN-CCO to help meet a variety of needs and maintain stable housing. C.H.A.N.C.E. is another community partner who provides emergency housing assistance, transitional housing support, transportation support, reintegration into the community, and support with permanent housing. Members who may need more structured supportive housing will be evaluated for community-based settings and a referral can be made through Unite Us.

E4e. How will Applicant ensure ACT services are provided for all adult Members with SPMI who are referred to and eligible for ACT services in accordance with OAR 309-019-0105 and 309-019-0225 through 309-019-0255?

IHN-CCO conducts a yearly audit of the CMHP which includes a review of policies and processes for the provision of ACT services. Yearly outcome reports submitted to Oregon Center of Excellence for Assertive Community Treatment (OCEACT) and OHA and results of Fidelity Reviews are also received ensuring ACT Fidelity. IHN-CCO receives monthly reports of individuals referred to ACT and lists of active and discharged members. IHN-CCO coordinates with Oregon State Hospital and Community Mental Health to monitor referrals to ACT and adherence to eligibility requirements.
E4f. How will Applicant determine (and report) whether ACT team denials are appropriate and responsible for inappropriate denials. If denial is appropriate for that team, but Member is still eligible for ACT, how will Applicant find or create another team to serve Member?

IHN-CCO follows Oregon Administrative Rule 309-019-0248 to evaluate denials of ACT services for adult members with SPMI are based on established criteria and are recorded in a manner that allows for denials to be accurately reported out. IHN-CCO receives monthly lists to provide oversight and monitoring of ACT and evaluate if denials are appropriate.

Reports include the following:
- The reasons for not admitting;
- The disposition of the case; and
- Any referrals or recommendations made to the referring agency, as appropriate.

In addition, if an individual is denied ACT services and has met the admission criteria set forth in OAR 309-019-0245, the individual who is denied services or their guardian may appeal the decision by filing a grievance in the manner set forth in OAR 309-008-1500. If deemed inappropriate, IHN-CCO Behavioral Health care management lead will work directly with CMHP to address the inappropriate denials. Outcome will be determined on a case by case basis.

Individuals who meet admission criteria and are not admitted to an ACT program due to program capacity may elect to be placed on a waiting list until there is capacity for development of a new team. IHN-CCO shall monitor each community waiting list until sufficient ACT program capacity is developed to meet the needs of the ACT eligible population. In the interim, member will be offered ICC to support member’s ongoing needs.

E4g. How will Applicant engage all eligible Members who decline to participate in ACT in an attempt to identify and overcome barriers to the Member’s participation as required by the Contract?

IHN-CCO will request information on eligible members who decline to participate in ACT and utilize the Intensive Care Coordination (ICC) Model to outreach to members. Barriers to participation will be identified and an Interdisciplinary Care Team developed to include members in identifying needs, creating goals, assessing resources, and developing a Care Plan. Members who have identified needs that qualify them for ACT need active engagement in other treatment services and support and actively participate in the development of a care plan that keeps them engaged with a provider. Peer support services often are the best way to provide engagement and support until a person is ready to engage in ACT.

E4h. How will Applicant provide alternative evidence-based intensive services if Member continues to decline participation in ACT, which must include Care Coordination?

Members who decline participation in ACT will be offered intensive care coordination. Once identified for ICC the care coordinator will complete an initial screening and assessment. Members will be notified via phone and mail of their assignment. Identification of member’s care team is done through the assessment. An individualized plan of care is created to support the
member and shared with the care team, if appropriate. Care Coordination is voluntary, so member may decline at any time.

E4i. How will Applicant work with Secure Residential Treatment Facilities (SRTFs) to expeditiously move a civilly committed Member with SPMI, who no longer needs placement in an SRTF, to a placement in the most integrated Community setting appropriate for that person?

IHN-CCO will partner with the CMHPs and Secure Residential Treatment Facilities (SRTFs) to support members with timely stepdown from SRTF to the most appropriate integrated community setting. To do this, IHN-CCO will:

- Participate (and facilitate if needed) ICT meetings with the SRTF and CMHPs to ensure care coordination and proactive discharge planning is occurring.
- Monitor member’s treatment progress and readiness for discharge through utilization reviews of the SRTF treatment plans and progress notes (if IHN-CCO is approved to be an Early Adopter for the residential transition again).
- Ensure that qualified members are being referred to ACT and other Community Mental Health programs to support members’ stability as they transition out of SRTFs.
- Once discharge placements are determined, IHN-CCO will ensure that members have access to physical health, mental health, and dental providers in their new placement locations.

E4j. How will Applicant work with housing providers and housing authorities to assure sufficient supportive and Supported Housing and housing support services are available to Members with SPMI?

IHN-CCO and CMHP work closely with community programs that support members in obtaining appropriate housing. Members who are in specialized populations and those receiving ICC will include housing in the screening process to identify needs, barriers and gaps, including housing. The member and their care team will identify optimal options to support member’s choice, goals and clinical needs.

IHN-CCO partners with Willamette Neighborhood Housing Services (WNHS) and Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.). and provides Community Health Workers and Peer Supports to facilitate development of life skills and to ensure stable housing for members. WNHS provides safe and health affordable housing along with support and education opportunities. There is a resident services program to help meet a variety of needs and maintain stable housing. For continued sustainability and partnership IHN-CCO has a VBP with WNHS and C.H.A.N.C.E.

Members who may need more structured supportive housing will be evaluated for community-based settings. The referral software, Unite Us, will also play a role in helping identity housing needs, gaps, and successes.

E4k. Provide details on how Applicant will ensure appropriate coverage of and service delivery for Members with SPMI in acute psychiatric care, an emergency department, and peer-directed
services, in alignment with requirements in the Contract.

IHN-CCO will receive alerts from Collective Plan when members enter acute psychiatric care and the emergency department. Through the Care Management Hub, the member is assigned the appropriate care coordinator who reviews the assessments and supports development of a Plan of Care engaging peer services when identified in the plan. IHN-CCO includes review of discharge/transition plans as part of the utilization management process. Services provided, and Plans developed are part of this review.

**Emergency Department**

E5a. How will Applicant establish a policy and procedure for developing a management plan for contacting and offering services to each Member who has two or more readmissions to an Emergency Department in a six-month period? The management plan must show how the Contractor plans to reduce admissions to Emergency Departments, reduce readmissions to Emergency Departments, reduce the length of time Members spend in Emergency Departments, and ensure adults with SPMI have appropriate connection to Community-based services after leaving an Emergency Department and will have a follow-up visit within three days.

IHN-CCO has implemented Collective Plan for real-time notification of members entering the emergency department (ED). Additionally, IHN-CCO developed reports to identify members with two or more readmissions to an emergency department in a six-month period. The care management team uses the Collective Plan system and reports to identify members who may need assessment or reassessment and initiatives an interdisciplinary care team (ICT) meetings. IHN-CCO received technical assistance from OHA on best practices around reducing ED use for members with serious mental illness. IHN-CCO has collaborated with CMHPs and PCPCHs, mapping touch points and creating care and referral pathways and developing ICC plans for these members.

IHN-CCO is revising the Medical Management Plan to include these approaches and emerging best practice for reducing ED use. The most significant impact is seen from convening ICTs and developing a consistent plan among providers and stakeholders with the member and their support system.

The Behavioral Health Quality Committee (BHQC) has a strategic plan for behavioral health services in the region designed to empower members to live, work and thrive in their communities.

Tenants of the strategic plan are:
- Population Assessment
- Workforce and provider network
- Delivery system
- Financing and payment models and;
- Leadership and accountability.

The framework of the Medical Management Plan as well as the tenants of the Behavioral Health strategic plan will assist IHN-CCO in developing a comprehensive management plan to provide
support to members to respond proactively to member needs and prevent inappropriate use of the ED. The management plan will include the following:

Cohort reports to identify members who have had two or more readmissions to an ED in a six-month period. Collective Plan, a web-based communication tool for notification to IHN-CCO care management team and partners of members who have entered the emergency department; whether within or outside of the region. A secure email notification alerts IHN-CCO care management hub as soon as data is entered in Collective Plan from the ED, typically within 30 minutes of admission.

IHN-CCO care management staff receive the notification same day and use a workflow to determine triage steps. If a member has not yet been identified for ICC, a screening and assessment checklist gather pertinent information including member’s current medical, behavioral, and oral health conditions, strengths, barriers, gaps in care and social determinants of health challenges including food security, transportation and housing. Once the screening and assessment are completed a care manager will identify if the member has triggered for intensive care coordination. If yes, they will be assigned to a care manager (Registered Nurse or Licensed Clinical Social Worker) or health care guide, depending on the acuity and need.

The assigned care coordinator will evaluate the member’s care team and contact the ED care management staff as well as CMHP, if applicable. For members already receiving mental health crisis services the local Eds and CMHPs have a process to outreach to members within 48 hours after member is discharged from the ED.

Once the care team is identified an interdisciplinary care team meeting will be scheduled as soon as possible. The ICT offers a multi-disciplined approach to evaluate member’s whole person needs. A plan of care will be developed and will include person-centered interventions to offer support and services to the member.

The care coordinator will work with the member and/or support system as well as the primary care provider to ensure a follow up visit is scheduled within 3 days. If the member is not engaged with a primary provider, the care coordinator will assist member in accessing care as well as assignment of a primary care provider.

From a systems level, the BHQC members have begun to map touchpoints and identify causal factors for the ED visits and determine if there are systemic issues, such as ability to access to care. Issues identified will be brought back to the BHQC and Quality Management Council to address.

Oregon State Hospital

E6a. How will Applicant coordinate with system partners as needed regarding Oregon State Hospital discharges for all adult Members with SPMI?

IHN-CCO will partner with system partners to ensure that appropriate and timely care coordination and discharge planning is occurring for all members with SPMI admitted to the Oregon State Hospital (OSH). Upon receipt of a notification of admit to the OSH, IHN-CCO will
reach out to the assigned OSH social worker and CMHP representative to request to be included in the discharge planning process. IHN-CCO will coordinate with system partners as needed through participation (and facilitation if needed) in care coordination / discharge planning meetings, utilization review of OSH treatment plans and progress notes, and establishment of work groups with each of the CMHPs to align and streamline care coordination and discharge planning processes for member receiving care at the OSH.

E6b. How will Applicant coordinate care for Members receiving Behavioral Health treatment while admitted to the State Hospital during discharge planning for the return to Applicant’s Service Area when the Member has been deemed ready to transition?

IHN-CCO will partner with the CMHPs to coordinate care for members hospitalized at the OSH who are deemed ready to transition with the plan to return to the IHN-CCO service area. IHN-CCO will convene workgroups with each of the three CMHP to identify the care coordination needs and align processes. Care coordination efforts will include, but are not limited to, identifying each member’s specific discharge needs, involving the necessary system partners to support discharge planning, ensuring that appropriate referrals are made for post discharge care including referrals for placement / housing, ACT and/or other County Mental Health programs, and ensuring that members will have access to physical health, mental health and dental providers post discharge.

Supported Employment Services

E7a. How will Applicant ensure access to Supported Employment Services for all adult Members eligible for these services, in accordance with OAR 309-019-0275 through 309-019-0295?

IHN-CCO provides Supported Employment Services for adult members eligible through the Community Mental Health Programs (CMHP). Benton and Lincoln counties offer Supported Employment and Supported Education to individuals involved in their ACT and Early Assessment and Support Alliance (EASA) programs as part of their assessment and treatment plan. Linn County expands this to all adult clients who have a persistent mental illness. Employment specialists demonstrate competencies in the Supported Employment fidelity model.

Lincoln County Health and Human Services is in the process of developing their supported employment program and is meeting with both Linn and Benton counties to better understand the requirements of the program and needs of the clients.

IHN-CCO is in the process of reviewing all policies and processes related to Supported Employment as part of the monitoring of the CMHP.
Children’s System of Care

E8a. What Community resources will Applicant be using or collaborating with to support a fully implemented System of Care?

IHN-CCO fully embraces the System of Care values and principles for children and youth with or at risk for mental health or other challenges in support with their families. IHN-CCO continues to work to organize the region into a coordinated network and implement services and supports that builds meaningful partnerships with families and youth, and addresses their cultural and linguistic needs, in order to help them to function better at home, in school, in the community, and throughout life. Children, youth, and their families who benefit from services and supports from multiple child-serving systems, benefit even more when services are coordinated, and the system is integrated.

In the spirit of a System of Care approach there is solving problems, filling gaps, and breaking down barriers in collaboration with all system partners. IHN-CCO has served as the backbone entity but full implementation of a System of Care is not the sole responsibility of one entity but a shared responsibility across child serving systems with meaningful involvement of youth and families. As an example, the issue of crisis respite was identified as a service gap. IHN-CCO worked closely with Department of Human Services (DHS) to share resources that brought
Morrison Child and Family Services into the region to develop a set of crisis respite homes in the region. Additionally, the Regional Executive Council identified the need to have a Regional System of Care Coordinator position that will function independently of any one organization but collectively for the system to assist in the full implementation of a System of Care. This position will be funded through blended resources of six organizations and administered through the Early Learning Hub.

E8b. Please provide detail on how Applicant will utilize the practice level work group, advisory council, and executive council.

IHN-CCO and partners from Linn, Benton, and Lincoln counties have implemented high fidelity Wraparound since July 2015 and there are currently 126 children, youth, and their families involved in Wraparound. The governance structure and key functions of the region’s System of Care is outlined in figure SOC 1. There are operational practice level workgroups in each county and IHN-CCO staff participate in each of these workgroups. The practice level workgroups began with the sole focus of children, youth, and their families who were involved in Wraparound. Last year IHN-CCO worked in partnership with the practice level groups to expand the focus from Wraparound cases to a broader System of Care approach. The practice level groups focus on all the children, youth, and families across the child-serving systems by supporting child and family teams by solving and reporting the barriers, gaps, and successes. There has also been a functional Regional Advisory Committee that has majority membership of youth and family representatives with cross system child serving system representation from throughout the region in operation since November 2015. The Regional Advisory Committee’s key functions are carried out through the development and implementation of a strategic plan, development of the Wraparound policy, review and problem solving of the barrier submission forms, and escalation of issues and agenda items to the Regional System of Care Executive Council. In 2018 a Regional System of Care Executive Council was established. The Council includes executive leadership from all child serving systems, state and local family and youth representation, and IHN-CCO. The Council has moved through the formation stages of developing a charter, operationalized a barrier submission and communication process, problem solved regional care coordination, and agreed upon the established of a System of Care Regional System of Care Coordinator position.

E8c. How does Applicant plan to track submitted, resolved, and unresolved barriers to a SOC?

The Regional System of Care Executive Council derives its’ agenda and strategic direction from the experiences of the child and family teams and the local system of care structures. Through the identification of local successes, challenges, and barriers the Regional Executive Council can engage in cross system policy and resource decision making to increase the success of the child and family teams and local systems of care.

1. Each county will establish a method to collect barrier submission forms from child and family teams and other local groups that problem solve individual cases and local system problems.

2. On a quarterly basis each county local system of care structure will submit a quarterly report to the Regional System of Care Advisory Committee. This report will highlight problems
that are not being successfully solved locally and include problems that cross two or more child and youth serving systems.

3. The Advisory Committee will review the three county reports and provide a summary report to the Executive Council. The summary report will highlight problems that are identified in at least two of the three counties and involve two or more systems, a brief description, and recommended solutions.

4. The agenda for the Executive Council meeting will be generated from the identified areas in local reports and have been processed through the Advisory Committee.

5. The Executive Council will provide regular status updates at each of the Advisory Committee meeting.

6. The Executive Council will identify and communicate policy, financial, and regulatory barriers to the State System of Care Executive Council.

E8d. What strategies will Applicant employ to ensure that the above governance groups are comprised of youth, families, DHS (Child Welfare, I/DD), special education, juvenile justice, Oregon Youth Authority, Behavioral Health, and youth and Family voice representation at a level of at least 51 percent?

The Linn, Benton, Lincoln System of Care Advisory Committee has included in its Strategic Plan the need to cultivate partnerships and generating support among stakeholders and policymakers. This is achieved by asking each local area and agency partner to develop a list of key stakeholder and policy makers that effect change in the children and youth system of care and provide to LBL Regional System of Care Advisory Committee. A requirement to have meaningful family and youth involvement at all levels is included as a requirement of the governance system and the Charters of each Committee.

The Regional Advisory Committee has been the governance group that have worked hard to ensure 51 percent family and youth representation. The Advisory Committee is co-chaired by a family representative and professional member who has been from DHS I/DD, the current co-chair is from the special education system. IHN-CCO works with local System of Care groups to recruit family and youth to serve on the Regional Advisory Committee. One of the key functions of the Regional System of Care Coordinator position is to facilitate family and youth recruitment and retention. The Regional Executive Council includes the following members; Advisory Committee co-chairs, DHS District Manager, County Health Department Administrator, Juvenile Department Director, Education Service District Administrator, Early Learning Hub Executive Director, School Superintendent, Primary Care Physician, Siletz Tribe leadership, IHN-CCO CEO, family and youth positions, Statewide Family Organization Executive Director, Statewide Youth Organization Chief Operating Officer, Statewide behavioral health provider, and Regional Housing Administrator.

Wraparound Services

E9a. Provide details on how Applicant plans to ensure administration of the Wraparound Fidelity Index Short Form (WFI-EZ)?

IHN-CCO requires each of the Community Mental Health Programs (CMHPs) to submit a list of youth approved for Wraparound, the dates the WFI-EZ was offered and the date it was
completed. WFI-EZ’s are sent to IHN-CCO Behavioral Health staff who enter them into the system. Because of this, we are very aware of the surveys completed. IHN-CCO regularly communicate with the CMHPs as to the numbers of surveys completed.

IHN-CCO runs reports and provides feedback to CMHPs on completion rates. IHN-CCO has oversight and are working actively to increase response rates. One of the CMHPs, with the poorest response rate, has created a plan to address barriers and facilitate increasing the survey completion rate. Reports have also been submitted through the Linn Benton Lincoln System of Care Governance Structure and this group will provide additional improvement recommendations.

E9b. How will Applicant communicate WFI-EZ and other applicable data to the System of Care Advisory Council?

IHN-CCO runs WFI-EZ reports both as a regional aggregate and county by county. These are provided to the System of Care Advisory Committee on a regular basis. IHN-CCO runs data reports on members served by county, age, diagnosis, and services provided. The System of Care Advisory Committee is in process of developing a comprehensive list of data elements that are currently available and desired outcomes measures. They will then prioritize those reports that support defined outcomes. The System of Care Executive Council will also be requesting data from IHN-CCO as well as other system partners as they establish and monitor shared outcomes and accountabilities.

E9c. How does Applicant plan to receive a minimum of 35 percent response rate from youth?

IHN-CCO will require that the CMHP Wraparound programs offer the WFI-EZ survey to youth. The System of Care Governance structure has a number of youth participants. The voice of the experiences of youth provides direction on how to relay information about the survey to youth in a way that is meaningful and empowers them.

E9d. How will Applicant’s Wraparound policy address:

E9d(1). How Wraparound services are implemented and monitored by Providers?

Practice Level Workgroups monitor Wraparound on the local levels. Because these workgroups also serve as the review committee, they are in the best position to determine whether referrals meet Wraparound criteria, ensure the shared population of focus is being served, maintain and review the referrals and analyze referrals to look at disparities, patterns and barriers.

The System of Care Advisory and Executive Council will support the monitoring of Wraparound requesting information and data from the Practice Level Workgroups and IHN-CCO as needed. IHN-CCO requires each CMHP/Wraparound program to submit their processes of implementation, program statistics and compliance with Wraparound Fidelity standards as part of the Wraparound Fidelity Assessment System. These are reviewed annually and as needed.
E9d(2). How Applicant will ensure Wraparound services are provided to Members in need, through Applicant’s Providers?

IHN-CCO is responsive to families and community partners collaborating on creating solutions to barriers and challenges. IHN-CCO is in regular contact with the CMHP/Wraparound programs through the various System of Care meetings attended and are aware of the limitations of each system. The Behavioral Health Quality Committee (BHQC) supports provision of evidenced based practice and system development to meet the needs of members.

IHN-CCO has implemented a barrier submission form process to collect and act upon issues and gaps identified at the child and family team level. This information flow through the System of Care governance structure at the county level through the Regional System of Care Executive Council.

E9e. Describe Applicant’s plan for serving all eligible youth in Wraparound services so that no youth is placed on a waitlist. Describe Applicant’s strategy to ensure there is no waitlist for youth who meet criteria.

IHN-CCO requires that alternatives are always available to meet the needs of the youth. All youth referred to Wraparound are reviewed at the Practice Level Workgroup with solutions offered by the partnership. IHN-CCO provides Intensive Care Coordination to youth ensuring that barriers are reduced, and services provided appropriate to the needs of the youth.

E9f. Describe Applicant’s strategy to ensure that Applicant has the ability to implement Wraparound services to fidelity. This includes ensuring access to family and youth peer support and that designated roles are held by separate professionals as indicated (for example: Wraparound coaches and Wraparound supervisors are filled by two different individuals).

- IHN-CCO requires through contracts with the CMHP Wraparound agencies that Oregon Administrative Rules are followed, and System of Care Principles followed. This includes that each County have a Wraparound Coach and monitor compliance.
- Each of the three IHN-CCO Counties have Family Support organizations which include youth. These programs ensure that family and youth support are available to the Wraparound process.
IHN-CCO Behavioral Health STRATEGIC ROADMAP (2019 - 2024+)
Empower members to live, work, and thrive in their communities

Roadmap is subject to change.
Attachment 11: Strategic Roadmap

Last updated: March 15, 2019

2019
Q3
Q4
Identify Subpopulations

2020
Q1 – Q2
Q3 – Q4
Reports Created
Identify Services Needs based on Prevalence
Catalogue Current Provider Network including capacity & Diversity
Assessment of Cultural Responsiveness & Trauma Informed Training
Develop Strategy to address gaps & implement
Care Pathways and Handoffs Created and Implemented
Evaluation of BH Spend & Risk Sharing

2021
Q1 – Q2
Q3 – Q4
Standardized Screening & Assessment Adopted and Implemented
Partner With State and Local Resources
Referral Pathways Created
Design & Implement Risk Sharing Arrangement with OSH
Create & Implement Funding for Screening with Providers
Define Accountability Standards Across Provider Types & Network
Develop Oversight Strategy for IHN & Subcontractors

2022
Q1 – Q2
Q3 – Q4
Standardized Screening Occurring

2023+
Q1 – Q4
Risk Sharing with OSH

Holding Pen: BHQC Metrics

IHN-CCO BH Strategic Roadmap (2019 - 2024+)
Attachment 11: Strategic Roadmap

Last updated: March 15, 2019
## Strategic Plan for Behavioral Health 2020 – 2024

Develop a comprehensive plan for behavioral health services in our region designed to empower members to live, work, and thrive in their communities.

### Population Assessment
- Design delivery system to meet the needs of population

### Workforce & Provider Network
- Support provider network to achieve mental health parity and health equity for members

### Delivery System
- Provide access to full array of services, that are responsive to member needs, including focus on OHA identified special populations

### Financing & Payment Models
- Implement financing models, including Value Based Payments to advance quality, evidence-based practice and integration

### Leadership and Accountability
- Establish system oversight and accountability

<table>
<thead>
<tr>
<th>Leadership and Accountability</th>
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<tbody>
<tr>
<td>Establish clear roles and accountability</td>
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<tr>
<td>Define data and tools necessary for operations, care coordination, VBP, and population health</td>
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<tr>
<td>Define accountability standards across provider types and network</td>
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<tr>
<td>Refine outcome-based system management</td>
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<tr>
<td>Streamline regulatory reporting</td>
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<tr>
<td>Develop oversight strategy for IHN and sub contractors, LMHA</td>
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<tr>
<td>Standardize care pathways</td>
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<tr>
<th>Workforce &amp; Provider Network</th>
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<tbody>
<tr>
<td>Catalogue the current provider network, include detail on capacity and diversity of workforce to ensure parity with members</td>
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<tr>
<td>Develop strategy to address gaps and increase available workforce</td>
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<tr>
<td>Partner with local and state resources to develop pipeline and workforce expansion initiatives</td>
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<tr>
<td>Ensure workforce receives cultural responsiveness training and trauma informed care principles</td>
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<tr>
<th>Delivery System</th>
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<tr>
<td>Alignment, quality improvement and integration through PCPCH/BHCH model</td>
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<tr>
<td>Provide effective coordination of multiple services and supports</td>
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<tr>
<td>Culturally-responsive care pathways and handoffs structured and supported</td>
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<tr>
<td>Seamless referral and access pathways</td>
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<tr>
<td>Prioritized access for special populations</td>
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<tr>
<td>Specialized services – e.g., ACT, Wraparound</td>
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<tr>
<td>Ongoing member, family and community engagement and feedback</td>
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<th>Financing &amp; Payment Models</th>
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<tr>
<td>Advance APMs that increase provision of services and supports</td>
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<tr>
<td>Evaluate BH spend and risk sharing</td>
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<tr>
<td>Align payment and incentives for screening, early identification, early intervention, and recovery supports</td>
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<tr>
<td>Risk sharing agreements across providers</td>
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<tr>
<td>Design and implement risk-sharing arrangement with Oregon State Hospital</td>
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### Population Assessment
- Combine disparate data sources, including SDoH to provide a comprehensive view of member needs
- Assess population needs through robust tools and analytics
- Develop prevalence reports
- Identify subpopulations – e.g., SUD/SMI – Pregnancy and 0-5 yrs., develop cohorts
- Identify service needs based on prevalence of conditions
- Standardized screening and assessments

### Workforce & Provider Network
- Identify workforce needs based on member needs and SDoH
- Ensure workforce diversity in role and level (e.g., Para, RN, NP, PA)
- Partner with local and state resources to develop pipeline and workforce expansion initiatives
- Ensure workforce receives cultural responsiveness training and trauma informed care principles

### Delivery System
- Align system and culture to advance SDoH and achieve mental health parity and health equity for members
- Develop strategy to address gaps and increase available workforce
- Partner with local and state resources to develop pipeline and workforce expansion initiatives
- Ensure workforce receives cultural responsiveness training and trauma informed care principles
Attachment 12: Cost and Financial Questionnaire

Evaluate CCO performance to inform CCO-specific profit margin beginning in CY 2022

A1. Does IHN-CCO have internal measures of clinical value and efficiency that will inform delivery of services to Members? If so, please describe.

IHN-CCO has internal measures of clinical value and efficiency that informs delivery of services to Members. IHN-CCO utilizes multiple internal metrics to evaluate the scope, value and outcomes of services provided to our members. It is critical that IHN-CCO have a solid understanding of our provider network beyond payments. IHN-CCO is committed to continue its work to transform its provider network to value based care through both Value Based Payment (VBP) Models and Network management using measures to inform this change. IHN-CCO works closely with our providers to agree on service specific measures. In many cases we collaborate to develop the measure and how provide the data needed.

IHN-CCO uses measures across all service categories. Each service and provider is unique and requires measures that inform their performance. The list below is a sampling of internal measures used by IHN-CCO in 2019 to evaluate the delivery of services to our members.

Medical Measures
- ED utilization
- Readmissions
- Inpatient Admits
- Acute Admits
- HRA penetration
- Palliative care evaluations
- Utilization of specific service categories
- Blood pressure control
- Diabetes management
- Cesarean versus vaginal delivery rates
- Well-child check visits
- drug adherence rates

Behavioral Health
- Follow-up after crisis intervention in the emergency edepartment (ED) for members age 18 and over for primary reason of mental health crisis within 7 days of discharge
- Follow-up within 7 days after discharge from a psychiatric hospitalization for mental illness
- Increase the number of individuals who are receiving peer-delivered services
- Assertive Community Treatment (ACT) - Increase in the number of supported employment services for members enrolled in ACT
- ACT - Number of clients enrolled in ACT remain in the community
- Increase the number of individuals served by mobile crisis
• Mental health assessments within 60 days for children in Department of Human Services (DHS) custody
• Recidivism within 60 days of discharge of a youth psychiatric residential stay
• Return to psychiatric hospital within 45 days from discharge from a psychiatric hospital
• Two or more care coordination (wrap-like) encounters provided while youth is in psychiatric residential care
• Inpatient psychiatric length of stay
• Parent-Child Interaction Therapy effectiveness

Dental
• Meaningful Use: EHR certification at least 2015 CEHRT (Certified EHR Technology)
• Dental health assessment for kids in DHS custody
• Follow-up within 14 days of an emergency department visit for dental crises
• Oral health non-traumatic dental care visits

Maternity
• Pregnancy and oral health: Increase the percent of members who have a dental visit during pregnancy
• Health Risk Assessment (HRA) tool completed for the family
• Reduce the overall total cost of care for those members enrolled in the Maternal Case Management (MCM+) Program
• Referrals: For oral health, prenatal care, behavioral health, or primary care Physician (PCP)
• Tobacco, alcohol, and drug screenings (SBIRT) completed for MCM+ prenatal members

Non-Emergent Medical Transportation (NEMT)
• Call center: 80% of all calls are answered within 2 minutes or less
• Complete intake and screening on new members
• Conduct sampling on member reimbursement by verifying appointments
• Maintain shared rides

A2. What tools does IHN-COO plan to deploy to identify areas of opportunity to eliminate Waste and inefficiency, improve quality and outcomes, and lower costs?

IHN-COO utilizes a variety of tools, data, expertise, and processes to identify areas of cost savings to achieve a sustainable rate of growth. These tools identify areas of opportunity to eliminate waste and inefficiency, improve quality and outcomes, and lower costs. IHN-COO recognizes that not one process or tool is going to allow IHN-COO to meet the growth target. Cost targets can only be met through cross-functional collaboration with multiple perspectives into the data and analysis. The tools outlined are only part of the solution we utilize. These tools are critical to enabling collaboration within and outside IHN-COO to meet cost goals.

• Core financial systems – IHN-COO utilizes Facets to process claims and PeopleSoft for its financial system. Facets is a powerful customizable claims system that houses enrollment,
provider information, fee for service (FFS), and capitated claims payments. Facets acts as the system of record which allows IHN-CCO to download claims and member data to other data repositories. PeopleSoft is the financial system utilized by all Samaritan Health Services (SHS) subsidiaries to record the general ledger, accounts payable, payroll, and financial reports. Budgets are loaded in to Peoplesoft at the account level to provide variance analysis of month, quarter, and year to date results.

- **Empower – IHN-CCO** implemented a data warehouse and reporting tool (Empower) launched in 2018. The platform utilizes the IBM Cognos Analytics business intelligence solution. This provides secure access across the organization to actionable data on claims, pharmacy, health, Social Determinants of Health (SDoH), providers, enrollment, authorization, financial, and custom data tables. Through this tool our staff can access key data to understand the performance of their respective function. In addition, we maintain a centralized reporting system utilizing Crystal Reports Server. These dual systems ensure we have needed data for each functional area at the tip of our fingers. Not only are analysts able to get the data they need to perform ad hoc analysis and ongoing reporting, but any employee can quickly view important organizational dashboard reports on membership, social determinants of health, and claims to gain an understanding of the health and financial status of our plan and members.

- **Regional Health Information Collaborative (RHIC) –** Through the (RHIC) we are able to gain insights into the services and conditions surrounding our members. This provides IHN-CCO and its participating provider network with a 360, or complete, view of each member. RHIC links health plan claims data with disparate provider Electronic Health Records into one location for optimal member care. RHICs consolidated care record is an important tool in eliminating waste and the provision of duplicative services. The data feeds supporting the RHIC also feed into Empower, which is critical to IHN-CCO’s understanding the health and services affecting the member. Through RHIC data linked with cost of care for the member, we can understand the effectiveness of services which then drives where funds should be invested.

- **Quarterly Business Review (QBR) –** IHN-CCO has embraced a management practice around developing workflows and measuring results of key performance indicators. Functional areas are required to develop workflows for their respective processes. These are then connected with other departments to gain a cross functional view of key processes. To ensure the processes are efficient and effective, measures are developed tied to critical processes. Correlated with process measures are Outcome measures that track performance of key lagging indicators, such as Medical Loss Ratio (MLR), customer service scores, or quality metrics. Outcome measures are selected based on key strategic goals IHN-CCO is working to achieve. Process measures are then tied to these strategic outcome measures as well as Core processes required to run operations. Each quarter executive leadership and Directors review these measures in the QBR. Measures that achieved targets are ‘green’. Measures that missed targets but are low risk are considered yellow, and measures that missed targets and are a risk are ‘red’. The QBR discusses drivers of yellow and red measures. Red measures are directed to workgroups or committees to develop a plan of action to bring the measure into the green.
Plan of action examples include, making processes more efficient, evaluating contracted services, or reviewing staff performance levels.

- **HCG Grouper – IHN-CCO** utilizes Milliman’s HCG (health care guideline) Grouper software product. The software categorizes claims and pharmacy costs by categories of service. This data can further be drilled down to provider and business lines for specific timeframes. The service levels are detailed with up to 12 inpatient groups, 14 outpatient groups, 36 professional groups, and other miscellaneous groups. Using this reporting tool at the PMPM level with yearly and quarterly trends provides valuable insights into the cost trends impacting IHN-CCO. Once outlier trend service categories are identified, analysts drill into lower levels of the category to understand the root cause, such as a cost, utilization, provider, or benefit change driving the trend increase.

- **Clearwater** – The Clearwater software is used to report IHN-CCO’s investment portfolio under NAIC guidelines as well as monitor the risk and performance of the portfolio. The software reports on the average rating of the portfolio, duration, return, and where investments may be out of investment policy guidelines.

A3, A4, and A5. Does IHN-CCO have a strategy to use Health-Related Services to reduce avoidable health care services utilization and cost? If so, please describe. What is IHN-CCO’s strategy for spending on Health-Related Services to create efficiency and improved quality in service delivery? What process and analysis will IHN-CCO use to evaluate investments in Health-Related Services and initiatives to address the Social Determinants of Health & Health Equity (SDOH-HE) in order to improve the health of Members?

IHN-CCO recognizes the importance of Health Related Services (HRS) in managing costs while improving quality and access and has a strategy to reduce avoidable health care services utilization and cost. Several strategies have been implemented in prior years while new strategies are in development. HRS utilization strategy is long term process that requires investment, monitoring, evaluation, and modification on an ongoing basis.

*Current and prior investments*

Over the past contract period IHN-CCO has routinely invested in HRS with our capitation partners. Our county Mental Health contracts allow for spending in flexible or HRS services. These are non-billable member services such as care plan setting, health education, crisis lines, exercise support, and outreach activities. From past 2017 through 2018, IHN-CCO has supported various behavioral health flexible services with $4.9 million in spending. Partnerships with the NEMT provider, Oregon Cascade West Council of Governments (OCWCOG), in 2019 provide funding for HRS programs that support the evaluation and optimization of Dual Eligible member transportation, outreach to non-English speakers, transport to classes and trainings, and teachers for health improvement classes.

IHN-CCO supports HRS through direct funding of approved flexible services on specific member needs. IHN-CCO reimburses for the member’s provider prescribed service HRS that will improve the members health. HRS are based on effectiveness in conjunction with the member’s PCP and IHN-CCO’s Medical Management. Services have included, but are not
limited to, gym memberships, health and cooking classes, and home appliances. IHN-CCO is careful to limit HRS spending to proven methods directed by the member’s provider that will have a measurable improvement to the member’s health. Time frames are also established to ensure responsible allocation of resources. Each situation is routinely reviewed by Medical Management to ensure guidelines and appropriate use of HRS are followed according to policy and the member’s care plan.

**Future Strategies**

As HRS spending increases under CCO 2.0, IHN-CCO will utilize the various cost sustainability tools to evaluate the most effective uses of HRS. Valuable data will be gathered on member’s SDOH, cost of care, PCP, health condition, and services utilized. This data will be used to determine where HRS are deployed and how that affected the member’s health and utilization of higher cost services. As each HRS is analyzed for efficacy, IHN-CCO can invest in those HRS that demonstrate the most effectiveness.

IHN-CCO will add additional capacity within its VBPs to allow for spending in HRS through its provider network. The plan allows for Providers under a capitation arrangement to deploy its payment to those services that best serve the member. The provider is often in the best situation to determine what the member needs. IHN-CCO requires reporting on these services to justify capitation payments, and effectiveness as tied to quality and access metrics. The arrangement gives the provider wide latitude in determining the best services. The value of this flexibility has been shown with our existing capitation arrangements with Mental Health and NEMT providers and will be included in future VBPs to encourage effective HRS adoption.

**HRS Process**

- The first step in allocating HRS to the IHN-CCO population is to understand the health risks and SDoH of the membership. To do this IHN-CCO will utilize the tools at its disposal, including RHIC, Unite Us, Empower, PreManage, HIT, and the analysis functions within IHN-CCO. Risk stratification and HRAs of members will also assist in determining needs.
- Effective HRS will be cataloged and tracked for effectiveness and costs. This will be used to assist in developing best practices around HRS and when to deploy. HRS are much less straightforward than other health services. Managing HRS through authorizations and review is critical to maintain cost sustainability, since HRS can often be abused.
- Based on population needs and effective HRS, a budget for HRS can be established within rate guidelines. Spending is monitored by the Finance function. HRS spending is not necessarily limited to budgets as long as it correlates to lower medical and Rx costs. IHN-CCO recognizes that in many situations the cost benefit of HRS is not realized in the short term. Like any investment, IHN-CCO will allocate funding to HRS in a strategic manner to stay within the 3.4% cost growth requirement.
- As HRS is utilized, IHN-CCO will monitor its efficacy on the member. Our analysis will include overall cost of care, ED, Rx adherence, and Inpatient utilization, quality of care, and access to services to give a full picture of HRS effectiveness.
- Successful HRS interventions will be continued with both IHN-CCO programs and the member where appropriate. Where HRS is not resulting in improvements, it may be
discontinued. The most effective HRS can be promoted by IHN-CCO to our provider network or direct spending to these services. The least effective HRS may be either shifted to more effective alternatives or discontinued.

**Qualified Directed Payments to Providers**

**B1. Does IHN-CCO currently measure, track, or evaluate quality or value of Hospital services provided to its enrollees? If so, please describe.**

IHN-CCO currently measures, tracks, and evaluates quality of the hospital services provided to members. IHN-CCO monitors its hospital network through various sources of data, including the Delivery System Network/Exhibit G reports, to ensure that adequate effectiveness, quality, and access are supported for our membership. Several publicly available reports are used to evaluate our hospital network, such as OHA’s reporting, Oregon Hospital Guide, and Leapfrog. Internally IHN-CCO evaluates HEDIS (Healthcare Effectiveness Data and Information Set) data relating to our network. Readmissions and length of stay are evaluated by our Population health department to identify where care gaps might be tied to our Inpatient services. SHS, our largest hospital Provider, participates in Press Ganey surveys. These are shared with IHN-CCO to gain a detail service view into our integrated Hospitals.

**Quality Pool Operation and Reporting**

**C1. Does IHN-CCO plan to distribute Quality Pool earnings to any public health partners or non-clinical providers, such as SDOH-HE partners or other Health-Related Services Providers? If so, please specify the types of organizations and providers that will be considered.**

The IHN-CCO Quality Pool distribution policy supports distribution of funds across a myriad of providers, both clinical and non-clinical, that contribute to the triple aim of improving quality of care, reducing healthcare spending, and improving patient satisfaction. The overall goal is to promote value based care and shift away from volume based care. The policy is structured to encourage the adoption of SDOH and Health related services.

Any Provider in IHN-CCO’s region will be considered in the distribution of funds that are involved in supporting improvements to the triple aim. This includes hospital systems, dental providers, mental health providers, Patient-Centered Primary Care Homes (PCPCHs), specialists, and any other contributing provider in the traditional clinical setting. Funds are also distributed to community programs, pilots, county health providers, and any non-traditional programs or services that contributed, or may contribute in the future, to triple aim and CCO 2.0 goals.

The Delivery System Transformation Committee (DST) Request for Proposal will also be focused on SDOH organizations and require that those organizations directly address how SDoH for IHN-CCO members will be positively affected by the pilot.

**C2. How much of the Quality Pool earnings does IHN-CCO plan on distributing to clinical Providers, versus non-clinical providers? Please discuss the approach as it relates to SDOH-HE partners, public health partners, or other Health-Related Services Providers.**
IHN-CCO immediately sets 10% of the Quality Pool aside for non-traditional pilots and programs. Next, funds are distributed to clinical and non-clinical providers participating in a VBP. This provides an additional incentive for providers to participate in a VBP arrangement that is in alignment with CCO 2.0 goals. The remaining funds are then distributed to any participating provider that contributed to achieving Quality Metrics.

C3. How much of the Quality Pool earnings does IHN-CCO plan on investing outside its own organization? On what would IHN-CCO make such investments?

IHN-CCO distributes Quality Pool funds on an equitable basis to any provider or partner that contributes to Quality. IHN-CCO would expect between 50-60% be distributed to affiliate or parent organizations. This is in line with utilization and medical cost distribution percentages to the parent health system. The investments outside the organization are to other participating providers with the goal that these providers continue to invest in their capabilities to improve value-based health. This could take the form of internal incentives, infrastructure investments, or pilot programs. Non-Traditional investments are evaluated based on their ability to provide an innovative and effective program that can transform into sustainable services.

C4. How will IHN-CCO decide and govern its spending of the Quality Pool earnings?

The Quality Pool policy is overseen by the Regional Planning Council (RPC) that describes and governs the spending of Quality Pool Earnings. The RPC is comprised of IHN-CCO executives, community partners, and CCO providers. Once the policy is approved for the plan year, IHN-CCO executes the distribution of funds based on the policy with IHN-CCO executive approval.

Investments in transformational activities and other healthcare concepts are overseen by the Delivery System Transformation Committee. This is a body of IHN-CCO leadership, community partners, and providers that evaluate non-traditional programs and pilots.

IHN-CCO will utilize cost and performance data to develop Quality Pool distribution strategies that align with CCO 2.0 goals.

C5. When will IHN-CCO invest its Quality Pool earnings, compared with when these earning are received?

IHN-CCO aims to distribute Quality Pool earnings to Providers on an VBP shortly after receiving them. This is usually within one to three months of receiving the funds. Distributions to Providers not on an VBP may take up to five months to calculate and distribute. Investments in transformational and other programs follow into the next year. This allows time to determine the funds available, collect applications, evaluate the programs, and implement contracts and monitor processes.
C6. Does IHN-CCO have sufficient cash resources to be able to manage a withhold of a portion of its Capitation Payments?

IHN-CCO has established adequate cash and investment reserves to shift from a bonus to withhold methodology. Operating budgets will be established with the withhold assumed in rates. This will set financial expectation for IHN-CCO operations. Additionally, IHN-CCO and its affiliated organization bases its operating budget on the assumption that Quality Pool earnings are not guaranteed. This forces the organization to establish sustainable operating budgets that will then utilize Quality Pool funds to invest in activities and infrastructure that advance triple aim goals.

**Transparency in Pharmacy Benefit Management Contracts**

D1. Please describe the PBM arrangements IHN-CCO will use for its CCO Members.

IHN-CCO contracts with a Pharmacy Benefit Manager (PBM) for the purposes of pharmacy benefit administration. This relationship provides access for IHN-CCO members to a pharmacy network, real-time claims processing at contracted pharmacies, encounter data submission, and electronic utilization management.

D2. Does IHN-CCO currently have a “no-spread” arrangement with its PBM? If not, please describe the steps IHN-CCO will take to ensure its contracts are compliant with these requirements and the intended timing of these changes. If changes cannot be made by January 1, 2020, please explain why and what interim steps IHN-CCO will take to increase PBM transparency in CY 2020. (In order for an extension in the timeline to be considered, IHN-CCO must show it is contractually obligated to use non-compliant PBM and shall provide OHA a copy of PBM agreement as justification along with a plan to ensure compliance with transparency requirements at the earliest date possible).

IHN-CCO’s PBM contract is not under a “no-spread” arrangement, and IHN-CCO is contracted under the existing PBM arrangement until 2022. IHN-CCO is willing to explore options with our PBM to achieve the best possible pricing. The current arrangement as evaluated by IHN and our third-party broker has achieved better savings than what might be considered a “no-spread” arrangement. Over 85+% of our prescription drugs pricing is known under our contract. In addition, through oversight of our PBM pricing we are able to achieve the same or better pricing of Rx than a fully transparent contract. IHN-CCO will engage with our broker to evaluate state transparency requirements in conjunction with our PBM contract. With that in mind, our goal will be to responsibly manage OHA dollars by negotiating a contract that achieves the best possible pricing arrangement with the PBM.
D3. Does IHN-CCO obtain 3rd party market checks or audits of its PBM arrangement to ensure competitive pricing? If not, does IHN-CCO have a plan to receive this analysis? If so, how often are these analyses performed, what is done with this third party data and what terms inside of your PBM contract allow this analysis to have power for the CCO to ensure its pharmacy contract remains competitive?

Yes, IHN-CCO obtains third party market checks and audits of its PBM arrangement to ensure competitive pricing. The PBM procurement process for the contract currently in place occurred in 2015. Essential to this process was assessment, and subsequent contracting, of generic drug pricing based on actual $/unit. This was assessed and verified as competitive on a generic product basis (using GPI). The values submitted and subsequently contractual established by IHN-CCO were verified as competitive in the context of wholesale costs to the pharmacies and relative to other commercial, managed care, and governmental $/unit pricing. This was performed by the consultancy group with a large national client base and pricing references. It is believed that the current $/unit pricing for IHN-CCO’s program contains very low $/unit pricing, relative to other programs.

Other pricing elements; brand AWP-X% discount, dispensing fee, specialty pricing was established in a similar manner, although variance (and opportunity for cost excess) is much less in these categories. Key to successful pricing is an additional evaluation, classification of drugs. Each month, all claims for the program are run against established data warehouse queries to assure accurate classification and adherence to pricing terms and schedules.

Pricing is assessed quarterly to assure competitiveness. Generic unit pricing is often improved on 75 or more generic drugs every quarter. This assures constant improvement of established generic drugs (particularly high-volume ones) and prompt low cost pricing of new generic drugs.

In terms of formulary rebates, specific $/Rx payment rates are established as minimums for each class of dispensing; retail, retail 90, mail service, and specialty. Similar to drug pricing, demanding 100% pass through does not assure a strong or equitable deal for the plan sponsors. Funds received from manufacturers (by the PBM) can easily be classified as something other than rebates and retained by the PBM. Requirements for 100% disclosure can easily be disregarded by establishing global contracts (with manufacturers) to provide funds which are not attributable to any specific client. Utilizing a $/Rx negotiated minimum, the yield on rebates can be maximized (without impairing a high value formulary). For 2019, formulary rebate yields were increased significantly vis this process of contractual definition and negotiation.

This process avoids ambiguous pricing of traditional PBM contracts and establishes low, verifiable costs, by drug, that is lacking, even in transparent pass-through contracts.

D4. Does IHN-CCO plan to use the Oregon Prescription Drug Program to meet the PBM transparency requirements?

No, IHN-CCO does not plan to use the Oregon Prescription Drug Program to meet the PBM transparency requirements. As described above, the generic unit prices established via the fixed unit cost contracting process has established low, verifiable values. For brand drugs, it is not
difficult to verify adherence to a discount from AWP and assure it is competitive. It is important to focus on the areas where potential cost excess is large. By a wide margin, generic unit pricing has the most potential for cost excess. Establishing a fixed unit price for generic drugs, and verifying adherence to the pricing schedule every month, creates the ultimate in transparency. The health plan, the member, and providers know exactly what the cost of medication will be before it is selected or dispensed. In addition, adherence can be verified on a line-item basis on a regular basis.

**Alignment Preferred Drug Lists (PDLs) and Prior Authorization Criteria**

E1. Does IHN-CCO currently publish its PDL? If not, please describe the steps IHN-CCO will take to ensure its PDL is publicly accessible concurrent or in advance of the Year 1 Effective Date for prescribers, patients, dispensing pharmacies, and OHA.

IHN-CCO publishes all formulary documents, including PDLs and prior authorization criteria on our member and provider websites. Our formulary and utilization management criteria are available through PDF as well as a searchable document. Member and providers can access these documents on our website, in person or by mail. Formulary documents are available in a machine-readable format as well.

E2. Does IHN-CCO currently publish its pharmacy coverage and Prior Authorization criteria concurrently with or in advance of changes made? If not, please describe the steps IHN-CCO will take to ensure its pharmacy coverage and PA criteria are both publicly accessible for prescribers, patients, dispensing pharmacies, and OHA and updated in a timely manner.

IHN-CCO posts all formulary documents, including prior authorization criteria on our member and provider website and provides advance notice of negative formulary or network changes and concurrent notice for other changes. IHN-CCO’s pharmacy network includes all pharmacies who have an Oregon Medicaid ID. A list of these pharmacies can be found on our website. Member notifications will occur 60 days in advance if a negative formulary or network change occurs. Other changes are made concurrently with changes.

E3. To what extent is IHN-CCO’s PDL aligned with OHA’s fee-for-service PDL? Please explain whether and how supplemental rebates or other financial incentives drive differences in IHN-CCO’s PDL as compared to the fee-for-services PDL.

After a gap analysis IHN-CCO identified that we are heavily aligned with OHA’s fee-for-service PDL. IHN-CCO utilizes our ability to be flexible in covering a variety of different medications due to: population diversity, covering our providers first line response in treatment, and to ensure our patient care needs are met.

E4. Does IHN-CCO plan to fully align its PDL with the fee-for-service PDL? If not, please describe exceptions.

IHN-CCO does not have intend to fully align with fee-for-service PDL. IHN-CCO has been in collaboration with other CCO’s and has been a part of the strategic conversation around
alignment with fee-for-service. As the conversation progresses, IHN-CCO intends to be in those conversations to outline and create a strategic plan for continuity of care.

**Financial Reporting Tools and Requirements**

F1. Does IHN-CCO or any Affiliate of IHN-CCO currently report on NAIC health insurance forms? If so, please describe the reporting company or companies and its relationship with Applicant.

IHN-CCO’s affiliate, Samaritan Health Plans (SHP), currently files reports according to NAIC standards. Samaritan Health Plans is wholly owned by Samaritan Health Services and provides Medicare Advantage, Commercial Large Group, Association, and Small Group health insurance plans in the Oregon market.

IHN-CCO and SHP share the administrative staff that support the creation of NAIC reports and are fully trained in their preparation. The staff is experienced in SAP concepts. Trainings through classes and materials are maintained each year to stay current on SAP and NAIC reporting practices. IHN-CCO will utilize the audit partner KPMG to review and validate GAAP to Statutory entries and NAIC presentations.

F2. Does IHN-CCO currently participate and file financial statements with the NAIC?

IHP, the company in which IHN-CCO resides, does not currently complete NAIC based financial statements. IHN-CCO does not expect any circumstances that would prevent reporting under NAIC guidelines.

F3. See Attachment 12: RFA4690-IHNCCO-Att12-UCAA Supplemental Financial Analysis and Pro Forma Workbook for the RBC calculation has been submitted utilizing 2018 investments for the purposes of this RFA.

F4. Does IHN-CCO currently have experience reporting in SAP either directly or through any Affiliate of Applicant?

IHN-CCO and SHP share the administrative staff that support the creation of NAIC reports and are fully trained in their preparation. The staff is experienced in SAP concepts. Trainings through classes and materials are maintained each year to stay current on SAP and NAIC reporting practices. IHN-CCO will utilize the audit partner KPMG to review and validate GAAP to Statutory entries and NAIC presentations.

F5. Does IHN-CCO seek an exemption from SAP and NAIC reporting for 2020? If yes, please explain in detail (a) the financial hardship related to converting to SAP for the filing, and (b) IHN-CCO’s plan to be ready to use SAP in 2021.

IHN-CCO will not seek an exemption from reporting under SAP and NAIC in 2020. The plan is fully prepared to file NAIC reports as required.
F6. Financial Reporting Tools and Requirements Documentation

- Attached as a Separate PDF: RFA4690-IHNCCO-Att12-NAIC Biographical Affidavits
- Attached as Separate Excel File: RFA4690-IHNCCO-Att12-Three years of Audited Financial Reports

Accountability to Oregon’s Sustainable Growth Targets

G1. What strategies will IHN-CCO employ to achieve a sustainable expenditure growth year over year?

IHN-CCO will employ a variety of strategies to maintain the sustainable cost of growth to 3.4% or lower. The Plan will utilize the tools listed earlier in conjunction with analysis, committee oversight, and consulting expertise to hit cost targets. Through experience, IHN-CCO understands that it takes a combination of functions and providers working together to contain costs. The strategies below are the formal portions of containing costs. Additionally, collaboration and process changes will bring added cost efficiencies.

IHN-CCO has implemented a Finance Council and Finance Committee to oversee the financial performance and operations of the plan. The Finance Council consists of senior level financial management including the SHS Chief Financial Officer, Chief Executive Office, Chief Operations Officer, SHS Controller, and Director of Finance. The Finance Council reviews the monthly financial results of the plan to develop strategies and make decisions to improve the plan’s performance. These decisions are passed to the Finance Committee. The Finance Committee of IHN-CCO oversees the dissemination of financial performance information and guides the actions of the organization. All Directors and Managers are part of the committee so that the management of IHN-CCO has a full understanding of the financial situation to inform them in their decision making. The committee also addresses financial outliers or budget variances. For example, in 2018 NEMT costs were increasing significantly. The committee formed a workgroup to analyze all the drivers of NEMT costs, down to the member, location, provider, and services utilized. This led to the partnership with OCWC with OCWOG to develop a program that manages the transport costs of the highest utilizing members. Through the committee financial results are presented to all staff meetings at a high level. This enables IHN-CCO employees to understand how their actions are directly impacting the cost sustainability of the plan.

IHN-CCO uses various methods for preventing and detecting member, provider and subcontractor fraud, waste, and abuse in the administration and delivery of services. Key areas that help address sustainable expenditure growth year over year include: data analysis of service patterns, data matching, trending and statistical analysis, use of claims editing systems and analysis to screen claims, and routine retrospective claims validation. In addition, when appropriate, IHN-CCO utilizes outside assistance in forensic review of suspect claims. Whenever Fraud, Waste, and Abuse (FWA) activities are detected, IHN-CCO investigates, recovers any associated payments and implements systemic procedures to detect and prevent future instances.
of the inappropriate billing. This is further supported by the investigations done by IHN-CCO’s Compliance department. The Compliance team field reports from multiple internal and external sources. The responsibility of each investigation is to identify whether FWA is occurring and prevent future occurrences. While protecting confidentiality, the results of the investigations are shared with the Claims Department to recover any inappropriate payments and/or disenroll the provider.

The Quarterly Business Review process tracks key outcome and process measures on a quarterly basis. Many of these measures are tied to financial performance, such as MLR, Admin ratio, and RBC. When measures are above acceptable targets, or in the ‘red’, Director level management is responsible for identifying the drivers and addressing them with actionable operational changes.

IHN-CCO’s various consulting partners play a key role in maintaining cost targets. We recognize that an outside perspective is valuable to identify cost drivers that might otherwise go unseen.

- USI provides valuable insight and analysis into the large claim drivers. USI has an internal suite of analytical tools that assist IHN-CCO in analyzing areas of risk. These are invaluable in understanding large claims drivers. USI, with their expertise in understanding stop loss level claims, provides insight and recommendations to reduce the severity and risk of future high cost claims. They have been instrumental in the past to reduce high cost drivers such as neonatal providers. USI identified a provider of neonatal services that was well outside expected billed costs. By directing members to other providers IHN-CCO was able to lower costs immediately, and then re-contract with the provider to maintain a broad network at acceptable reimbursement levels. USI’s Rx team provides IHN-CCO with Rx management strategies to achieve savings in the short and long term. They utilize analysts and clinical pharmacists using a robust Rx dataset to find savings opportunities in formulary design and operational practices. Related to Rx costs, USI evaluates IHN-CCO’s Pharmacy Benefit Manager (PBM) contract and assists with negotiations so that IHN-CCO can realize industry expected PBM costs.

- Oliver Wyman, IHN-CCO’s actuary firm, provides ad hoc analysis of IHN-CCO claims costs and year end reserve estimates. The actuaries at Oliver Wyman have access to several actuarial analytical tools to provide insightful analysis using IHN-CCO’s claims data. As an example, in past analysis they have stratified members by cost and risk growth to give us an understanding of which age and gender groupings were increasing the most year over year. This gave us an understanding of acute versus chronic member costs and their financial implications. This analysis is invaluable to making strategic financial decisions affecting IHN-CCO.

- Optum’s Rx team provides quarterly analysis of top medication spends by brand, generic, and specialty. These are compared to industry benchmarks to give IHN-CCO the ability to target key areas of Rx cost. Their analysts are experts in pharmacy cost drivers nationwide. These insights are applied to IHN-CCO’s Rx strategies to contain Rx costs to sustainable levels. The analysis provides us with the top generic, brand, and specialty drug utilization. This is used to develop quality, cost savings, and adherence strategies.
IHN-CCO’s Finance and Reimbursement departments are focused on reporting, analyzing, and providing direction on avenues to achieve sustainable cost targets. The teams have dedicated financial analysts that review budget variances, provider reimbursements, drivers of cost increases, provider cost outliers, large claim and reinsurance level costs and diagnosis, rate/volume analysis, and multiple ad hoc analysis. These departments play a critical role in supporting IHN-CCO’s overall financial cost growth strategy. Functions throughout IHN-CCO work closely with the Finance department to provide insights into the cost drivers of their respective areas. The department also utilizes rate assumptions developed by OHA actuarial to create financial budgets, which are then approved by the IHN-CCO Board of Directors and implemented in our financial system.

Through its rate development process IHN-CCO creates expected service cost growth and utilization growth targets. These are then shared with the Provider Network and Strategy Department to set acceptable contract cost increases at the service category level. By working within these targets, the Provider Network and Strategy Department is able to give providers the increases they require to maintain their operation while staying within IHN-CCO’s budget.

G2. How will the CCO allocate and monitor expenditures across all categories of services?

IHN-CCO allocates and monitors expenditures across all categories of service strategically with a goal to support high-value low-costs services and steer costs away from preventable high-cost services. Specific service category rates of growth targets are established each year based on rate development, actuarial trends, and budget targets. These targets factor in high-cost areas that IHN-CCO is striving to reduce, such as inpatient, and areas we want to grow, such as PCP utilization. The plan also evaluates the funding requirements of our provider network with an eye to parity, access, and quality. For example, Mental Health rates were analyzed to ensure parity with other services. Where service pockets are deemed to need additional resources, these are built into the budget and allocated appropriately.

G3. What strategies will IHN-CCO utilize related to Value-Based Payment arrangements to achieve a sustainable expenditure growth?

Value-Based Payments (VBP) will play a central role in containing IHN-CCO’s expenditure growth and IHN-CCO utilizes many strategies to achieve sustainability. Capitation VBPs are already in place in 2019 with Medical, Mental Health, Dental, NEMT, and Professional providers. These capitation VBPs incentivize these providers to manage the full cost of the member and take the fiscal impacts if the cost is not managed appropriately. These VBPs do not work without full transparency of member costs and services. IHN-CCO requires full claims data from these providers to understand the services provided to members. The encounters are tracked and compared to expected targets to ensure adequate services are provided. IHN-CCO provides monthly and quarterly reporting back to these entities to gain a mutual understanding of the costs incurred in comparison to the capitation payments. In this way both IHN-CCO and the provider understand the full financial risk born by each entity.

IHN-CCO is working to implement risk sharing in VBPs. IHN-CCO’s strategy is to bring the providers closer to the financial risk of the members. Should the provider achieve greater cost
savings than anticipated, IHN-CCO will share a portion of the additional margin. Conversely, cost growth will also be borne by both entities.

Risk stratification case management payments are an additional method of maintaining cost sustainability. Supplementing the VBP is the expectation that the PCP office will invest resources in managing both the condition and the costs of their assigned member. IHN-CCO supports with the case management payment. The payments in several contracts are risk stratified with the understanding that higher risk members require additional resources to manage appropriately. IHN-CCO sees this as an upfront investment in the member’s long-term health as well as cost containment.

G4. What strategies will IHN-CCO utilize to contain costs, while ensuring quality care is provided to Members?

The strategies IHN-CCO utilizes to contain costs while ensuring quality care is provided to members includes the provider network, VBP, and PCPCH investment. The provider network function evaluates our network for both cost, quality, and access adequacy. Analysis demonstrates where there are cost outliers as well as quality gaps in our network. The team then targets these outliers to either re-contract with specific providers, or provider re-direction of members to better aligned providers in our network. Out of network costs are also analyzed to gain an understanding of where there could be gaps in coverage. Since Out of network providers are not tied to IHN-CCO’s cost and quality goals, we strive to re-direct members in network to achieve cost targets while supporting our quality goals.

VBPs are instrumental in aligning providers to cost and quality targets. All VBPs contracted with IHN-CCO providers include a quality measure component. Through the quality measures we can ensure that capitated providers are not denying needed services or providing inadequate care.

IHN-CCO meets quarterly with its VBP and capitated Providers to review both cost and quality performance. These meetings are an open forum to discuss access issues, quality challenges, and cost drivers. These have proven fruitful in uncovering regional problems. For example, mental health expenditures vary by county. Each county provider highlights the reasons for their cost basis. IHN-CCO independently explores these variances further, to evaluate the network and potential solutions. Furthermore, the BQHC (Behavioral Health Quality Committee) can bring the combined county issues together to establish best practices and behavioral health strategies.

IHN-CCO’s PCPCH investment strategy is an additional avenue of ensuring high quality in our PCP network. The PCPCH model supports a full understanding of the member in all aspects of their health. IHN-CCO is committed to funding PCPCH as the best path to long term access to quality health care that reduces the overall cost of care.

G5. Has IHN-CCO achieved per-Member expenditure growth target of 3.4% per year in the past? Please specify time periods.

Per-Member expenditure growth target of 3.4% per year in the past information:
From 2014 to 2015 IHN-CCO’s rate of growth was -1.5%. IHN-CCO’s investment in transformational activities and VBPs supported a manageable rate of growth over the past three years. Through additional VBPs, investments, and financial discipline, IHN-CCO expects to improve from prior year results.

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate of Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 to 2015</td>
<td>-1.5%</td>
</tr>
<tr>
<td>2015 to 2016</td>
<td>13.1%</td>
</tr>
<tr>
<td>2016 to 2017</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

Potential Establishment of Program-wide Reinsurance Program in Future Years

H1. What type of reinsurance policy does IHN-CCO plan on holding for 2020? Please include the specifics. (e.g. attachment points, coinsurance, etc.)

IHN-CCO enters into reinsurance contracts each year and plans on holding the same contract for 2020 as 2019. In 2019 the attachment point is $300,000, and it is expected this would remain the same in 2020. The Policies are at 100% coinsurance with a maximum per claim of $2,000,000. Services covered under the policy include hospital inpatient and hospital outpatient, physician services, long term acute care facility, skilled nursing facilities, rehabilitation facilities, home health care, pharmaceuticals, durable medical equipment, and transportation.

Each year IHN-CCO goes to market to negotiate reinsurance rates to get the best rates available. This is done through a broker that specializes in reinsurance policies and the market pricing.

H2. What is the IHN-CCO’s reasoning for selecting the reinsurance policy described above?

Historically the reinsurance policies IHN-CCO have entered in to have be more than adequate to protect the plan from large claim experience. The strategy has been to move large claim risk to the reinsurer rather than share or mitigate any large claim risk. This has provided protection from any multiple large claim situation that could jeopardize the plan’s reserves. IHN-CCO being the largest health plan managed under the parent company, SHS, carries higher risks than the other plans for multiple large claims, and could put SHS and affiliates in financial risk if not sufficiently reinsured.

H3. What aspects of its reinsurance policy are the most important to the Applicant?

The most important aspect of the reinsurance policy for IHN-CCO is seeking financial protection by moving large claim risk outside the plan. Selecting an appropriate attachment point in conjunction with an acceptable premium is critical to maintain financial solvency. The plan also negotiates reinsurance rates with all plans managed under SHS affiliates. Including IHN-CCO with the other plans allows IHN-CCO to gain administrative economies of scale and negotiate for the best rates possible.

H4. Does existing or previous reinsurance contract allow specific conditions or patients to be excluded, exempted, or lasered out from being covered?
Yes, existing or previous reinsurance contract allows for specific conditions or patients to be excluded, exempted, or lasered out from being covered. The reinsurance policies provide for lasers of high cost chronic members. This is often necessary to secure an acceptable level premium for the general population from the reinsurer given the continuity of many laser level IHN-CCO members.

H5. Is IHN-CCO able to leave or modify existing reinsurance arrangements at any time or is IHN-CCO committed to existing arrangements for a set period of time? If so, for how long is IHN-CCO committed to existing arrangements? Are there early cancelation penalties?

IHN-CCO enters into one-year contracts annually and is contractually obligated to the arrangement for a minimum premium of $250,000. Currently, IHN-CCO is contracted with its existing reinsurer until the end of 2019.

CCO Solvency Standards and OHA Tools to Regulate and Mitigate Insolvency Risk

I1. Please describe IHN-CCO’s past sources of capital.

Intercommunity Health Plans, Inc. was incorporated in 1993 by SHS to administer benefits to certain members of the Oregon Health Plan. SHS founded IHP financially and has acted as IHN-CCO’s primary source of any required capital since its inception.

I2. Please describe IHN-CCO’s possible future sources of capital.

SHS will continue to act as IHN-CCO’s source of capital in future years. SHS maintains the ability to issue bonds and access to capital markets. Under existing bond covenants, SHS maintains required cash, capital, liquidity, and credit ratings to ensure it continues to act as a stable investment and has future access to capital markets. SHS has a bond rating of BBB+. Should IHN-CCO require capital infusions in the future, SHS would provide IHN-CCO with an intercompany Surplus Note.

I3. What strategies will IHN-CCO use to ensure solvency thresholds are maintained?

Maintaining financial solvency requires a blend of strategies. Through careful review of financial reports, forecasting, operational activities, and oversight IHN-CCO will ensure solvency thresholds are maintained. Some of those strategies include:

**RBC reporting**
- IHN-CCO will follow NAIC reporting standards to report capital requirements under RBC guidelines. The RBC format is robust in quantifying the investment, premium, and business risk IHN-CCO faces. Through forecasting and evaluation of investments, IHN-CCO will be able to monitor RBC levels regularly and report this to the appropriate levels of management.
Committee oversight
- IHN-CCO has formed multiple internal committees tasked with governance of financial aspects. The Finance Council meets monthly to review financial reports and make key decisions impacting finances. The Finance Committee is an extension of the Finance Council that operationalizes decisions made by the Council. In addition, the Finance Committee drills in to root causes of financial trends and then implements action plans to address. The Enterprise Risk Management (ERM) committee reviews all risks facing the plan, including financial risks. ERM monitors risk levels on a regular basis. When risks exceed established thresholds, the committee is tasked with mitigating or eliminated the risk.

Actuarial review
- IHN-CCO employs the actuary firm Oliver Wyman to perform annual IBNR (incurred but not reported) estimates and a financial review of the plan. The firm provides annual claims and pharmacy trends as an insight into past and future year’s potential claims risks. Oliver Wyman also performs ad hoc analysis into IHN-CCO around membership risk and claims trending.

Board review
- Financials are presented at each board meeting. In addition, operational activities, strategies, and plan risks are discussed. The Board provide strategy and guidance to maintain IHN-CCO’s financial sustainability.

Reinsurance
- IHN-CCO maintains reinsurance to protect the plan from large claims. IHN-CCO negotiates rates and attachment points annually to maximize the financial coverage of IHN-CCO.

Cash and investment management
- IHN-CCO adheres to a board approved investment strategy that minimizes investment risk while still generating an acceptable rate of return.

Cost sustainability
- IHN-CCO develops annual budgets for medical and administrative expenses. These establish expected ranges of financial performance. Budget variances are analyzed for root causes and potential risks to the plan. The budgets incorporate CCO 2.0 strategies as they impact medical and administrative costs.

I4. Does IHN-CCO have a parent company, Affiliate, or capital partner from which IHN-CCO may expect additional capital in the event IHN-CCO becomes undercapitalized? If so, please describe.

Yes IHN-CCO’s parent company, SHS, will support IHN-CCO with additional capital in the event IHN-CCO becomes undercapitalized. SHS will continue to act as IHN-CCO’s source of capital in future years. SHS maintains the ability to issue bonds and access to capital markets. Under existing bond covenants, SHS maintains required cash, capital, liquidity, and credit ratings.
to ensure it continues to act as a stable investment and has future access to capital markets. SHS has a bond rating of BBB+. Should IHN-CCO require capital infusions in the future, SHS would provide IHN-CCO with an intercompany Surplus Note.

**Encounter Data Validation Study**

J1. Capacity of IHN-CCO to perform regular Provider audits and claims review to ensure the timeliness, correctness, and accuracy of Encounter Data:

IHN-CCO currently performs audits of provider contracts and claims through both internal and external review. Internally the Claims Department performs random audits based on a random sampling of at least 2% of claims to ensure payments are properly adjudicated according to contract and benefit configurations. KPMG, the external audit firm, performs an audit of provider contracts and claims to validate proper adjudication of claims. The audit is based on a selection of claims and looks specifically for circumstances that might lead to potential errors. The external audit is overseen independently by the IHN-CCO Board of Directors through the Audit Committee.

The Encounter Data team performs ongoing reviews of Encounter Data. The team categorizes and analyzes rejects for root causes. These are then traced up-process to address the root cause of the Encounter Data, such as Provider credentialing, billing, claims processing, or data integrity. This process is valuable to ensure our provider network, claims processing, and other related functions are in compliance with OHA requirements.

J2. Does IHN-CCO currently perform any activities to validate Claims data at the chart level that the claims data accurately reflects the services provided? If yes, please describe those activities.

IHN-CCO performs Chart Review Encounter Data Validation (EDV) to support attestation to the accuracy, completeness and truthfulness of encounter data, as required by OHA and to be compliant with Medicaid Managed Care Regulations. EDV Chart Review compares reported encounter data against the clinical record for compliance with applicable coding, billing, and documentation requirements and then decides whether all services reported were documented in the records (detects over-reporting), were reported (detects under-reporting), and correctly coded (evaluates accuracy of reporting). Reviews are done on encounters each quarter, with a two quarter look back period. All persons performing EDV Chart Review have appropriate knowledge, experience, and expertise in health care. The reviewers use forms and spreadsheets to document, track, and report findings from the EDV Chart Review. EDV results are reported to management to determine appropriateness of any corrective action, additional review, provider education, or other actions that address documentation deficiencies or encounter data errors.
BIOGRAPHICAL AFFIDAVIT

To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

(Print or Type)

Full name, address and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names)____________________________

InterCommunity Network Coordinated Care Organization

2300 NW Walnut Blvd. Corvallis, OR 97330

541-768-4550

In connection with the above-named entity, I herewith make representations and supply information about myself as hereinafter set forth. (Attach addendum or separate sheet if space hereon is insufficient to answer any question fully.) IF ANSWER IS "NO" OR "NONE," SO STATE.

1. Affiant’s Full Name (Initials Not Acceptable): First: Kelley  Middle: Carter  Last: Kaiser

2. a. Are you a citizen of the United States?
   Yes [x]  No [ ]
   b. Are you a citizen of any other country?
   Yes [ ]  No [x]
   If yes, what country?

3. Affiant’s occupation or profession: Chief Executive Officer

4. Affiant’s business address: 2300 NW Walnut Blvd. Corvallis OR 97330

Business telephone: 541-768-5341  Business Email: kekaiser@samhealth.org

5. Education and training:

College/University  City/State  Dates Attended (MM/YY)  Degree Obtained
Oregon State University  Corvallis OR  1993  BS Health Care Administration

Graduate Studies  College/University  City/State  Dates Attended (MM/YY)  Degree Obtained
MPH in Health Policy & Management  OSU  Corvallis OR  1999

Other Training: Name  City/State  Dates Attended (MM/YY)  Degree/Certification Obtained

Note: If affiant attended a foreign school, please provide full address and telephone number of the college/university. If applicable, provide the foreign student identification number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.
6. List of memberships in professional societies and associations:

<table>
<thead>
<tr>
<th>Name of Society/Association</th>
<th>Contact Name</th>
<th>Address of Society/Association</th>
<th>Telephone Number of Society/Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>American College of Healthcare Executives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Plan Alliance</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Present or proposed position with the Applicant Company: Chief Executive Officer

8. List complete employment record for the past twenty (20) years, whether compensated or otherwise (up to and including present jobs, positions, partnerships, owner of an entity, administrator, manager, operator, directorates or officerships). Please list the most recent first. Attach additional pages if the space provided is insufficient. It is only necessary to provide telephone numbers and supervisory information for the past ten (10) years. Additional information may be required during the third-party verification process for international employers.

See Attached

Beginning/Ending Dates (MM/YY): ___ ___ ___ ___ Employer's Name: ______________________ __________
Address: ______________________ __________ City: ______________________ __________ State/Province: ______________________ __________
Country: ______________________ __________ Postal Code: ______________________ __________ Phone: ______________________ __________
Type of Business: ______________________ __________ Supervisor/Contact: ______________________ __________

Beginning/Ending Dates (MM/YY): ___ ___ ___ ___ Employer's Name: ______________________ __________
Address: ______________________ __________ City: ______________________ __________ State/Province: ______________________ __________
Country: ______________________ __________ Postal Code: ______________________ __________ Phone: ______________________ __________
Type of Business: ______________________ __________ Supervisor/Contact: ______________________ __________

Beginning/Ending Dates (MM/YY): ___ ___ ___ ___ Employer's Name: ______________________ __________
Address: ______________________ __________ City: ______________________ __________ State/Province: ______________________ __________
Country: ______________________ __________ Postal Code: ______________________ __________ Phone: ______________________ __________
Type of Business: ______________________ __________ Supervisor/Contact: ______________________ __________

Beginning/Ending Dates (MM/YY): ___ ___ ___ ___ Employer's Name: ______________________ __________
Address: ______________________ __________ City: ______________________ __________ State/Province: ______________________ __________
Country: ______________________ __________ Postal Code: ______________________ __________ Phone: ______________________ __________
Type of Business: ______________________ __________ Supervisor/Contact: ______________________ __________

Beginning/Ending Dates (MM/YY): ___ ___ ___ ___ Employer's Name: ______________________ __________
Address: ______________________ __________ City: ______________________ __________ State/Province: ______________________ __________
Country: ______________________ __________ Postal Code: ______________________ __________ Phone: ______________________ __________
Type of Business: ______________________ __________ Supervisor/Contact: ______________________ __________

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Revised 03/26/18
Attachment 12: NAIC Biographical Affidavits
9. a. Have you ever been in a position which required a fidelity bond?
   
   Yes [ ] No [x]
   
   If any claims were made on the bond, give details:

b. Have you ever been denied an individual or position schedule fidelity bond, or had a bond canceled or revoked?
   
   Yes [ ] No [x]
   
   If yes, give details:

10. List any professional, occupational and vocational licenses (including licenses to sell securities) issued by any public or governmental licensing agency or regulatory authority or licensing authority that you presently hold or have held in the past. For any non-insurance regulatory issuer, identify and provide the name, address and telephone number of the licensing authority or regulatory body having jurisdiction over the license(s) issued. If your professional license number is your Social Security Number (SSN) or embeds your SSN or any sequence of more than five numbers that are reasonably identifiable as your SSN, then write SSN for that portion of the professional license number that is represented by your SSN. (For example, “SSN”, “12-SSN-345” or “1234-SSN” (last 6 digits)). Attach additional pages if the space provided is insufficient.

   Organization/Issuer of License: ____________________________
   Address: ____________________________________________
   City: ___________ State/Province: ___________ Country: ___________ Postal Code: ___________
   License Type: ___________ License #: ___________ Date Issued (MM/YY): ___________
   Date Expired (MM/YY): ___________ Reason for Termination: ___________
   Non-Insurance Regulatory Phone Number (if known): ___________

   Organization/Issuer of License: ____________________________
   Address: ____________________________________________
   City: ___________ State/Province: ___________ Country: ___________ Postal Code: ___________
   License Type: ___________ License #: ___________ Date Issued (MM/YY): ___________
   Date Expired (MM/YY): ___________ Reason for Termination: ___________
   Non-Insurance Regulatory Phone Number (if known): ___________

11. In responding to the following, if the record has been sealed or expunged, and the affiant has personally verified that the record was sealed or expunged, an affiant may respond “no” to the question. Have you ever:

   a. Been refused an occupational, professional, or vocational license or permit by any regulatory authority, or any public administrative, or governmental licensing agency?
      
      Yes [ ] No [x]

   b. Had any occupational, professional, or vocational license or permit you held or have held, been subject to any judicial, administrative, regulatory, or disciplinary action?

   Yes [ ] No [x]
Applicant Company Name: ____________________________

NAIC No. ____________________________

FEIN: ____________________________

Yes [ ] No [X]
c. Been placed on probation or had a fine levied against you or your occupational, professional, or vocational license or permit in any judicial, administrative, regulatory, or disciplinary action?

Yes [ ] No [X]
d. Been charged with, or indicted for, any criminal offense(s) other than civil traffic offenses?

Yes [ ] No [X]
e. Pled guilty, or nolo contendere, or been convicted of, any criminal offense(s) other than civil traffic offenses?

Yes [ ] No [X]
f. Had adjudication of guilt withheld, had a sentence imposed or suspended, had pronouncement of a sentence suspended, or been pardoned, fined, or placed on probation, for any criminal offense(s) other than civil traffic offenses?

Yes [ ] No [X]
g. Been subject to a cease and desist letter or order, or enjoined, either temporarily or permanently, in any judicial, administrative, regulatory, or disciplinary action, from violating any federal, state law or law of another country regulating the business of insurance, securities or banking, or from carrying out any particular practice or practices in the course of the business of insurance, securities or banking?

Yes [ ] No [X]
h. Been, within the last ten (10) years, a party to any civil action involving dishonesty, breach of trust, or a financial dispute?

Yes [ ] No [X]
i. Had a finding made by the Comptroller of any state or the Federal Government that you have violated any provisions of small loan laws, banking or trust company laws, or credit union laws, or that you have violated any rule or regulation lawfully made by the Comptroller of any state or the Federal Government?

Yes [ ] No [X]
j. Had a lien or foreclosure action filed against you or any entity while you were associated with that entity?

Yes [ ] No [X]

If the response to any question above is yes, please provide details including dates, locations, disposition, etc. Attach a copy of the complaint and filed adjudication or settlement as appropriate.

12. List any entity subject to regulation by an insurance regulatory authority that you control directly or indirectly. The term "control" (including the terms "controlling," "controlled by" and "under common control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract other than a commercial contract for goods or non-management services, or otherwise, unless the power is the result of an official position with or corporate office held by the person. Control shall be presumed to exist if any person, directly or indirectly, owns, controls, holds with the...
power to vote, or holds proxies representing, ten percent (10%) or more of the voting securities of any other person.

If any of the stock is pledged or hypothecated in any way, give details.

13. Do [Will] you or members of your immediate family individually or cumulatively subscribe to or own, beneficially or of record, 10% or more of the outstanding shares of stock of any entity subject to regulation by an insurance regulatory authority, or its affiliates? An “affiliate” of, or person “affiliated” with, a specific person, is a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the person specified.

Yes [ ] No [x]

If yes, please identify the company or companies in which the cumulative stock holdings represent 10% or more of the outstanding voting securities.

If any of the shares of stock are pledged or hypothecated in any way, give details.

14. Have you ever been adjudged a bankrupt?

Yes [ ] No [x]

If yes, provide details: ________________________________

15. To your knowledge has any company or entity for which you were an officer or director, trustee, investment committee member, key management employee or controlling stockholder, had any of the following events occur while you served in such capacity?

a. Been refused a permit, license, or certificate of authority by any regulatory authority, or governmental licensing agency?

Yes [ ] No [x]

b. Had its permit, license, or certificate of authority suspended, revoked, canceled, non-renewed, or subjected to any judicial, administrative, regulatory, or disciplinary action (including rehabilitation, liquidation, receivership, conservatorship, federal bankruptcy proceeding, state insolvency, supervision or any other similar proceeding)?

Yes [ ] No [x]

c. Been placed on probation or had a fine levied against it or against its permit, license, or certificate of authority in any civil, criminal, administrative, regulatory, or disciplinary action?

Yes [ ] No [x]
Applicant Company Name: ____________________________

If the answer to any of the above is yes, please indicate and give details. When responding to questions (b) and (c), affiant should also include any events within twelve (12) months after his or her departure from the entity. _____

Note: If an affiant has any doubt about the accuracy of an answer, the question should be answered in the positive and an explanation provided.

Dated and signed this 8th day of March, 2019 at 8:45AM. I hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

X I hereby acknowledge that I may be contacted to provide additional information regarding international searches.

(Signature of Affiant)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 8th day of March, 2019 by Kelley Kaiser, and:

who is personally known to me, or

who produced the following identification: ________________________________

[SEAL]
To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

**Full name, address, and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names).**

InterCommunity Health Network Coordinated Care Organization  
2300 NW Walnut Blvd. Corvallis OR 97330 541-768-4550

| 1. Affiant’s Full Name (Initials Not Acceptable): First: Kelley  Middle: Carter  Last: Kaiser  
| IF ANSWER IS “NONE,” SO STATE. |
| 2. Have you ever used any other name, including first, middle or last name, nickname, maiden name or aliases?  
| If yes, give the reason if any, if none indicate such, and provide the full name(s) and date(s) used.  
| **Beginning/Ending Date(s) Used (MM/YY)** | **Name(s)** | **Reason (If none, indicate such)** |
| Specify: First, Middle or Last Name  
| Maiden Name  
|  |

Note: Dates provided in response to this question may be approximate. Parties using this form understand that there could be an overlap of dates when transitioning from one name to another. If applicable, provide the foreign student Identification Number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.

3. Affiant’s Social Security Number:  

4. Government Identification Number if not a U.S. Citizen:  

5. Foreign Student ID# (if applicable):
Applicant Company Name: ____________________________  NAIC No. ____________________________

FEIN: ____________________________

6. ____________________________

7. Name of Affiant’s Spouse (if applicable): ____________________________

8. List your residences for the last ten (10) years starting with your current address, giving:

<table>
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<tr>
<th>Beginning/Ending Dates (MM/YY)</th>
<th>Address</th>
<th>City</th>
<th>State/Province</th>
<th>Country</th>
<th>Postal Code</th>
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</tbody>
</table>

Note: Dates provided in response to this question may be approximate, except for current address. Parties using this form understand that there could be an overlap of dates when transitioning from one address to another.

Dated and signed this ______ day of March, 2019 at 2300 NW Walnut. Hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

☑ I hereby acknowledge that I may be contacted to provide additional information regarding international searches.

__________________________
(Signature of Affiant)

State of: Oregon  County of: Benton

The foregoing instrument was acknowledged before me this ______ day of March, 2019 by Kelly Kaiser and:

☑ who is personally known to me, or

who produced the following identification: ____________________________

[SEAL]

__________________________
Notary Public

__________________________
Printed Notary Name

My Commission Expires February 10, 2020

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Attachment 12: NAIC Biographical Affidavits
Page 8 of 33

Revised 03/26/18  FORM 11
DISCLOSURE AND AUTHORIZATION CONCERNING BACKGROUND REPORTS
(All states except California, Minnesota and Oklahoma)

This Disclosure and Authorization is provided to you in connection with pending or future application(s) of InterCommunity Health Network CCO [company name] ("Company") for licensure or a permit to organize ("Application") with a department of insurance in one or more states within the United States. Company desires to procure a consumer or investigative consumer report (or both) ("Background Reports") regarding your background for review by a department of insurance in any state where Company pursues an Application during the term of your functioning as, or seeking to function as, an officer, member of the board of directors or other management representative ("Affiant") of Company or of any business entities affiliated with Company ("Term of Affiliation") for which a Background Report is required by a department of insurance reviewing any Application. Background Reports requested pursuant to your authorization below may contain information bearing on your character, general reputation, personal characteristics, mode of living and credit standing. The purpose of such Background Reports will be to evaluate the Application and your background as it pertains thereto. To the extent required by law, the Background Reports procured under this Disclosure and Authorization will be maintained as confidential.

You may obtain copies of any Background Reports about you from the consumer reporting agency ("CRA") that produces them. You may also request more information about the nature and scope of such reports by submitting a written request to Company. To obtain contact information regarding CRA or to submit a written request for more information, contact [company's designated person, position, or department, address and phone].

Attached for your information is a "Summary of Your Rights Under the Fair Credit Reporting Act."

AUTHORIZATION: I am currently an Affiant of Company as defined above. I have read and understand the above Disclosure and by my signature below, I consent to the release of Background Reports to a department of insurance in any state where Company files or intends to file an Application, and to the Company, for purposes of investigating and reviewing such Application and my status as an Affiant. I authorize all third parties who are asked to provide information concerning me to cooperate fully by providing the requested information to CRA retained by Company for purposes of the foregoing Background Reports, except records that have been erased or expunged in accordance with law.

I understand that I may revoke this Authorization at any time by delivering a written revocation to Company and that Company will, in that event, forward such revocation promptly to any CRA that either prepared or is preparing Background Reports under this Disclosure and Authorization. This Authorization shall remain in full force and effect until the earlier of (i) the expiration of the Term of Affiliation, (ii) written revocation as described above, or (iii) six (6) months following the date of my signature below.

A true copy of this Disclosure and Authorization shall be valid and have the same force and effect as the signed original.

KELLEY CARTER KAISER

(Signature)

(Please redact all personal information except signature and address)

State of: Oregon
County of: Benton

The foregoing instrument was acknowledged before me this 8 day of March, 2019 by KELLEY KAISER, who is personally known to me, or

who produced the following identification:

[SEAL]
Extensive and accomplished leader with experience in healthcare delivery, reform and transformation. Interested in continuing to drive the transformation of the healthcare delivery system through collaboration, patient centered care and strategic leadership. Proven track record in Healthplan operations with a focus on government, self funded and commercial plans. Well versed at supporting and navigating within an Integrated Delivery Network (IDN) while maintaining a focus on Population Health and meting the Triple Aim, managing cost, quality and access.

PROFESSIONAL EXPERIENCE

Samaritan Health Services
Corvallis, Oregon
April 2002 - Present

VICE-PRESIDENT CORPORATE SERVICES
RESPONSIBILITIES INCLUDE: RESPONSIBLE FOR VARIOUS OPERATIONAL ASPECTS OF THE INTEGRATED DELIVERY NETWORK, INCLUDING BUT NOT LIMITED TO THE OVERSIGHT OF ENTERPRISE WIDE CREDENTIALING, FACILITIES MANAGEMENT, CORPORATE PLANNING AND INVOLVEMENT WITH DATA GOVERNANCE AND HEALTH REFORM, SERVE AS THE CHIEF EXECUTIVE OFFICER FOR SAMARITAN HEALTH PLANS AND INTERCOMMUNITY HEALTH PLANS AS DESCRIBED BELOW.

Samaritan Health Plans
Corvallis, Oregon
January 2005 - Present

CHIEF EXECUTIVE OFFICER
RESPONSIBILITIES INCLUDE: STRATEGIC LEADER FOR A HOSPITAL OWNED PHYSICIAN DRIVEN INSURANCE PLAN FOCUSING ON MEDICARE ADVANTAGE AND COMMERCIAL PLANS. RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF THE STRATEGIC PLAN WHICH INCLUDES: THE RESEARCH AND DEVELOPMENT OF NEW GROWTH OPPORTUNITIES, DEVELOPMENT AND MONITORING OF QUALITY MEASURES AS THEY RELATE TO NCQA STANDARDS, AND THE IMPLEMENTATION OF FURTHER EXPANSION TO ALL LINES OF BUSINESS. ADDITIONAL RESPONSIBILITIES INCLUDE COORDINATION WITH THE OWNER INTEGRATED DELIVERY SYSTEM TO INCREASE THE EFFECTIVENESS OF THE SYSTEM OF CARE WITHIN OUR COMMUNITY.

InterCommunity Health Plans
Corvallis, Oregon
March 1999 - Present

CHIEF EXECUTIVE OFFICER
RESPONSIBILITIES INCLUDE: STRATEGIC LEADER FOR A HOSPITAL OWNED COMMUNITY/PHYSICIAN DRIVEN MANAGED MEDICAID PLAN. RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF THE STRATEGIC PLAN. INTERCOMMUNITY HEALTH PLANS IS COMMITTED TO IMPROVING THE HEALTH OF OUR COMMUNITIES WHILE LOWERING OR CONTAINING THE COST OF CARE. WE ACCOMPLISH THIS BY COORDINATING HEALTH INITIATIVES, SEEKING EFFICIENCIES THROUGH BLENDING OF SERVICES AND INFRASTRUCTURE AND ENGAGING ALL STAKEHOLDERS TO INCREASE QUALITY, RELIABILITY AND AVAILABILITY OF CARE WITH A STRONG FOCUS ON THE SOCIAL DETERMINANTS OF HEALTH.
InterCommunity Health Plans  
Corvallis, Oregon  
CHIEF OPERATING OFFICER  
May 1998 – March 1999

InterCommunity Health Network  
Corvallis, Oregon  
GOVERNMENT PROGRAMS MANAGER  
September 1995 - May 1998

Women's Care, PC  
Eugene, Oregon  
ASSISTANT ADMINISTRATOR  
June 1990 - September 1995

ASSISTED IN OVERSEEING THE DAILY OPERATIONS OF THIS FOURTEEN-PHYSICIAN THREE COST CENTER PRACTICE. RESPONSIBILITIES INCLUDE: ANALYSIS OF CPT CODES AND REIMBURSEMENT RATES, MAINTAINING MAL-PRACTICE AND GENERAL INSURANCE COVERAGE, AND SUPERVISION OF INTERNS. ASSISTED IN ALL ADMINISTRATIVE OPERATIONS OF THE CORPORATION INCLUDING, PAYROLL, EMPLOYEE BENEFIT PACKAGES, CORPORATE/PENSION PLAN RECORDS, AND GENERAL ACCOUNTING FUNCTIONS.

EDUCATION

Oregon State University  
Corvallis, Oregon  
June 1993  
BACHELORS OF SCIENCE IN HEALTH CARE ADMINISTRATION

Oregon State University  
Corvallis, Oregon  
June 1999  
MASTERS OF PUBLIC HEALTH IN HEALTH POLICY AND MANAGEMENT

COMMUNITY ACTIVITIES

OREGON STATE CREDIT UNION – BOARD MEMBER SINCE 2009
ROTARY CLUB – MEMBER OF THE CORVALLIS ROTARY CLUB MEMBER SINCE 2005
CORVALLIS CHAMBER OF COMMERCE – PAST BOARD CHAIR, MEMBER SINCE 2002 – MEMBER OF THE GOVERNMENT AFFAIRS COMMITTEE
2008 JUNIOR FIRST CITIZEN – CELEBRATE CORVALLIS
OREGON STATE UNIVERSITY COLLEGE OF PUBLIC HEALTH AND HUMAN SCIENCES – COMMUNITY ADVISORY COMMITTEE MEMBER.

PROFESSIONAL ORGANIZATIONS/ASSOCIATIONS

AMERICAN COLLEGE OF HEALTHCARE EXECUTIVES – ACTIVE MEMBER
HEALTH PLAN ALLIANCE – BOARD MEMBER AND INCOMING BOARD CHAIR
CHAIR, OHP CONTRACTORS COMMITTEE (2001 – 2002)  
VICE-CHAIR, OHP CONTRACTORS COMMITTEE (2000 – 2001)
BIOGRAPHICAL AFFIDAVIT

To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

(Print or Type)

Full name, address and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names).

In connection with the above-named entity, I herewith make representations and supply information about myself as hereinafter set forth. (Attach addendum or separate sheet if space hereon is insufficient to answer any question fully.) IF ANSWER IS “NO” OR “NONE,” SO STATE.

1. Affiant’s Full Name (Initials Not Acceptable): First: Kevin Middle: Daniel Last: Ewanchyna

2. a. Are you a citizen of the United States?
   Yes [ ] No [ ]
   
   b. Are you a citizen of any other country?
   Yes [ ] No [ ]
   If yes, what country? Canada

3. Affiant’s occupation or profession: Physician

4. Affiant’s business address: 2300 NW Walnut Blvd, Corvallis OR 97330
   Business telephone: 541-768-4889
   Business Email: kevanchyn@samhealth.org

5. Education and training:

<table>
<thead>
<tr>
<th>College/University</th>
<th>City/State</th>
<th>Dates Attended (MM/YY)</th>
<th>Degree Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Saskatchewan, Saskatoon, Canada</td>
<td>04/84 - 06/92</td>
<td>B.Sc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduate Studies</th>
<th>College/University</th>
<th>City/State</th>
<th>Dates Attended (MM/YY)</th>
<th>Degree Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Saskatchewan, Saskatoon, Canada</td>
<td>06/92 - 06/94</td>
<td>Family Medicine Residency</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Other Training: Name | City/State | Dates Attended (MM/YY) | Degree/Certification Obtained |

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Attachment 12: NAIC Biographical Affidavits
Page 12 of 33
Revised 03/26/18
Applicant Name (Company) ____________________

FEIN: ____________________

NAIC No. ____________________

Note: If affiant attended a foreign school, please provide full address and telephone number of the college/university. If applicable, provide the foreign student Identification Number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.

College of Medicine
University of Saskatchewan
107 Wiggins Rd
Saskatoon, SK Canada
S7N 5E5

1 (306) 966-6135
Applicant Company Name: ____________________

FEIN: ____________________

6. List of memberships in professional societies and associations:

<table>
<thead>
<tr>
<th>Name of Society/Association</th>
<th>Contact Name</th>
<th>Address of Society/Association</th>
<th>Telephone Number of Society/Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon Medical Assn.</td>
<td>Bryan Boehmig</td>
<td>1111 SW 68th Ave, Portland, OR 97210</td>
<td>503-619-8000</td>
</tr>
<tr>
<td>American Medical Assn.</td>
<td></td>
<td>2900 W. Wabash Ave., Suite 81300, Chicago IL 60611-8335</td>
<td>800-621-8335</td>
</tr>
</tbody>
</table>

7. Present or proposed position with the Applicant Company: Chief Medical Officer

8. List complete employment record for the past twenty (20) years, whether compensated or otherwise (up to and including present jobs, positions, partnerships, owner of an entity, administrator, manager, operator, directorates or officerships). Please list the most recent first. Attach additional pages if the space provided is insufficient. It is only necessary to provide telephone numbers and supervisory information for the past ten (10) years. Additional information may be required during the third-party verification process for international employers.

Beginning/Ending Dates (MM/YY): 06/12 - present
Employer’s Name: Samaritan Health Services
Address: 2200 NW Walnut Blvd
City: Corvallis
State/Province: OR
Postal Code: 97330
Phone: 541-768-4886
Offices/Positions Held: Chief Medical Officer
Type of Business: Health Plan
Supervisor/Contact: Kelley 

Beginning/Ending Dates (MM/YY): 04/98 - 06/12
Employer’s Name: Samaritan Health Services
Address: 3600 NW Samaritan Dr
City: Corvallis
State/Province: OR
Postal Code: 97330
Phone: 541-768-3111
Offices/Positions Held: Physician
Type of Business: Family Medicine Clinic
Supervisor/Contact: Stephanie 

Beginning/Ending Dates (MM/YY): ______ - ______
Employer’s Name: ____________________________
Address: ____________________________
City: ____________________________
State/Province: ____________________________
Country: ____________________________
Postal Code: ______
Phone: ______
Offices/Positions Held: ____________________________
Type of Business: ____________________________
Supervisor/Contact: ____________________________

Beginning/Ending Dates (MM/YY): ______ - ______
Employer’s Name: ____________________________
Address: ____________________________
City: ____________________________
State/Province: ____________________________
Country: ____________________________
Postal Code: ______
Phone: ______
Offices/Positions Held: ____________________________
Type of Business: ____________________________
Supervisor/Contact: ____________________________

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Attachment 12: NAIC Biographical Affidavits

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9. a. Have you ever been in a position which required a fidelity bond?
   
   Yes [ ] No [X]
   
   If any claims were made on the bond, give details: ____________________________

   b. Have you ever been denied an individual or position schedule fidelity bond, or had a bond canceled or revoked?
   
   Yes [ ] No [ ]
   
   If yes, give details: ________________________________

10. List any professional, occupational and vocational licenses (including licenses to sell securities) issued by any public or governmental licensing agency or regulatory authority that you presently hold or have held in the past. For any non-insurance regulatory issuer, identify and provide the name, address and telephone number of the licensing authority or regulatory body having jurisdiction over the license(s) issued. If your professional license number is your Social Security Number (SSN) or embeds your SSN or any sequence of more than five numbers that are reasonably identifiable as your SSN, then write SSN for that portion of the professional license number that is represented by your SSN. (For example, “SSN”, “12-SSN-345” or “1234-SSN” (last 6 digits)). Attach additional pages if the space provided is insufficient.

   Organization/Issuer of License: __________________________
   Address: __________________________
   City: __________ State/Province: __________ Country: __________ Postal Code: ________
   License Type: ________ License #: __________ Date Issued (MM/YY): __________
   Date Expired (MM/YY): __________ Reason for Termination: ______________________
   Non-Insurance Regulatory Phone Number (if known): ____________________________

   Organization/Issuer of License: __________________________
   Address: __________________________
   City: __________ State/Province: __________ Country: __________ Postal Code: ________
   License Type: ________ License #: __________ Date Issued (MM/YY): __________
   Date Expired (MM/YY): __________ Reason for Termination: ______________________
   Non-Insurance Regulatory Phone Number (if known): ____________________________

11. In responding to the following, if the record has been sealed or expunged, and the affiant has personally verified that the record was sealed or expunged, an affiant may respond “no” to the question. Have you ever:
   
   a. Been refused an occupational, professional, or vocational license or permit by any regulatory authority, or any public administrative, or governmental licensing agency?
   
   Yes [ ] No [X]
   
   b. Had any occupational, professional, or vocational license or permit you hold or have held, been subject to any judicial, administrative, regulatory, or disciplinary action?
Applicant Company Name: ____________________________  NAIC No. ____________________________

FEIN: ____________________________

Yes ☐  No ☐

c. Been placed on probation or had a fine levied against you or your occupational, professional, or vocational license or permit in any judicial, administrative, regulatory, or disciplinary action?

Yes ☐  No ☐

d. Been charged with, or indicted for, any criminal offense(s) other than civil traffic offenses?

Yes ☐  No ☐

e. Pled guilty, or nolo contendere, or been convicted of, any criminal offense(s) other than civil traffic offenses?

Yes ☐  No ☐

f. Had adjudication of guilt withheld, had a sentence imposed or suspended, had pronouncement of a sentence suspended, or been pardoned, fined, or placed on probation, for any criminal offense(s) other than civil traffic offenses?

Yes ☐  No ☐

g. Been subject to a cease and desist letter or order, or enjoined, either temporarily or permanently, in any judicial, administrative, regulatory, or disciplinary action, from violating any federal, state law or law of another country regulating the business of insurance, securities or banking, or from carrying out any particular practice or practices in the course of the business of insurance, securities or banking?

Yes ☐  No ☐

h. Been, within the last ten (10) years, a party to any civil action involving dishonesty, breach of trust, or a financial dispute?

Yes ☐  No ☐

i. Had a finding made by the Comptroller of any state or the Federal Government that you have violated any provisions of small loan laws, banking or trust company laws, or credit union laws, or that you have violated any rule or regulation lawfully made by the Comptroller of any state or the Federal Government?

Yes ☐  No ☐

j. Had a lien or foreclosure action filed against you or any entity while you were associated with that entity?

Yes ☐  No ☐

If the response to any question above is yes, please provide details including dates, locations, disposition, etc. Attach a copy of the complaint and filed adjudication or settlement as appropriate.

12. List any entity subject to regulation by an insurance regulatory authority that you control directly or indirectly. The term “control” (including the terms “controlling,” “controlled by” and “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract other than a commercial contract for goods or non-management services, or otherwise, unless the power is the result of an official position with or corporate office held by the person. Control shall be presumed to exist if any person, directly or indirectly, owns, controls, holds with the

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Attachment 12: NAIC Biographical Affidavits

Revised 03/26/18
FORM 11
Page 16 of 33
Applicant Company Name: ___________________________  NAIC No. _______________________
FEIN: ___________________________

power to vote, or holds proxies representing, ten percent (10%) or more of the voting securities of any other person.

☐

If any of the stock is pledged or hypothecated in any way, give details. ___________________________

____________________________

13. Do [Will] you or members of your immediate family individually or cumulatively subscribe to or own, beneficially or of record, 10% or more of the outstanding shares of stock of any entity subject to regulation by an insurance regulatory authority, or its affiliates? An “affiliate” of, or person “affiliated” with, a specific person, is a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the person specified.

Yes ☐  No ☑

If yes, please identify the company or companies in which the cumulative stock holdings represent 10% or more of the outstanding voting securities.

____________________________

If any of the shares of stock are pledged or hypothecated in any way, give details.

____________________________

14. Have you ever been adjudged a bankrupt?

Yes ☐  No ☑

If yes, provide details: ___________________________

____________________________

15. To your knowledge has any company or entity for which you were an officer or director, trustee, investment committee member, key management employee or controlling stockholder, had any of the following events occur while you served in such capacity?

a. Been refused a permit, license, or certificate of authority by any regulatory authority, or governmental-licensing agency?

Yes ☐  No ☑

b. Had its permit, license, or certificate of authority suspended, revoked, canceled, non-renewed, or subjected to any judicial, administrative, regulatory, or disciplinary action (including rehabilitation, liquidation, receivership, conservatorship, federal bankruptcy proceeding, state insolvency, supervision or any other similar proceeding)?

Yes ☐  No ☑

c. Been placed on probation or had a fine levied against it or against its permit, license, or certificate of authority in any civil, criminal, administrative, regulatory, or disciplinary action?

Yes ☐  No ☑
If the answer to any of the above is yes, please indicate and give details. When responding to questions (b) and (c), affiant should also include any events within twelve (12) months after his or her departure from the entity.

Note: If an affiant has any doubt about the accuracy of an answer, the question should be answered in the positive and an explanation provided.

Dated and signed this 25 day of March 2019 at 10:45 am. I hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

I hereby acknowledge that I may be contacted to provide additional information regarding international searches.

(Signature of Affiant)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 25 day of March, 2019 by Kevin Gilman, and:

who is personally known to me, or

who produced the following identification: ____________________________

[SEAL]

Notary Public

Printed Notary Name

My Commission Expires
BIOGRAPHICAL AFFIDAVIT
Supplemental Personal Information

(Print or Type)

To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

Full name, address, and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names).

1. Affiant’s Full Name (Initials Not Acceptable): First: Kevin Middle: Daniel Last: Ewanchyna

If ANSWER IS “NONE,” SO STATE.

2. Have you ever used any other name, including first, middle or last name, nickname, maiden name or aliases?

<table>
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<tr>
<th>Yes</th>
<th>No</th>
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If yes, give the reason if any, if none indicate such, and provide the full name(s) and date(s) used.

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<tr>
<th>Beginning/Ending Date(s) Used (MM/YY)</th>
<th>Name(s) Specify: First, Middle or Last Name</th>
<th>Reason (If none, indicate such)</th>
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Note: Dates provided in response to this question may be approximate. Parties using this form understand that there could be an overlap of dates when transitioning from one name to another. If applicable, provide the foreign student Identification Number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.

3. Affiant’s Social Security Number: ____________________________

4. Government Identification Number if not a U.S. Citizen: ____________________________

5. Foreign Student ID# (if applicable): ____________________________
Applicant Company Name: ___________________________

6. Date of Birth: (MM/DD/YY) ________

7. Name of Affiant’s Spouse (if applicable): ______________________________________

8. List your residences for the last ten (10) years starting with your current address, giving:

<table>
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<tr>
<th>Beginning/Ending Dates (MM/YY)</th>
<th>Address</th>
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Note: Dates provided in response to this question may be approximate, except for current address. Parties using this form understand that there could be an overlap of dates when transitioning from one address to another.

Dated and signed this 25 day of March, 2019 at 10:45 A.M. I hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

✓ I hereby acknowledge that I may be contacted to provide additional information regarding international searches.

(Signature of Affiant)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 25 day of March, 2019 by Kristen Marie Price, who is personally known to me, or

who produced the following identification: __________________________________________

[SEAL] KRISTEN MARIE PRICE NOTARY PUBLIC - OREGON COMMISSION NO. 947322 MY COMMISSION EXPIRES FEBRUARY 10, 2020

Printed Notary Name

My Commission Expires
DISCLOSURE AND AUTHORIZATION CONCERNING BACKGROUND REPORTS
(All states except California, Minnesota and Oklahoma)

This Disclosure and Authorization is provided to you in connection with pending or future application(s) of [company name] ("Company") for licensure or a permit to organize ("Application") with a department of insurance in one or more states within the United States. Company desires to procure a consumer or investigative consumer report (or both) ("Background Reports") regarding your background for review by a department of insurance in any state where Company pursues an Application during the term of your functioning as, or seeking to function as, an officer, member of the board of directors or other management representative ("Affiant") of Company or of any business entities affiliated with Company ("Term of Affiliation") for which a Background Report is required by a department of insurance reviewing any Application. Background Reports requested pursuant to your authorization below may contain information bearing on your character, general reputation, personal characteristics, mode of living and credit standing. The purpose of such Background Reports will be to evaluate the Application and your background as it pertains thereto. To the extent required by law, the Background Reports procured under this Disclosure and Authorization will be maintained as confidential.

You may obtain copies of any Background Reports about you from the consumer reporting agency ("CRA") that produces them. You may also request more information about the nature and scope of such reports by submitting a written request to Company. To obtain contact information regarding CRA or to submit a written request for more information, contact [company's designated person, position, or department, address and phone].

Attached for your information is a “Summary of Your Rights Under the Fair Credit Reporting Act.”

AUTHORIZATION: I am currently an Affiant of Company as defined above. I have read and understand the above Disclosure and by my signature below, I consent to the release of Background Reports to a department of insurance in any state where Company files or intends to file an Application, and to the Company, for purposes of investigating and reviewing such Application and my status as an Affiant. I authorize all third parties who are asked to provide information concerning me to cooperate fully by providing the requested information to CRA retained by Company for purposes of the foregoing Background Reports, except records that have been erased or expunged in accordance with law.

I understand that I may revoke this Authorization at any time by delivering a written revocation to Company and that Company will, in that event, forward such revocation promptly to any CRA that either prepared or is preparing Background Reports under this Disclosure and Authorization. This Authorization shall remain in full force and effect until the earlier of (i) the expiration of the Term of Affiliation, (ii) written revocation as described above, or (iii) six (6) months following the date of my signature below.

A true copy of this Disclosure and Authorization shall be valid and have the same force and effect as the signed original.

(Signature)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 25 day of March, 2019 by

who is personally known to me, or

who produced the following identification:

[SEAL]

Notary Public

Printed Notary Name

My Commission Expires

©2019 National Association of Insurance Commissioners

Revised 03/26/18

FORM 11
BIOGRAPHICAL AFFIDAVIT

To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

(Print or Type)

Full name, address and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names).

Samaritan Health Services
3600 NW Samaritan Drive
Corvallis, OR 97330
541-768-5111

In connection with the above-named entity, I herewith make representations and supply information about myself as hereinafter set forth. (Attach addendum or separate sheet if space hereon is insufficient to answer any question fully.) IF ANSWER IS "NO" OR "NONE," SO STATE.

1. Affiant’s Full Name (Initials Not Acceptable): First: Daniel Middle: Burton Last: Smith

2. a. Are you a citizen of the United States?
   Yes [X] No

   b. Are you a citizen of any other country?
   Yes [ ] No [X]
   If yes, what country?

3. Affiant’s occupation or profession: Chief Financial Officer

4. Affiant’s business address: 3600 NW Samaritan Dr., Corvallis, OR 97330
   Business telephone: 541-768-5390
   Business Email: DanS@samhealth.org

5. Education and training:

   College/University City/State Dates Attended (MM/YY) Degree Obtained
   California State University Chico, California -12/1988 Bachelor of Science, Business Administration
   Graduate Studies College/University City/State Dates Attended (MM/YY) Degree Obtained
   George Fox University Portland, Oregon -12/2007 Masters of Science, Business Administration
   Other Training: Name City/State Dates Attended (MM/YY) Degree/Certification Obtained
Note: If affiant attended a foreign school, please provide full address and telephone number of the college/university. If applicable, provide the foreign student Identification Number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.
6. List of memberships in professional societies and associations:

<table>
<thead>
<tr>
<th>Name of Society/Association</th>
<th>Contact Name</th>
<th>Address of Society/Association</th>
<th>Telephone Number of Society/Association</th>
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<tbody>
<tr>
<td>Healthcare Financial Management Association</td>
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<td>3 Westbrook Corporate Center, Suite 600 Westchester, IL 60154-5732</td>
<td>708-531-9600</td>
</tr>
<tr>
<td>Oregon Society of Healthcare Executives</td>
<td>Sally Cheyne</td>
<td>PO Box 1124, Albany, OR. 97321</td>
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7. Present or proposed position with the Applicant Company:

8. List complete employment record for the past twenty (20) years, whether compensated or otherwise (up to and including present jobs, positions, partnerships, owner of an entity, administrator, manager, operator, directorates or officerships). Please list the most recent first. Attach additional pages if the space provided is insufficient. It is only necessary to provide telephone numbers and supervisory information for the past ten (10) years. Additional information may be required during the third-party verification process for international employers.

See attached resume

Beginning/Ending Dates (MM/YY): _____ Employer’s Name:

Address: ___________________________ City: _______________ State/Province: __________

Country: _______________ Postal Code: __________ Phone: ________ Offices/Positions Held: __________

Type of Business: ___________________________ Supervisor/Contact: ___________________________

Beginning/Ending Dates (MM/YY): _____ Employer’s Name:

Address: ___________________________ City: _______________ State/Province: __________

Country: _______________ Postal Code: __________ Phone: ________ Offices/Positions Held: __________

Type of Business: ___________________________ Supervisor/Contact: ___________________________

Beginning/Ending Dates (MM/YY): _____ Employer’s Name:

Address: ___________________________ City: _______________ State/Province: __________

Country: _______________ Postal Code: __________ Phone: ________ Offices/Positions Held: __________

Type of Business: ___________________________ Supervisor/Contact: ___________________________

Beginning/Ending Dates (MM/YY): _____ Employer’s Name:

Address: ___________________________ City: _______________ State/Province: __________

Country: _______________ Postal Code: __________ Phone: ________ Offices/Positions Held: __________

Type of Business: ___________________________ Supervisor/Contact: ___________________________
Applicant Company Name: ____________________________

Country: _______________ Postal Code: ____________ Phone: ____________ Offices/Positions Held: ____________________________

Type of Business: ____________________________ Supervisor/Contact: ____________________________

9. a. Have you ever been in a position which required a fidelity bond?
   Yes ☐ No ☐
   If any claims were made on the bond, give details: ____________________________

b. Have you ever been denied an individual or position schedule fidelity bond, or had a bond canceled or revoked?
   Yes ☐ No ☐
   If yes, give details: ____________________________

10. List any professional, occupational and vocational licenses (including licenses to sell securities) issued by any public or governmental licensing agency or regulatory authority or licensing authority that you presently hold or have held in the past. For any non-insurance regulatory issuer, identify and provide the name, address and telephone number of the licensing authority or regulatory body having jurisdiction over the license (s) issued. If your professional license number is your Social Security Number (SSN) or embeds your SSN or any sequence of more than five numbers that are reasonably identifiable as your SSN, then write SSN for that portion of the professional license number that is represented by your SSN. (For example, “SSN”, “12-SSN-345” or “1234-SSN” (last 6 digits)). Attach additional pages if the space provided is insufficient.

   Organization/Issuer of License: Oregon State Board of Accountancy Address: 3218 Pringle Rd. SE, Suite 110

   City: Salem __________ State/Province: Oregon __________ Country: United States __________ Postal Code:97302-6307

   License Type: CPA __________ License #: 7176 __________ Date Issued (MM/YY): 10/1992

   Date Expired (MM/YY): __________ Reason for Termination: __________

   Non-Insurance Regulatory Phone Number (if known): 503-378-4181

   Organization/Issuer of License: ____________________________ Address: ____________________________

   City: ____________________________ State/Province: ____________________________ Country: ____________________________ Postal Code: ____________________________

   License Type: ____________________________ License #: ____________________________ Date Issued (MM/YY): ____________________________

   Date Expired (MM/YY): ____________________________ Reason for Termination: ____________________________

   Non-Insurance Regulatory Phone Number (if known): ____________________________

11. In responding to the following, if the record has been sealed or expunged, and the affiant has personally verified that the record was sealed or expunged, an affiant may respond “no” to the question. Have you ever:

   a. Been refused an occupational, professional, or vocational license or permit by any regulatory authority, or any public administrative, or governmental licensing agency?
Yes ☐ No ☑

b. Had any occupational, professional, or vocational license or permit you hold or have held, been subject to any judicial, administrative, regulatory, or disciplinary action?
Yes ☐ No ☑

c. Been placed on probation or had a fine levied against you or your occupational, professional, or vocational license or permit in any judicial, administrative, regulatory, or disciplinary action?
Yes ☐ No ☑

d. Been charged with, or indicted for, any criminal offense(s) other than civil traffic offenses?
Yes ☐ No ☑

e. Pled guilty, or nolo contendere, or been convicted of, any criminal offense(s) other than civil traffic offenses?
Yes ☐ No ☑

f. Had adjudication of guilt withheld, had a sentence imposed or suspended, had pronouncement of a sentence suspended, or been pardoned, fined, or placed on probation, for any criminal offense(s) other than civil traffic offenses?
Yes ☐ No ☑

g. Been subject to a cease and desist letter or order, or enjoined, either temporarily or permanently, in any judicial, administrative, regulatory, or disciplinary action, from violating any federal, state law or law of another country regulating the business of insurance, securities or banking, or from carrying out any particular practice or practices in the course of the business of insurance, securities or banking?
Yes ☐ No ☑

h. Been, within the last ten (10) years, a party to any civil action involving dishonesty, breach of trust, or a financial dispute?
Yes ☐ No ☑

i. Had a finding made by the Comptroller of any state or the Federal Government that you have violated any provisions of small loan laws, banking or trust company laws, or credit union laws, or that you have violated any rule or regulation lawfully made by the Comptroller of any state or the Federal Government?
Yes ☐ No ☑

j. Had a lien or foreclosure action filed against you or any entity while you were associated with that entity?
Yes ☐ No ☑

If the response to any question above is yes, please provide details including dates, locations, disposition, etc. Attach a copy of the complaint and filed adjudication or settlement as appropriate.
12. List any entity subject to regulation by an insurance regulatory authority that you control directly or indirectly. The term "control" (including the terms "controlling," "controlled by," and "under common control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract other than a commercial contract for goods or non-management services, or otherwise, unless the power is the result of an official position with or corporate office held by the person. Control shall be presumed to exist if any person, directly or indirectly, owns, controls, holds with the power to vote, or holds proxies representing, ten percent (10%) or more of the voting securities of any other person.

If any of the stock is pledged or hypothecated in any way, give details.

13. Do [Will] you or members of your immediate family individually or cumulatively subscribe to or own, beneficially or of record, 10% or more of the outstanding shares of stock of any entity subject to regulation by an insurance regulatory authority, or its affiliates? An “affiliate” of, or person “affiliated” with, a specific person, is a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the person specified.

Yes [ ] No [x]  
If yes, please identify the company or companies in which the cumulative stock holdings represent 10% or more of the outstanding voting securities.

If any of the shares of stock are pledged or hypothecated in any way, give details.

14. Have you ever been adjudged a bankrupt?

Yes [ ] No [x]  
If yes, provide details:

15. To your knowledge has any company or entity for which you were an officer or director, trustee, investment committee member, key management employee or controlling stockholder, had any of the following events occur while you served in such capacity?

a. Been refused a permit, license, or certificate of authority by any regulatory authority, or governmental-licensing agency?

   Yes [ ] No [x]  

b. Had its permit, license, or certificate of authority suspended, revoked, canceled, non-renewed, or subjected to any judicial, administrative, regulatory, or disciplinary action (including rehabilitation, liquidation, receivership, conservatorship, federal bankruptcy proceeding, state insolvency, supervision or any other similar proceeding)?

   Yes [ ] No [x]
Applicant Company Name: _________________  NAIC No.  
FEIN: _________________

c. Been placed on probation or had a fine levied against it or against its permit, license, or certificate of authority in any civil, criminal, administrative, regulatory, or disciplinary action?

   Yes [ ] No [x]

If the answer to any of the above is yes, please indicate and give details. When responding to questions (b) and (c), affiant should also include any events within twelve (12) months after his or her departure from the entity.

Note: If an affiant has any doubt about the accuracy of an answer, the question should be answered in the positive and an explanation provided.

Dated and signed this 10 day of April 2019 at 3 pm. I hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

[Signature of Affiant]

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 10 day of April, 2019 by Daniel B. Smith and:

✓ who is personally known to me, or

who produced the following identification:

[SEAL]

OFFICIAL STAMP
MICHELLE JOY LINTON
NOTARY PUBLIC - OREGON
COMMISSION NO. 949818
MY COMMISSION EXPIRES APRIL 24, 2020

Michelle Joy Linton
Notary Public
Printed Notary Name
4/24/20
My Commission Expires
BIOGRAPHICAL AFFIDAVIT
Supplemental Personal Information

(Print or Type)

To the extent permitted by law, this affidavit will be kept confidential by the state insurance regulatory authority. The affiant may be required to provide additional information during the third-party verification process if they have attended a foreign school or lived and worked internationally.

Full name, address, and telephone number of the present or proposed entity under which this biographical statement is being required (Do Not Use Group Names).

Samaritan Health Services ____________________ __________________
3600 NW Samaritan Drive ____________________
Corvallis, OR 97330 ____________________
541-768-5111 ____________________

1. Affiant's Full Name (Initials Not Acceptable): First: Daniel Middle: Burton Last: Smith
   IF ANSWER IS "NONE," SO STATE.

2. Have you ever used any other name, including first, middle or last name, nickname, maiden name or aliases?
   Yes [ ] No [x]
   If yes, give the reason if any, if none indicate such, and provide the full name(s) and date(s) used.

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<th>Reason (If none, indicate such)</th>
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Note: Dates provided in response to this question may be approximate. Parties using this form understand that there could be an overlap of dates when transitioning from one name to another. If applicable, provide the foreign student Identification Number and/or attach foreign diploma or certificate of attendance to the Biographical Affidavit Personal Supplemental Information.

3. Affiant's Social Security Number: ________________

4. Government Identification Number if not a U.S. Citizen: ____________________

©2019 National Association of Insurance Commissioners
Attachment 12: NAIC Biographical Affidavits
Applicant Company Name: 

FEIN: 

5. Foreign Student ID# (if applicable): 

6. Date of Birth: (MM/DD/YY): _______ Place of Birth, City: 
State/Province: _______ Country: 

7. Name of Affiant’s Spouse (if applicable): 

8. List your residences for the last ten (10) years starting with your current address, giving:

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<th>Beginning/Ending Dates (MM/YY)</th>
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Note: Dates provided in response to this question may be approximate, except for current address. Parties using this form understand that there could be an overlap of dates when transitioning from one address to another.

Dated and signed this 10 day of April, 2019 at 3 pm. I hereby certify under penalty of perjury that I am acting on my own behalf and that the foregoing statements are true and correct to the best of my knowledge and belief.

I hereby acknowledge that I may be contacted to provide additional information regarding international searches.

(Signature of Affiant)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 10 day of April, 2019 by Daniel B. Smith and:

✓ who is personally known to me, or

who produced the following identification: 

[SEAL]

©2019 National Association of Insurance Commissioners
Attachment 12: NAIC Biographical Affidavits
DISCLOSURE AND AUTHORIZATION CONCERNING BACKGROUND REPORTS

(All states except California, Minnesota and Oklahoma)

This Disclosure and Authorization is provided to you in connection with pending or future application(s) of Samaritan Health Services [company name] ("Company") for licensure or a permit to organize ("Application") with a department of insurance in one or more states within the United States. Company desires to procure a consumer or investigative consumer report (or both) ("Background Reports") regarding your background for review by a department of insurance in any state where Company pursues an Application during the term of your functioning as, or seeking to function as, an officer, member of the board of directors or other management representative ("Affiant") of Company or of any business entities affiliated with Company ("Term of Affiliation") for which a Background Report is required by a department of insurance reviewing any Application. Background Reports requested pursuant to your authorization below may contain information bearing on your character, general reputation, personal characteristics, mode of living and credit standing. The purpose of such Background Reports will be to evaluate the Application and your background as it pertains thereto. To the extent required by law, the Background Reports procured under this Disclosure and Authorization will be maintained as confidential.

You may obtain copies of any Background Reports about you from the consumer reporting agency ("CRA") that produces them. You may also request more information about the nature and scope of such reports by submitting a written request to Company. To obtain contact information regarding CRA or to submit a written request for more information, contact [company’s designated person, position, or department, address and phone].

Attached for your information is a “Summary of Your Rights Under the Fair Credit Reporting Act.”

AUTHORIZATION: I am currently an Affiant of Company as defined above. I have read and understand the above Disclosure and by my signature below, I consent to the release of Background Reports to a department of insurance in any state where Company files or intends to file an Application, and to the Company, for purposes of investigating and reviewing such Application and my status as an Affiant. I authorize all third parties who are asked to provide information concerning me to cooperate fully by providing the requested information to CRA retained by Company for purposes of the foregoing Background Reports, except records that have been erased or expunged in accordance with law.

I understand that I may revoke this Authorization at any time by delivering a written revocation to Company and that Company will, in that event, forward such revocation promptly to any CRA that either prepared or is preparing Background Reports under this Disclosure and Authorization. This Authorization shall remain in full force and effect until the earlier of (i) the expiration of the Term of Affiliation, (ii) written revocation as described above, or (iii) six (6) months following the date of my signature below.

A true copy of this Disclosure and Authorization shall be valid and have the same force and effect as the signed original.

Daniel Burton Smith 1482 NW Ashley Dr., Albany, OR. 97321

(Printed Full Name and Residence Address)

4/10/19

(Date)

State of: Oregon County of: Benton

The foregoing instrument was acknowledged before me this 10 day of April, 2019 by Daniel B. Smith, and:

✓ who is personally known to me, or

who produced the following identification:

[SEAL]

MICHELLE J. LINTON

Notary Public

Printed Notary Name

My Commission Expires APRIL 24, 2020

©2019 National Association of Insurance Commissioners

Attachment 12: NAIC Biographical Affidavits

Page 31 of 33
Daniel B. Smith, FHFMA, CPA

Education

George Fox University, Portland, OR

Masters of Science, Business Administration: December 2007
- Cumulative GPA: 3.9

California State University, Chico

Bachelor of Science, Business Administration: December 1988
- Accounting Concentration
- Cumulative GPA: 3.3

Professional experience

6/2003 – Present  Samaritan Health Services  Corvallis, OR
Chief Financial Officer
- Responsible for all financial operations of a major health system including five hospitals with 360 combined licensed beds, 120 employed physician practice and two senior care facilities. Accountable for implementation of the financial vision of the organization.

Corporate Controller
- Assumed corporate responsibilities for financial functions across five hospitals and three medical groups. Strategically developed corporate positions to assist with integration and standardization across a growing multi-entity organization.

Chief Financial Officer
- Responsible for several departments within the hospital including Accounting, Materials Management, Admitting/Registration, Business Office and Medical Records. Presented financial information to the Board of Directors on a monthly basis.

Controller
- Supervised Accounting Department staff in preparation of financial statements. Ensured timely and accurate payroll for all employees of the 76-bed hospital and 40-physician medical group.

**Senior Accountant**

- Provided accounting support to the Controller in preparation of the financial statements. Performed detailed analyses as requested. Created accounting system for newly formed medical group.


**Senior Tax Consultant**

- Prepared and supervised the preparation of individual, corporation and partnership income tax returns as well as information returns for tax-exempt entities. Developed excellent communication skills while working with clients on technical issues.

1/1989 – 3/1990 Ernst & Young Sacramento, CA

**Audit Senior**

- Supervised firm personnel and performed audit procedures for clients in various industries including banking, real estate, health care, insurance and public utilities. Gained valuable experience while being exposed to several accounting systems and functions.

**Community activities**

HealthCare Financial Management Association, Fellow

Oregon Society of Healthcare Executives

Albany Public Schools Foundation, Board of Directors

Albany Public Schools Site Council, Member

Albany Area Chamber of Commerce, Board of Directors

City of Albany Water Task Force, Member

City of Albany Waste Water Task Force, Member

St. Mary's Catholic Church, Member
Attachment 13 — Attestations

Applicant Name: InterCommunity Health Plans, Inc. dba InterCommunity Health Network Coordinated Care Organization

Authorizing Signature: ____________________________

Printed Name: ________________ Kelley Kaiser

Instructions: For each attestation, Applicant will check “yes,” or “no.” A “yes” answer is normal, and an explanation will be furnished if Applicant’s response is “no”. Applicant must respond to all attestations. If an attestation has more than one question and Applicant’s answer is “no” to any question, check “no” and provide an explanation.

These attestations must be signed by a representative of Applicant.

Unless a particular item is expressly effective at the time of Application, each attestation is effective starting at the time of Readiness Review and continuing throughout the term of the Contract. Each section of attestations refers to a questionnaire in an Attachment, which may furnish background and related questions.

A. General Questions Attestations (Attachment 6)

1. Contract
   a. Is Applicant willing to enter into a Contract for 2020 in the form of Appendix B?
      ✔ Yes  ☐ No
      If “no” please provide explanation: _____________________________________________

   b. Is Applicant willing to satisfy Readiness Review standards by September 30, 2019?
      ✔ Yes  ☐ No
      If “no” please provide explanation: _____________________________________________

2. Subcontracts
   a. Is Applicant willing to hold written agreements with Subcontractors that clearly describe the scope of work?
      ✔ Yes  ☐ No
      If “no” please provide explanation: _____________________________________________

   b. Is Applicant willing to provide to OHA an inventory of all work described in this Contract that is delegated or subcontracted and identify the entity performing the work?
      ✔ Yes  ☐ No
      If “no” please provide explanation: _____________________________________________

   c. Is Applicant willing to provide to OHA unredacted copies of written agreements with Subcontractors?
      ✔ Yes  ☐ No
      If “no” please provide explanation: _____________________________________________
3. Third Party Liability and Personal Injury Lien
   a. Is Applicant willing to identify and require its Subcontractors and Providers to identify and promptly report the presence of a Member’s Third Party Liability?
      ☑ Yes    ☐ No
      If “no” please provide explanation: ________________________________________________________________

   b. Is Applicant willing to document all efforts to pursue financial recoveries from third party insurers?
      ☑ Yes    ☐ No
      If “no” please provide explanation: ________________________________________________________________

   c. Is Applicant willing to report and require its Subcontractors to report all financial recoveries from third party insurers?
      ☑ Yes    ☐ No
      If “no” please provide explanation: ________________________________________________________________

   d. Is Applicant willing to provide and require its Affiliated entities and Subcontractors to provide to OHA all information related to TPL eligibility to assist in the pursuit of financial recovery?
      ☑ Yes    ☐ No
      If “no” please provide explanation: ________________________________________________________________

4. Oversight and Governance
   a. Is Applicant willing to provide its organizational structure, identifying any relationships with subsidiaries and entities with an ownership or Control stake?
      ☑ Yes    ☐ No
      If “no” please provide explanation: ________________________________________________________________
B. Provider Participation and Operations Attestations (Attachment 7)

1. General Questions

   a. Will Applicant have an individual accountable for each of the operational functions described below?

      • Contract administration
      • Outcomes and evaluation
      • Performance measurement
      • Health management and Care Coordination activities
      • System coordination and shared accountability between DHS Medicaid-funded LTC system and CCO
      • Behavioral Health (mental health and addictions) coordination and system management
      • Communications management to Providers and Members
      • Provider relations and network management, including credentialing
      • Health information technology and medical records
      • Privacy officer
      • Compliance officer
      • Quality Performance Improvement
      • Leadership contact for single point of accountability for the development and implementation of the Health Equity Plan
      • Traditional Health Workers Liaison

         ☑ Yes    ☐ No

         If “no” please provide explanation: ____________________________________________

   b. Will Applicant participate in the Learning Collaboratives required by ORS 442.210?

         ☑ Yes    ☐ No

         If “no” please provide explanation: ____________________________________________

   c. Will Applicant collect, maintain and analyze race, ethnicity, and preferred spoken and written languages data for all Members on an ongoing basis in accordance with standards jointly established by OHA and DHS in order to identify and track the elimination of health inequities?

         ☑ Yes    ☐ No

         If “no” please provide explanation: ____________________________________________
d. Will Applicant (i) authorize the provision of a drug requested by the Primary Care Physician (PCP) or Referral Provider, if the approved prescriber certifies medical necessity for the drug such as: the formulary’s equivalent has been ineffective in the treatment or the formulary’s drug causes or is reasonably expected to cause adverse or harmful reactions to the Member and (ii) reimburse Providers for dispensing a 72-hour supply of a drug that requires Prior Authorization?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________

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e. Will Applicant comply with all applicable Provider requirements of Medicaid law under 42 CFR Part 438, including Provider certification requirements, anti-discrimination requirements, Provider participation and consultation requirements, the prohibition on interference with Provider advice, limits on Provider indemnification, rules governing payments to Providers, and limits on physician incentive plans?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________

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f. Will Applicant ensure that all Provider, facility, and supplier contracts or agreements contain the required contract provisions that are described in the Contract?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________

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g. Will Applicant have executed Provider, facility, and supplier contracts in place to demonstrate adequate access and availability of Covered Services throughout the requested Service Area?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________

---

h. Will Applicant have all Provider contracts or agreements available to OHA in unredacted form?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________

---

i. Will Applicant’s contracts for administrative and management services contain the OHA required Contract provisions?

☑ Yes ☐ No

If “no” please provide explanation: ________________________________
j. Will Applicant establish, maintain, and monitor the performance of a comprehensive network of Providers to ensure sufficient access to Medicaid Covered Services, including comprehensive behavioral and oral health services, as well as supplemental services offered by the CCO in accordance with written policies, procedures, and standards for participation established by the CCO? Participation status will be revalidated at appropriate intervals as required by OHA regulations and guidelines.

☑ Yes  ☐ No

If “no” please provide explanation: ______________________________________

k. Will Applicant have executed written agreements with Providers (first tier, downstream, or related entity instruments) structured in compliance with OHA regulations and guidelines?

☑ Yes  ☐ No

If “no” please provide explanation: ______________________________________

l. Will Applicant have executed written agreements with Local Mental Health Authorities throughout its Service Area, structured in compliance with OHA regulations and guidelines?

☑ Yes  ☐ No

If “no” please provide explanation: ______________________________________

m. Will Applicant develop a comprehensive Behavioral Health plan in collaboration with the Local Mental Health Authority and other Community partners?

☑ Yes  ☐ No

If “no” please provide explanation: ______________________________________

n. Will Applicant coordinate and collaborate on the development of the Community health improvement plan (CHP) under ORS 414.627 with the Local Mental Health Authority’s comprehensive local plan for the delivery of mental health services (ORS 430.630)?

☑ Yes  ☐ No

If “no” please provide explanation: ______________________________________
o. Will Applicant, through its contracted Participating Provider Network, along with other specialists outside the network, Community resources or social services within the CCO’s Service Area, provide ongoing primary care, Behavioral Health care, oral health care, and specialty care as needed and will guarantee the continuity of care and the integration of services as described below?

- Prompt, convenient, and appropriate access to Covered Services by Members 24 hours a day, 7 days a week;
- The coordination of the individual care needs of Members in accordance with policies and procedures as established by the Applicant;
- Member involvement in decisions regarding treatment, proper education on treatment options, and the coordination of follow-up care;
- Effectively addressing and overcoming barriers to Member compliance with prescribed treatments and regimens; and
- Addressing diverse patient populations in a linguistically diverse and culturally competent manner.

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

p. Will Applicant establish policies, procedures, and standards that:

- Ensure and facilitate the availability, convenient, and timely access to all Medicaid Covered Services as well as any supplemental services offered by the CCO;
- Ensure access to medically necessary care and the development of medically necessary individualized care plans for Members;
- Promptly and efficiently coordinate and facilitate access to clinical information by all Providers involved in delivering the individualized care plan of the Member while following Timely Access to Services standards;
- Communicate and enforce compliance by Providers with medical necessity determinations; and
- Do not discriminate against Medicaid Members, including providing services to individuals with disabilities in the most integrated Community setting appropriate to the needs of those individuals.

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________
q. Will Applicant have verified that contracted Providers included in the CCO Facility Table are Medicaid certified and the Applicant certifies that it will only contract with Medicaid certified Providers in the future?
   - Yes
   - No

If “no” please provide explanation: ________________________________

r. Will Applicant provide all services covered by Medicaid and comply with OHA coverage determinations?
   - Yes
   - No

If “no” please provide explanation: ________________________________

s. Will Applicant have an Medicare plan to serve Fully Dual Eligibles either through contractual arrangement or owned by Applicant or Applicant parent company to create integrated Medicare-Medicaid opportunities during the contract period? [Plan can be a Dual Special Needs Plan or MA plan that offers low premiums and integrated Part D medications options].
   - Yes
   - No

If “no” please provide explanation: ________________________________

t. Will Applicant, Applicant staff and its Affiliated companies, subsidiaries or Subcontractors (first tier, downstream, and related entities), and Subcontractor staff be bound by 2 CFR 376 and attest that they are not excluded by the Department of Health and Human Services Office of the Inspector General or by the General Services Administration? Please note that this attestation includes any member of the board of directors, key management or executive staff or major stockholder of the Applicant and its Affiliated companies, subsidiaries or Subcontractors (first tier, downstream, and related entities).
   - Yes
   - No

If “no” please provide explanation: ________________________________

u. Is it true that neither the state nor federal government has brought any past or pending investigations, legal actions, administrative actions, or matters subject to arbitration involving the Applicant (and Applicant’s parent corporation, subsidiaries, or entities with an ownership stake, if applicable) or its Subcontractors, including key management or executive staff, or major shareholders over the past three years on matters relating to payments from governmental entities, both federal and state, for healthcare and/or prescription drug services?
   - Yes
   - No

If “no” please provide explanation: ________________________________
2. **Network Adequacy**
   
a. Is Applicant willing to monitor and evaluate the adequacy of its Provider Network?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________

   b. Is Applicant willing to remedy any deficiencies in its Provider Network within a
specified timeframe when deficiencies are identified?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________

   c. Is Applicant willing to report on its Provider Network in a format and frequency specified
by OHA?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________

   d. Is Applicant willing to collect data to validate that its Members are able to access care
within time and distance requirements?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________

   e. Is Applicant willing to collect data to validate that its Members are able to make
appointments within the required timeframes?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________

   f. Is Applicant willing to collect data to validate that its Members are able to access care
within the required timeframes?
   
   □ Yes  □ No

   g. Is Applicant willing to arrange for Covered Services to be provided by Non-Participating
Providers if the services are not timely available within Applicant’s Provider Network?
   
   □ Yes  □ No

3. **Fraud, Waste and Abuse Compliance**
   
a. Is Applicant willing to designate a Compliance Officer to oversee activities related to the
prevention and detection of Fraud, Waste and Abuse?
   
   □ Yes  □ No

   If “no” please provide explanation: ________________________________________________

   ________________________________________________
b. Is Applicant willing to send two representatives, including the Applicant’s designated Compliance Officer and another member of the senior executive team to attend a mandatory Compliance Conference on May 30, 2019?

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________

C. Value-Based Payment (VBP) Attestations (Attachment 8)

1. Have you reviewed the VBP Policy Requirements set forth in the VBP Questionnaire?

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________

2. Have you reviewed the VBP reference documents linked to the VBP Questionnaire?

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________

3. Can you implement and report on VBP as defined by VBP Questionnaire and the Health Care Payment Learning and Action Network’s (LAN’s) “Alternative Payment Model Framework White Paper Refreshed 2017” (https://hcp-lan.org/apm-refresh-white-paper/) and the OHA Value-Based Payment Roadmap Categorization Guidance for Coordinated Care Organizations?

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________

4. Will you begin CCO 2.0 – January 2020 – with at least 20% of your projected annual payments to your Providers under contracts that include a Value-Based Payment component as defined by the Health Care Payment Learning and Action Network’s (LAN’s) “Alternative Payment Model Framework White Paper Refreshed 2017” (https://hcp-lan.org/apm-refresh-white-paper/), Pay for Performance category 2C or higher and the OHA Value-Based Payment Roadmap Categorization Guidance for Coordinated Care Organizations?

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________

5. Do you permit OHA to publish your VBP data such as the actual VBP percent of spending that is LAN category 2C or higher and spending that is LAN category 3B or higher, as well as data pertaining to your care delivery areas, Patient-Centered Primary Care Home (PCPCH) payments, and other information about VBPs required by this RFA? (OHA does not intend to publish specific payments amounts from an Applicant to a specific provider.)

- [X] Yes
- [ ] No

If “no” please provide explanation: ________________________________
6. Do you agree to develop mitigation plans for adverse effects VBP may have on health inequities, health disparities, or any adverse health-related outcomes for any specific population (including racial, ethnic and culturally-based communities; LGBTQ people; persons with disabilities; people with limited English proficiency; and immigrants or refugees and Members with complex health care needs, as well as populations at the intersections of these groups) and to report on these plans to OHA annually?

☑️ Yes   ☐ No

If “no” please provide explanation: ________________________________

7. Do you agree to the requirements for VBP targets, care delivery areas and PCPCH clinics for years 2020 through 2024, as set forth in the VBP Questionnaire?

☑️ Yes   ☐ No

If “no” please provide explanation: ________________________________

8. Do you agree to the requirements for VBP data reporting for years 2020 through 2024, as set forth in the VBP Questionnaire?

☑️ Yes   ☐ No

If “no” please provide explanation: ________________________________

9. Should OHA contract with one or more other CCOs serving Members in the same geographical area, will you participate in OHA-facilitated discussions to select performance measures to be incorporated into each CCO’s VBP Provider contracts for common Provider types and specialties?

☑️ Yes   ☐ No

If “no” please provide explanation: ________________________________

10. If, after the discussion described in the previous question, OHA informs you of the Provider types and specialties for which the performance measures apply, will you incorporate all selected measures into applicable Provider contracts?

☑️ Yes   ☐ No

If “no” please provide explanation: ________________________________
D. Health Information Technology (HIT) Attestations (Attachment 9)

1. HIT Roadmap
   a. Does Applicant agree to participate in an interview/demonstration and deliver an HIT Roadmap with any refinements/adjustments agreed to with OHA during Readiness Review, for OHA approval?
      ☑ Yes ☐ No
      If “no” please provide explanation: ________________________________

   b. Does Applicant agree to provide an annual HIT Roadmap update for OHA approval to include status/progress on CCO-identified milestones, and any adjustments to the HIT Roadmap; as well as participate in an annual interview with OHA?
      ☑ Yes ☐ No
      If “no” please provide explanation: ________________________________

2. HIT Partnership
   a. Does Applicant agree to participate in the HIT Commons beginning 2020, including agreeing to do all of the following:
      • Maintaining an active, signed HIT Commons MOU and adhering to its terms,
      • Paying annual HIT Commons assessments, and
      • Serving, if elected, on the HIT Commons Governance Board or one of its committees?
      ☑ Yes ☐ No
      If “no” please provide explanation: ________________________________

   b. Does Applicant agree to participate in OHA’s HIT Advisory Group, (HITAG), at least once annually?
      ☑ Yes ☐ No
      If “no” please provide explanation: ________________________________

3. Support for EHR Adoption
   a. Will Applicant support EHR adoption for its contracted physical health Providers?
      ☑ Yes ☐ No
      If “no” please provide explanation: ________________________________
b. Will Applicant support EHR adoption for its contracted Behavioral Health Providers?
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________

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c. Will Applicant support EHR adoption for its contracted oral health Providers?
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________

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d. During Year 1, will Applicant report on the baseline of EHR adoption among its contracted physical health Providers, set Improvement Targets, and provide supporting detail about its implementation approach?
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________

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e. During Year 1, will Applicant report on the baseline of EHR adoption among its contracted Behavioral Health Providers, set Improvement Targets, and provide supporting detail about its implementation approach?
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________

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f. During Year 1, will Applicant report on the baseline of EHR adoption among its contracted oral health Providers, set Improvement Targets, and provide supporting detail about its implementation approach?
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________

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g. Will Applicant report to the state annually on which EHR(s) each of its contracted physical health Providers is using, by means of definitions and data sources agreed upon during Readiness Review? Will reports include product and vendor name, version, and, if applicable, certification year the ONC Certification (CHPL) number for Certified EHR Technology? See https://chpl.healthit.gov/ and https://www.healthit.gov/topic/certification-ehrs/2015-edition for more information about Certified EHR Technology.
   - Yes ☑️  No ☐
   If “no” please provide explanation: ____________________________________________
h. Will Applicant report to the state annually on which EHR(s) each of its contracted Behavioral Health Providers are using, by means of definitions and data sources agreed upon during Readiness Review? Will reports include product and vendor name, version, and, if applicable, certification year the ONC Certification (CHPL) number for Certified EHR Technology? See https://chpl.healthit.gov/ and https://www.healthit.gov/topic/certification-ehrs/2015-edition for more information about Certified EHR Technology.

☑ Yes ☐ No
If “no” please provide explanation: ____________________________________________________________


i. Will Applicant report to the state annually on which EHR(s) each of its contracted oral health Providers is using, by means of definitions and data sources agreed upon during Readiness Review? Will reports include product and vendor name, version, and, if applicable, certification year the ONC Certification (CHPL) number for Certified EHR Technology? See https://chpl.healthit.gov/ and https://www.healthit.gov/topic/certification-ehrs/2015-edition for more information about Certified EHR Technology.

☑ Yes ☐ No
If “no” please provide explanation: ____________________________________________________________


4. Support for HIE

a. Will Applicant ensure access to timely Hospital event notifications for its contracted physical health Providers? If there are costs associated with ensuring access to timely Hospital event notifications for contracted Providers, will the Applicant be responsible for those costs?

☑ Yes ☐ No
If “no” please provide explanation: ____________________________________________________________


b. Will Applicant ensure access to timely Hospital event notifications for its contracted Behavioral Health Providers? If there are costs associated with ensuring access to timely Hospital event notifications for contracted Providers, will the Applicant will be responsible for those costs.

☑ Yes ☐ No
If “no” please provide explanation: ____________________________________________________________


c. Will Applicant ensure access to timely Hospital event notifications for its contracted oral health Providers? If there are costs associated with ensuring access to timely Hospital event notifications for contracted Providers, will the Applicant will be responsible for those costs.

☑ Yes ☐ No
If “no” please provide explanation: ____________________________________________________________
d. Will Applicant use Hospital event notifications within the CCO, for example to support Care Coordination and/or population health efforts?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________

e. Will Applicant support access to health information exchange that enables sharing patient information for Care Coordination for its contracted physical health Providers?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________

f. Will Applicant support access to health information exchange that enables sharing patient information for Care Coordination for its contracted Behavioral Health Providers?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________

g. Will Applicant support access to health information exchange that enables sharing patient information for Care Coordination for its contracted oral health Providers?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________

h. During Year 1, will Applicant report on the baseline of HIE access and use among its contracted physical health Providers (inclusive of Hospital event notifications and HIE for Care Coordination), set Improvement Targets, and provide supporting detail about its implementation approach?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________

i. During Year 1, will Applicant report on the baseline of HIE access and use among its contracted Behavioral Health Providers (inclusive of Hospital event notifications and HIE for Care Coordination), set Improvement Targets, and provide supporting detail about its implementation approach?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

______________________________________________________________
j. During Year 1, will Applicant report on the baseline of HIE access and use among its contracted oral health Providers (inclusive of Hospital event notifications and HIE for Care Coordination), set Improvement Targets, and provide supporting detail about its implementation approach?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________

k. Will Applicant report to the state annually on which HIE tool(s) each of its contracted physical health Providers is using, using definitions and data sources agreed upon during Readiness Review?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________

l. Will Applicant report to the state annually on which HIE tool(s) each of its contracted Behavioral Health Providers is using, using definitions and data sources agreed upon during Readiness Review?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________

m. Will Applicant report to the state annually on which HIE tool(s) each of its contracted oral health Providers is using, using definitions and data sources agreed upon during Readiness Review?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________


a. For the initial VBP arrangements, will Applicant have by the start of Year 1 the HIT needed to administer the arrangements (as described in its supporting detail)?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________

b. For the planned VBP arrangements for Years 2 through 5, does Applicant have a roadmap to obtain the HIT needed to administer the arrangements (as described in its supporting detail)?

☑ Yes  ☐ No
If “no” please provide explanation: __________________________
c. By the start of Year 1, will the Applicant provide contracted Providers with VBP arrangements with timely (e.g., at least quarterly) information on measures used in the VBP arrangement(s) applicable to the Providers?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

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d. By the start of Year 1, will the Applicant provide contracted Providers with VBP arrangements with accurate and consistent information on patient attribution?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

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e. By the start of Year 1, will the Applicant identify for contracted Providers with VBP arrangements specific patients who need intervention through the year, so they can take action before the year end?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

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f. By the start of Year 1, will the Applicant have the capability to risk stratify and identify and report upon Member characteristics, including but not limited to past diagnoses and services, that can inform the targeting of interventions to improve outcomes?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

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g. By the start of each subsequent year for Years 2 through 5, will the Applicant CCO provide risk stratification and Member characteristics to your contracted Providers with VBP arrangements for the population(s) included in the arrangement(s) in place for each year?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

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E. Social Determinants of Health and Health Equity (SDOH-HE) Attestations (Attachment 10)

1. Social Determinants of Health and Health Equity Spending, Priorities, and Partnership

a. Is Applicant willing to direct a portion of its annual net income or reserves, as required by Oregon State Statute and defined by OHA in rule, to addressing health disparities and SDOH-HE?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________
b. Is Applicant willing to enter into written agreements with SDOH-HE partners that describe the following: any relationship or financial interest that may exist between the SDOH-HE partner and the CCO, how funds will be distributed, the scope of work including the domain of SDOH-HE addressed and the targeted population, whether CCO will refer Members to the SDOH-HE partner, the geographic area to be covered, how outcomes will be evaluated and measured, and how the CCO will collect and report data related to outcomes?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

____________________________


c. When identifying priorities for required SDOH-HE spending, is Applicant willing to designate, define and document a role for the CAC in directing, tracking and reviewing spending?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

____________________________


d. Is Applicant willing to align its SDOH-HE spending priorities with the priorities identified in the Community Health Improvement Plan and its Transformation and Quality Strategy, and to include at least one statewide priority (e.g. housing-related services and supports, including Supported Housing) in addition to its Community priorities?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

____________________________

2. Health-related Services

a. Is Applicant willing to align HRS Community benefit initiatives with Community priorities from the CCO’s Community Health Improvement Plan?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

____________________________

b. Is Applicant willing to align HRS Community benefit initiatives with a designated statewide priority should OHA require it?

☑ Yes  ☐ No

If “no” please provide explanation: __________________________________________

____________________________
c. Is Applicant willing to designate, define and document a role for the CAC when determining how Health-Related Services Community benefit initiatives decisions are made?

☑ Yes   □ No

If “no” please provide explanation: ________________________________

3. Community Advisory Council membership and role
   a. Is the Applicant willing to provide to OHA an organizational chart that includes the Community Advisory Council, and notes relationships between entities, including the CAC and the Board, how information flows between the bodies, the CAC and Board connection to various committees, and CAC representation on the board?

☑ Yes   □ No

If “no” please provide explanation: ________________________________

4. Health Equity Assessment and Health Equity Plan
   a. Is Applicant willing to develop and implement a Health Equity Plan according to OHA guidance, which includes a plan to provide cultural responsiveness and implicit bias education and training across the Applicant’s organization and Provider Network? See Sample Contract and Cultural Responsiveness Training Plan Guidance Document.

☑ Yes   □ No

If “no” please provide explanation: ________________________________

   b. Is Applicant willing to include in its Health Equity Plan at least one initiative using HIT to support patient engagement?

☑ Yes   □ No

If “no” please provide explanation: ________________________________

   c. Is Applicant willing to adopt potential health equity plan changes, including requirements, focus areas and components, based on OHA plan review feedback and, when applicable, based on guidance provided by the Oregon Health Policy Board’s Health Equity Committee?

☑ Yes   □ No

If “no” please provide explanation: ________________________________
d. Is Applicant willing to designate a single point of accountability within the organization, who has budgetary decision-making authority and health equity expertise, for the development and implementation of the Health Equity Plan?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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e. Is Applicant willing to faithfully execute the finalized Health Equity Plan?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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f. Is Applicant willing to a) ask vendors for cultural and linguistic accessibility when discussing bringing on new HIT tools for patient engagement and b) when possible, seek out HIT tools for patient engagement that are culturally and linguistically accessible?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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5. **Traditional Health Workers (THW) Utilization and Integration**

a. Is Applicant willing to develop and fully implement a Traditional Health Workers Integration and Utilization Plan?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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b. Is Applicant willing to work in collaboration with the THW Commission to implement the Commission’s best practices for THW integration and utilization?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

---

c. Is Applicant willing to fully implement the best practices developed in collaboration with the THW Commission?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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d. Is Applicant willing to develop and implement a payment strategy for THWs that is informed by the recommendations from the Payment Model Committee of the THW Commission?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

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e. Is Applicant willing to designate an individual within the organization as a THW Liaison as of the Effective Date of the Contract?

✔ Yes  ☐ No

If “no” please provide explanation: ________________________________

f. Is Applicant willing to engage THWs during the development of the CHA and CHP?

✔ Yes  ☐ No

If “no” please provide explanation: ________________________________

6. Community Health Assessment and Community Health Improvement Plan

a. Is Applicant willing to partner with local public health authorities, non-profit Hospitals, any CCO that shares a portion of its Service Area, and any Tribes that are developing a CHA/CHP to develop shared CHA and CHP priorities?

✔ Yes  ☐ No

If “no” please provide explanation: ________________________________

b. Is Applicant willing to align CHP priorities with at least two State Health Improvement Plan (SHIP) priorities and implement statewide SHIP strategies based on local need?

✔ Yes  ☐ No

If “no” please provide explanation: ________________________________

c. Is Applicant willing to submit its Community Health Assessment and Community Health Improvement Plan to OHA?

✔ Yes  ☐ No

If “no” please provide explanation: ________________________________

d. Is Applicant willing to develop and fully implement a community engagement plan?

✔ Yes  ☐ No

If “no” please provide explanation:
F. Behavioral Health Attestations (Attachment 11)

1. Behavioral Health Benefit

   a. Will Applicant report performance measures and implement Evidence-Based outcome measures, as developed by the OHA Metrics and Scoring Committee, and as specified in the Contract?  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________

   b. Will Applicant work collaboratively with OHA and its partners to implement all of the requirements in Exhibit M of the Contract?  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________

   c. Will Applicant be fully responsible for the Behavioral Health benefit for Members beginning in CY 2020?  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________

   d. Will Applicant manage the Global Budget (as defined in ORS 414.025) in a fully integrated manner? Fully integrated manner means that Applicant will not sub-capitate any Provider or entity for Behavioral Health services separately from physical health services nor will Applicant enter into any Value-Based Payment arrangements under which Behavioral Health spending is tracked separately from physical health services.  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________

   e. Will Applicant report on the information and data specified in the Performance Expectations section as specified in the Contract and submit an annual report to OAH for review and approval?  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________

   f. Will Applicant have sufficient resources, including technological, financial, Provider and workforce, to integrate the Behavioral Health benefit with oral and physical health care benefits?  
      
      [ ] Yes  [ ] No  
      
      If “no” please provide explanation: ____________________________________________________________
g. Will Applicant ensure the provision of cost-effective, comprehensive, person-centered, Culturally Responsive, and integrated Community-based Behavioral Health services for Members?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________

h. Will Applicant provide oversight, Care Coordination, transition planning and management of the Behavioral Health needs of Members to ensure Culturally Responsive and linguistically appropriate Behavioral Health services are provided in a way that Members are served in a most natural and integrated environment possible and that minimizes the use of institutional care?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________

i. Will Applicant follow Intensive Care Coordination standards as identified in OAR 410-141-3160/70?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________

j. Will Applicant ensure Members have access to Referral and screening at multiple health system or health care entry points?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________

k. Will Applicant use a standardized Assessment tool, to adapt the intensity and frequency of Behavioral Health services to the Behavioral Health needs of the Member?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________

l. Will Applicant work collaboratively to improve services for adult Members with SPMI as a priority population? Will Applicant make significant commitments and undertake significant efforts to continue to improve treatment and services so that adults with SPMI can live and prosper in integrated Community settings?

[✓] Yes   [ ] No

If “no” please provide explanation: ____________________________________________
m. Will Applicant ensure Members have timely access to all services under the Behavioral Health benefit in accordance with access to service standards as developed in Appendix C, the Administrative Rules Concept Document, under OHPB #17?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________

n. Will Applicant have an adequate Provider Network to ensure Members have timely access to Behavioral Health services and effective treatment in accordance with the Delivery System and Provider Capacity section of the Contract?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________

o. Will Applicant establish written policies and procedures for Prior Authorizations, in compliance with the Mental Health Parity and Addiction Equity Act of 2008, and be responsible for any inquiries or concerns and not delegate responsibility to Providers?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________

p. Will Applicant establish written policies and procedures for the Behavioral Health benefit and provide the written policies and procedures to OHA by the beginning of CY 2020?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________

q. Will Applicant require mental health and substance use disorder programs be licensed or certified by OHA to enter the Provider Network?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________

r. Will Applicant require Providers to screen Members for adequacy of supports for the Family in the home (e.g., housing adequacy, nutrition/food, diaper needs, transportation needs, safety needs and home visiting)?

☑ Yes  ☐ No

If “no” please provide explanation: _________________________________
s. Will Applicant ensure Applicant’s staff and Providers are trained in recovery principles, motivational interviewing, integration, and Foundations of Trauma Informed Care (https://traumainformedoregon.org/tic-intro-training-modules/)?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

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t. Will Applicant ensure Providers are trained in Trauma Informed approaches and provide regular periodic oversight and technical assistance to Providers?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

---
 u. Will Applicant require Providers, in developing Individual Service and Support Plans for Members, to assess for Adverse Childhood Experiences (ACEs) and trauma in a Culturally Responsive and Trauma Informed framework and approach?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

---

v. Will Applicant ensure Behavioral Health services are Culturally Responsive and Trauma Informed?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

---

w. Will Applicant assume responsibility for the entire Behavioral Health residential benefit by the beginning of CY 2022?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

---

x. Will Applicant include OHA approved Behavioral Health homes (BHHs) in Applicant’s network as the BHHs qualify in Applicant’s Region?

- Yes  
- No

If “no” please provide explanation: ____________________________________________

---

y. Will Applicant assist Behavioral Health organizations within the delivery system to establish BHHs?

- Yes  
- No

If “no” please provide explanation: ____________________________________________
z. Will Applicant utilize BHHs in their network for Members to the greatest extent possible?
   [✓] Yes  [ ] No
   If “no” please provide explanation: ____________________________

aa. Will Applicant provide a full psychological evaluation and child psychiatric consultation for children being referred to the highest levels of care (day treatment, subacute or PRTS)?
   [✓] Yes  [ ] No
   If “no” please provide explanation: ____________________________

2. MOU with Community Mental Health Program (CMHP)

   a. Will Applicant enter into a written memorandum of understanding (MOU) with the local Community Mental Health Program (CMHP) in Applicant’s Region by beginning of CY 2020, in accordance with ORS 414.153?
      [✓] Yes  [ ] No
      If “no” please provide explanation: ____________________________

   b. Will Applicant develop a comprehensive Behavioral Health plan for Applicant’s Region in collaboration with the Local Mental Health Authority and other Community partners (e.g., education/schools, Hospitals, corrections, police, first responders, Child Welfare, DHS, public health, Peers, families, housing authorities, housing Providers, courts)?
      [✓] Yes  [ ] No
      If “no” please provide explanation: ____________________________

   c. Will Applicant coordinate and collaborate on the development of the Community health improvement plan (CHP) under ORS 414.627 with the local Community Mental Health Program (CMHP) for the delivery of mental health services under ORS 430.630
      [✓] Yes  [ ] No
      If “no” please provide explanation: ____________________________
3. **Provisions of Covered Services – Behavioral Health**

   a. Will Applicant provide services as necessary to achieve compliance with the mental health parity requirements of 42 CFR§ 438, subpart K and ensure that any quantitative treatment limitations (QTLs), or non-quantitative treatment limitations (NQTLs) placed on Medically Necessary Covered Services are no more restrictive than those applied to fee-for-service medically necessary covered benefits, as described in 42 CFR 438.210(a)(5)(i)?
   
   ✔ Yes  ☐ No
   
   If “no” please provide explanation: __________________________________________

   b. Will Applicant assume accountability for Members that are civilly committed and are referred to and enter Oregon State Hospital; be financially responsible for the services for Members on waitlist for Oregon State Hospital after the second year of the Vontract, with timeline to be determined by OHA; and be financially responsible for services for Members admitted to Oregon State Hospital after the second year of the Vontract, with timeline to be determined by OHA?
   
   ✔ Yes  ☐ No
   
   If “no” please provide explanation: __________________________________________

   c. Will Applicant reimburse for covered Behavioral Health services rendered in a primary care setting by a qualified Behavioral Health Provider, and reimburse for covered physical health services in Behavioral Health care settings, by a qualified medical Provider?
   
   ✔ Yes  ☐ No
   
   If “no” please provide explanation: __________________________________________

   d. Will Applicant ensure Members receive services from Non-Participating Providers for Behavioral Health services if those services are not available from Participating Providers or if a Member is not able to access services within the timely access to care standards? Will Applicant remain responsible for coordinating Behavioral Health services with Non-Participating Providers and reimbursing for services?
   
   ✔ Yes  ☐ No
   
   If “no” please provide explanation: __________________________________________

   e. Will Applicant ensure continuity of care throughout episodes of care and provide Intensive Care Coordination and general Care Coordination as specified in the Contract?
   
   ✔ Yes  ☐ No
   
   If “no” please provide explanation: __________________________________________
4. **Covered Services Component – Behavioral Health**

   a. Will Applicant establish written policies and procedures for an emergency response system, including post-stabilization care services and Urgent Services for all Members on a 24-hour, 7-day-a-week basis consistent with OAR 410-141-3140 and 42 CFR 438.114? Will the emergency response system provide an immediate, initial or limited duration response for emergency situations or potential Behavioral Health emergency situations that may include Behavioral Health conditions?

   - [ ] Yes  [ ] No

   If “no” please provide explanation: ________________________________

   b. Will Applicant ensure access to Mobile Crisis Services for all Members in accordance with OAR 309-019-0105, OAR 309-019-0150, 309-019-0242, and 309-019-0300 to 309-019-0320 to promote stabilization in a Community setting rather than arrest, presentation to an Emergency Department, or admission to an Acute psychiatric care facility?

   - [ ] Yes  [ ] No

   If “no” please provide explanation: ________________________________

   c. Will Applicant establish written policies and procedures for a Quality Improvement plan for the emergency response system?

   - [ ] Yes  [ ] No

   If “no” please provide explanation: ________________________________

   d. Will Applicant collaboratively work with OHA and CMHPs to develop and implement plans to better meet the needs of Members in Community integrated settings and to reduce recidivism to Emergency Departments for Behavioral Health reasons?

   - [ ] Yes  [ ] No

   If “no” please provide explanation: ________________________________

   e. Will Applicant work with Hospitals to provide data on Emergency Department (ED) utilization for Behavioral Health reasons and length of time in the ED? Will Applicant develop remediation plans with EDs with significant numbers of ED stays longer than 23 hour?

   - [ ] Yes  [ ] No

   If “no” please provide explanation: ________________________________
f. Will Applicant establish a policy and procedure for developing a management plan for contacting and offering services to each Member who has two or more readmissions to an ED in a six-month period?

[ ] Yes  [ ] No
If “no” please provide explanation: ________________________________

______________________________


g. Will Applicant make a reasonable effort to provide Covered Services on a voluntary basis and consistent with current Declaration for Mental Health Treatment as provided at: http://www.oregon.gov/oha/amh/forms/declaration.pdf in lieu of involuntary treatment?

[ ] Yes  [ ] No
If “no” please provide explanation: ________________________________

______________________________


h. Will Applicant establish written policies and procedures describing the appropriate use of Emergency Psychiatric Holds consistent with ORS 426 and alternatives to involuntary psychiatric care when a less restrictive voluntary service will not meet the Medically Appropriate needs of the Member and the behavior of the Member meets legal standards for the use of an Emergency Psychiatric Hold?

[ ] Yes  [ ] No
If “no” please provide explanation: ________________________________

______________________________


i. Will Applicant assure that any involuntary treatment provided under the Contract is provided in accordance with administrative rule and statute, and coordinate with the CMHP Director in assuring that all statutory requirements are met? Will Applicant also work with the CMHP Director in assigning a civilly committed Member to any placement and participate in circuit court hearings related to planned placements, if applicable?

[ ] Yes  [ ] No
If “no” please provide explanation: ________________________________

______________________________


j. If Applicant identifies a Member, over age 18 with no significant nursing care needs due to a general medical condition, Acute medical condition or physical disorder, is appropriate for Long Term Psychiatric Care (State Facility level of care), will Applicant request a LTPC determination from the OHA LTPC reviewer?

[ ] Yes  [ ] No
If “no” please provide explanation: ________________________________

______________________________
k. If Applicant identifies a Member, age 18 to age 64, with no significant nursing care needs due to a general medical condition, Acute medical condition or physical disorder of an enduring nature, is appropriate for LTPC, will Applicant request a LTPC determination from the applicable HSD Adult Mental Health Services Unit, as described in Procedure for LTPC Determinations for Members 18 to 64, available on the Contract Reports Web Site?

☐ Yes  ☐ No

If “no” please provide explanation: ________________________________

l. If Applicant identifies a Member, age 65 and over, or age 18 to age 64 with significant nursing care needs due to a general medical condition, Acute medical condition or physical disorder of an enduring nature, is appropriate for LTPC, will Applicant request a LTPC determination from the State hospital-NTS, Outreach and Consultation Service (OCS) Team as described in Procedure for LTPC Determinations for Member Requiring Neuropsychiatric Treatment, available on the Contract Reports Web Site?

☐ Yes  ☐ No

If “no” please provide explanation: ________________________________

m. For the Member age 18 and over, will Applicant work with the Member to assure timely discharge and transition from LTPC to the most appropriate, independent and integrated Community-based setting possible consistent with Member choice?

☐ Yes  ☐ No

If “no” please provide explanation: ________________________________

n. Will Applicant authorize and reimburse Care Coordination services, in particular for Members who receive ICC, that are sufficient in amount, duration or scope to reasonably be expected to achieve the purpose for which the services are provided to Members receiving care through licensed Community treatment programs? Will Applicant authorize and reimburse for ICC services, in accordance with standards identified in OAR 410-141-3160-70?

☐ Yes  ☐ No

If “no” please provide explanation: ________________________________

o. Will Applicant ensure that any involuntary treatment provided under the Contract is provided in accordance with administrative rule and statute and coordinate with the CMHP Director in assuring that all statutory requirements are met? Will Applicant work with the CMHP Director in assigning a civilly committed Member to any placement and participate in circuit court hearings related to planned placements, if applicable?

☐ Yes  ☐ No

If “no” please provide explanation: ________________________________
p. Will Applicant provide Acute Inpatient Hospital Psychiatric Care for Members who do not meet the criteria for LTPC?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________

q. Will Applicant ensure that all Members discharged from Acute Care Psychiatric Hospitals are provided a Warm Handoff to a Community case manager, Peer bridger, or other Community provider prior to discharge, and that all such Warm Handoffs are documented?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________

r. Will Applicant ensure that all Members discharged from Acute Care Psychiatric Hospitals have linkages to timely, appropriate behavioral and primary health care in the Community prior to discharge and that all such linkages are documented, in accordance with OAR provisions 309-032-0850 through 309-032-0870?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________

s. Will Applicant ensure all adult Members receive a follow-up visit with a Community Behavioral Health Provider within seven (7) days of their discharge from an Acute Care Psychiatric Hospital?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________

t. Will Applicant reduce readmissions of adult Members with SPMI to Acute Care Psychiatric Hospitals?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________

u. Will Applicant coordinate with system Community partners to ensure Members who are homeless and who have had two or more readmissions to an Acute Care Psychiatric Hospital in a six-month period are connected to a housing agency or mental health agency to ensure these Members are linked to housing in an integrated Community setting, Supported Housing to the extent possible, consistent with the individual’s treatment goals, clinical needs and the individual’s informed choice?  
☑ Yes ☐ No  
If “no” please provide explanation: ________________________________________________________________
v. Will Applicant ensure coordination and appropriate Referral to Intensive Care Coordination to ensure that Member’s rights are met and there is post-discharge support? If Member is connected to ICC coordinator, will Applicant ensure coordination with this person as directed in OAR 410-141-3160-3170?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

w. Will Applicant work with OHA and the CMHPs to ensure that Members who are discharged from Acute Care Psychiatric Hospitals are discharged to housing that meets the individuals’ immediate need for housing and work with Acute Care Psychiatric Hospitals in the development of each individual’s housing assessment?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

x. Will Applicant establish a policy and procedure for developing a management plan for contacting and offering services to each Member who has two (2) or more readmissions to an Acute Care Psychiatric Hospital in a six-month period?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

y. Will Applicant work with OHA, other state agencies, and other state funded or operated entities to identify areas where treatment and services for adult Members with SPMI can be improved?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

z. Will Applicant coordinate services for each adult Member with SPMI who needs assistance with Covered or Non-covered Services?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

aa. Will Applicant provide oversight, Care Coordination, transition planning and management for Members receiving Behavioral Health services, including Mental Health Rehabilitative Services and Personal Care Services, in licensed and non-licensed home and Community-based settings, ensuring that individuals who no longer need placement in such settings are transitioned to a Community placement in the most integrated Community setting appropriate for that person?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________
bb. Will Applicant provide Utilization Review and utilization management, for Members receiving Behavioral Health Services, including Mental Health Rehabilitative Services and Personal Care Services, in licensed and non-licensed home and Community-based settings, ensuring that individuals who no longer need placement in such setting transition to the most integrated Community setting, Supported Housing to the extent possible, consistent with the individual’s treatment goals, clinical needs, and the individual’s informed choice?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________

cc. Will Applicant encourage utilization of Peer-Delivered Services (PDS) and ensure that Members are informed of their benefit to access and receive PDS from a Peer Support Specialist, Peer Wellness Specialist, Family Support Specialist, or Youth Support Specialist as applicable to the Member’s diagnosis and needs?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________

dd. Will Applicant ensure that Members with SPMI receive Intensive Care Coordination (ICC) support in finding appropriate housing and receive coordination in addressing Member’s housing needs?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________

ee. Will Applicant ensure Members with SPMI are assessed to determine eligibility for ACT?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________

ff. Will Applicant ensure ACT services are provided for all adult Members with SPMI who are referred to and eligible for ACT services in accordance with OAR 309-019-0105 and 309-019-0225 through 309-019-0255?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________

gg. Will Applicant ensure additional ACT capacity is created to serve adult Members with SPMI as services are needed?

☑ Yes    □ No
If “no” please provide explanation: __________________________________________
hh. Will Applicant, when ten (10) or more of Applicant’s adult Members with SPMI in Applicant’s Service Area are on a waitlist to receive ACT for more than thirty (30) days, without limiting other Applicant solutions, create additional capacity by either increasing existing ACT team capacity to a size that is still consistent with Fidelity standards or by adding additional ACT teams?

☑ Yes  ☐ No

If “no” please provide explanation: _______________________________________

If Applicant lacks qualified Providers to provide ACT services, will Applicant consult with OHA and develop a plan to develop additional qualified Providers? Will lack of capacity not be a reason to allow individuals who are determined to be eligible for ACT to remain on the waitlist? Will no individual on a waitlist for ACT services be without such services for more than 30 days?

☑ Yes  ☐ No

If “no” please provide explanation: _______________________________________

ii. Will Applicant ensure all denials of ACT services for all adult Members with SPMI are: based on established, evidence-based medical necessity criteria; reviewed, recorded and compiled in a manner that allows denials to be accurately reported out as appropriate or inappropriate; and follow the Notice of Adverse Benefit Determination process for all denials as described in the Contract?

☑ Yes  ☐ No

If “no” please provide explanation: _______________________________________

jj. Will Applicant be responsible for finding or creating a team to serve Members who have appropriately received a denial for a particular ACT team but who meet ACT eligibility standards?

☑ Yes  ☐ No

If “no” please provide explanation: _______________________________________

kk. Will Applicant be responsible for engaging with all eligible Members who decline to participate in ACT in an attempt to identify and overcome barriers to the Member’s participation?

☑ Yes  ☐ No

If “no” please provide explanation: _______________________________________

ll. Will Applicant require that a Provider or care coordinator meets with the Member to discuss ACT services and provide information to support the Member in making an informed decision regarding participation? Will this include a description of ACT services and how to access them, an explanation of the role of the ACT team and how supports can be individualized based on the Member’s self-identified needs, and ways that ACT can enhance a Member’s care and support independent Community living?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

mm. Will Applicant provide alternative evidence-based intensive services if Member continues to decline participation in ACT, which must include coordination with an ICC?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

nn. Will Applicant report the number of individuals referred to ACT, number of individuals admitted to ACT programs, number of denials for the ACT benefit, number of denials to ACT programs, and number of individuals on waitlist by month?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

oo. Will Applicant ensure a Member discharged from OSH who is appropriate for ACT shall receive ACT or an evidence-based alternative?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

pp. Will Applicant document efforts to provide ACT to individuals who initially refuse ACT services, and document all efforts to accommodate their concerns?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

qq. Will Applicant offer alternative evidence-based intensive services for individuals discharged from OSH who refuse ACT services?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________
rr. Will Applicant ensure a Member discharged from OSH who is determined not to meet the level of care for ACT shall be discharged with services appropriate to meet their needs?

[✔] Yes   [ ] No

If “no” please provide explanation: ________________________________

ss. Will Applicant coordinate with system partners as needed regarding Oregon State Hospital discharges for all adult Members with SPMI in accordance with OAR 309-091-0000 through 0050?

[✔] Yes   [ ] No

If “no” please provide explanation: ________________________________

tt. Will Applicant ensure access to Supported Employment Services for all adult Members eligible for these services, in accordance with OAR 309-019-0275 through 309-019-0295? (“Supported Employment Services” means the same as “Individual Placement and Support (IPS) Supported Employment Services” as defined in OAR 309-019-0225.)

[✔] Yes   [ ] No

If “no” please provide explanation: ________________________________

uu. Will Applicant work with local law enforcement and jail staff to develop strategies to reduce contacts between Members and law enforcement due to Behavioral Health reasons, including reduction in arrests, jail admissions, lengths of stay in jails and recidivism?

[✔] Yes   [ ] No

If “no” please provide explanation: ________________________________

vv. Will Applicant work with SRTFs to expeditiously move civilly committed adult Members with SPMI who no longer need placement in an SRTF to a Community placement in the most integrated setting, Supported Housing to the extent possible, consistent with the individual’s treatment goals, clinical needs, and the individual’s informed choice?

[✔] Yes   [ ] No

If “no” please provide explanation: ________________________________
ww. Will Applicant provide Substance Use Disorder (SUD) services to Members, which include outpatient, intensive outpatient, medication assisted treatment including Opiate Substitution Services, residential and detoxification treatment services consistent with OAR Chapter 309, Divisions 18, 19 and 22, and OAR Chapter 415 Divisions 20, and 50?

Yes  No

If “no” please provide explanation: ____________________________________________

xx. Will Applicant comply with Substance Use Disorder (SUD) waiver program designed to improve access to high quality, clinically appropriate treatment for opioid use disorder and other SUDs, upon approval by Centers for Medicare and Medicaid Services (CMS)?

Yes  No

If “no” please provide explanation: ____________________________________________

yy. Will Applicant inform all Members using Culturally Responsive and linguistically appropriate means that Substance Use Disorder outpatient, intensive outpatient, residential, detoxification and medication assisted treatment services, including opiate substitution treatment, are Covered Services consistent with OAR 410-141-3300?

Yes  No

If “no” please provide explanation: ____________________________________________

zz. Will Applicant participate with OHA in a review of OHA provided data about the impact of these criteria on service quality, cost, outcome, and access?

Yes  No

If “no” please provide explanation: ____________________________________________

5. Children and Youth

a. Will Applicant develop and implement cost-effective comprehensive, person-centered, individualized, and integrated Community-based Child and Youth Behavioral Health services for Members, using System of Care (SOC) principles?

Yes  No

If “no” please provide explanation: ____________________________________________

b. Will Applicant utilize evidence-based Behavioral Health interventions for the needs of children 0-5, and their caregivers, with indications of Adverse Childhood Experiences (ACEs) and high complexity?

Yes  No

If “no” please provide explanation: ____________________________________________
c. Will Applicant provide Intensive Care Coordination (ICC) that is Family and youth-driven, strengths based and Culturally Responsive and linguistically appropriate and abide by ICC standards as set forth in Appendix C, Administrative Rules Concept under OHPB #24 and in accordance with the ICC section in the Contract? Will Applicant abide by ICC standards as forth in Appendix C, Administrative Rules Concept, under OHPB #24, and in accordance with the ICC section in the Contract?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________


d. Will Applicant provide services to children, young adults and families of sufficient frequency, duration, location, and type that are convenient to the youth and Family? Will Services alleviate crisis while allowing for the development of natural supports, skill development, normative activities and therapeutic resolution to Behavioral Health disorders and environmental conditions that may impact the remediation of a Behavioral Health disorder?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________


e. Will Applicant adopt policies and guidelines for admission into Psychiatric Residential Treatment Services (PRTS), Psychiatric Day Treatment Services (PDTS) and/or Intensive Outpatient Services and Supports?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________


f. Will Applicant ensure the availability of service, supports or alternatives 24 hours a day/7 days a week to remediate a Behavioral Health crisis in a non-emergency department setting?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________


g. Will Applicant encourage utilization of Peer-Delivered Services (PDS) and ensure that Members are informed of their benefit to access and receive PDS from a Peer Support Specialist, Peer Wellness Specialist, Family Support Specialist, or Youth Support Specialist as applicable to the Member’s diagnosis and needs?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________
h. If Applicant identifies a Member is appropriate for LTPC Referral, will Applicant request a LTPC determination from the applicable HSD Child and Adolescent Mental Health Specialist, as described in Procedure for LTPC Determinations for Members 17 and Under, available on the Contract Reports Web Site?

Yes    No

If “no” please provide explanation: ____________________________

i. Will Applicant arrange for the provision of non-health related services, supports and activities that can be expected to improve a Behavioral Health condition?

Yes    No

If “no” please provide explanation: ____________________________

j. Will Applicant coordinate admissions to and discharges from Acute Inpatient Hospital Psychiatric Care and Sub-Acute Care for Members 17 and under, including Members in the care and custody of DHS Child Welfare or OYA? For a Member 17 and under, placed by DHS Child Welfare through a Voluntary Placement Agreement (CF 0499), will Applicant also coordinate with such Member’s parent or legal guardian?

Yes    No

If “no” please provide explanation: ____________________________

k. Will Applicant ensure a CANS Oregon is administered to a Member who is a child or youth and the data is entered into OHA approved data system according to the eligibility and timeline criteria in the Contract?

Yes    No

If “no” please provide explanation: ____________________________

l. Will Applicant have funding and resources to implement, to fidelity, Wraparound Services?

Yes    No

If “no” please provide explanation: ____________________________

m. Will Applicant enroll all eligible youth in Wraparound and place no youth on a waitlist?

Yes    No

If “no” please provide explanation: ____________________________
n. Will Applicant screen all eligible youth with a Wraparound Review Committee in accordance with Wraparound Services as described in the OHA System of Care Wraparound Initiative (SOCWI) guidance document found at the link below and in Wraparound Service OARs? http://www.oregon.gov/oha/hsd/amh/pages/index.aspx.

☑ Yes □ No
If “no” please provide explanation: ____________________________________________

o. Will Applicant establish and maintain a functional System of Care in its Service Area in accordance with the Best Practice Guide located at https://www.pdx.edu/ccf/best-practice-guide including a Practice Level Workgroup, Advisory Committee and Executive Council with a goal of youth and Family voice representation to be 51 percent?

☑ Yes □ No
If “no” please provide explanation: ____________________________________________

p. Will Applicant have a functional SOC governance structure by the beginning of CY 2020 that consists of a practice level work group, advisory council, and executive council?

☑ Yes □ No
If “no” please provide explanation: ____________________________________________

q. By end of CY 2020, will Applicant have written Charters and new Member handbooks for Practice Level Work group, Advisory Council and Executive Council?

☑ Yes □ No
If “no” please provide explanation: ____________________________________________

G. Cost and Financial Attestations (Attachment 12)

1. Rates

Does Applicant accept the CY 2020 Rate Methodology appended to Attachment 12?

☑ Yes □ No
If “no” please provide explanation: ____________________________________________

2. Evaluate CCO performance to inform CCO-specific profit margin

a. Does Applicant agree to performance and efficiency evaluation being used to set profit margins in CCO capitation rates?

☑ Yes □ No
If “no” please provide explanation: ____________________________________________
b. Does Applicant agree to accept the CCO 2.0 capitation rate methodology as described in the Oregon CY20 Procurement Rate Methodology document and also accept the performance evaluation methodology and its use in setting CCO-specific profit margins?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________

c. Does Applicant agree to report additional data as needed to inform the performance evaluation process, including data on utilization of Health-Related Services?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________

d. Is Applicant willing to have OHA use efficiency analysis to support managed care efficiency adjustments that may result in adjustments to the base data used in capitation rate development to further incentivize reductions in Waste in the system?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________

3. **Qualified Directed Payments to Providers**

a. Is Applicant willing to make OHA-directed payments to certain Hospitals within five Business Days after receipt of a monthly report prepared and distributed by OHA?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________

b. Is Applicant willing to report to OHA promptly if it determines payments to Hospitals will be significantly delayed?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________

c. Is Applicant willing to exclude the portion of OHA-directed payments for provider tax repayment when negotiating alternative or Value-Based Payment reimbursement arrangements?

☑ Yes  ☐ No

If “no” please provide explanation: ________________________________

________________________________________________________________
d. Is Applicant willing to provide input and feedback to OHA on the selection of measures of quality and value for OHA-directed payments to Providers?

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________

4. Quality Pool Operations and Reporting

a. Does Applicant agree to having a portion of capitation withheld from monthly Capitation Payment and awarded to the Applicant based on performance on metrics based on the Quality Incentive Pool program?

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________

b. Does Applicant agree to report to OHA separately on expenditures incurred based on Quality Pool revenue earned?

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________

c. Does Applicant agree to report on the methodology it uses to distribute Quality Pool earnings to Providers, including SDOH-HE partners and public health partners?

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________

d. Does Applicant have a plan to evaluate contributions made by SDOH-HE and public health partners toward the achievement of Quality Pool metrics?

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________

5. Transparency in Pharmacy Benefit Management Contracts

a. Will Applicant select and contract with the Oregon Prescription Drug Program to provide Pharmacy Benefit Management services? If yes, please skip to section 5. If not, please answer parts b-f of this question.

[ ] Yes  [ ] No

If “no” please provide explanation: ________________________________
b. Will Applicant use a pharmacy benefit manager that will provide pharmacy cost passthrough at 100% and pass back 100% of rebates received to Applicant?
   □ Yes □ No
   If “no” please provide explanation: __________________________________________

c. Will Applicant separately report to OHA any and all administrative fees paid to its PBM?
   □ Yes □ No
   If “no” please provide explanation: __________________________________________

d. Will Applicant require reporting from PBM that provides paid amounts for pharmacy costs at a claim level?
   □ Yes □ No
   If “no” please provide explanation: __________________________________________

e. Will Applicant obtain market check and audits of their PBMs by a third party on an annual basis, and share the results of the market check with the OHA?
   □ Yes □ No
   If “no” please provide explanation: __________________________________________

f. Will Applicant require its PBM to remain competitive with enforceable contract terms and conditions driven by the findings of the annual market check and report auditing?
   □ Yes □ No
   If “no” please provide explanation: __________________________________________

6. **Alignment Preferred Drug Lists (PDLs) and Prior Authorization Criteria**

   a. Will Applicant partner with OHA on the goal of increasing the alignment of CCO preferred drug lists (PDL) with the Fee-For-Service PDL set every year by OHA?
      □ Yes □ No
      If “no” please provide explanation: __________________________________________

   b. Will Applicant align its PDL in any and all categories of drugs as recommended by the P&T committee and as required by OHA?
      □ Yes □ No
      If “no” please provide explanation: __________________________________________
c. Will Applicant post online in a publicly accessible manner the Applicant’s specific PDL with coverage and Prior Authorization criteria in a format designated by OHA and update the posting concurrently or before any changes to the PDL or coverage/PA criteria become effective?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

7. Financial Reporting Tools and Requirements

a. Is Applicant willing to partake of all financial, legal and technological requirements of the National Association of Insurance Commissioners (NAIC) in whatever capacity necessary to file its financial information with OHA under NAIC standards?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

b. Will Applicant report its required financial information to OHA on the NAIC’s Health Quarterly and Annual Statement blank (“Orange Blank”) through the NAIC website as described in this RFA, under NAIC standards and instructions?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

c. Will Applicant report its financial information to OHA using Statutory Accounting Principles (SAP), subject to possible exemption from SAP for 2020 as described in this RFA?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

d. Will Applicant file the financial reports described in this RFA, including Contract Exhibit L and supplemental schedules with the instructions referenced in this RFA?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________

e. Is Applicant willing to resubmit its pro forma financial statements for three years starting in 2020, modified to reflect the Enrollment expected assuming other CCOs that may operate in Applicant’s Service Area?

☑ Yes  ☐ No

If “no” please provide explanation: ____________________________________________
f. Does Applicant commit to preparing and filing a Risk Based Capital (RBC) report each year based on NAIC requirements and instructions?
   
   ☑ Yes  ☐ No
   
   If “no” please provide explanation: ____________________________________________

f. Is Applicant willing to submit quarterly financial reports including a quarterly estimation of RBC levels to ensure financial protections are in place during the year?
   
   ☑ Yes  ☐ No
   
   If “no” please provide explanation: ____________________________________________

h. Is Applicant willing to have its RBC threshold evaluated quarterly using a proxy calculation?
   
   ☑ Yes  ☐ No
   
   If “no” please provide explanation: ____________________________________________

i. If Applicant’s estimated RBC falls below the minimum required percentage based on the quarterly estimation, is Applicant willing to submit a year-to-date financial filing and full RBC evaluation?
   
   ☑ Yes  ☐ No
   
   If “no” please provide explanation: ____________________________________________

8. Accountability to Oregon’s Sustainable Growth Targets

   a. Does Applicant commit to achieving a sustainable growth in expenditures each calendar year (normalized by membership) that matches or is below the Oregon 1115 Medicaid demonstration project waiver growth target of 3.4%?
      
      ☑ Yes  ☐ No
      
      If “no” please provide explanation: ____________________________________________

   b. Does Applicant similarly commit to making a good faith effort towards achievement of future modifications to the growth target in the waiver?
      
      ☑ Yes  ☐ No
      
      If “no” please provide explanation: ____________________________________________

   c. Does Applicant agree that OHA may publicly report on CCO performance relative to the sustainable growth rate targets (normalized for differences in membership)?
      
      ☑ Yes  ☐ No
      
      If “no” please provide explanation: ____________________________________________
d. Does Applicant agree that OHA may institute a Corrective Action Plan, that may include financial penalties, if a CCO does not achieve the expenditure growth targets based on the current 1115 Medicaid waiver?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

9. Potential Establishment of Program-wide Reinsurance Program in Future Years
a. Will Applicant participate in any program-wide reinsurance program that is established in years after 2020 consistent with statutory and regulatory provisions that are enacted?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

b. Will Applicant use private reinsurance contracts on only an annual basis so as to ensure ability to participate in state-run program if one is launched at the start of a calendar year?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

c. Does Applicant agree that implementation of program-wide reinsurance program will reduce capitation rates in years implemented as a result of claims being paid through reinsurance instead of with capitation funds?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

10. CCO Solvency Standards and OHA Tools to Regulate and Mitigate Insolvency Risk
a. Is Applicant willing to have its financial solvency risk measured by Risk Based Capital (RBC) starting in 2021?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________

b. Is Applicant willing to achieve a calculated RBC threshold of 200% by end of Q3 of 2021 and thereafter to maintain a minimum RBC threshold of 200%?

☑ Yes ☐ No

If “no” please provide explanation: ____________________________________________
c. Is Applicant willing to report to OHA promptly if it determines that its calculated RBC value is or is expected to be below 200%?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________

d. Is Applicant willing to report to OHA promptly if it determines that its actual financial performance departs materially from the pro forma financial statements submitted with this Application?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________

e. Will Applicant maintain the required restricted reserve account per Contract?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________

11. **Encounter Data Validation Study**

a. Is Applicant willing to perform regular chart reviews and audits of its encounter claims to ensure the Encounter Data accurately reflects the services provided?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________

b. Is Applicant willing to engage in activities to improve the quality and accuracy of Encounter Data submissions?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________

H. **Member Transition Plan** (Attachment 16)

1. Is Applicant willing to faithfully execute its Member Transition Plan as described in Attachment 16?

Yes ☑ No ☐

If “no” please provide explanation: ________________________________

________
Attachment 14 — Assurances

Applicant Name: InterCommunity Health Plans dba InterCommunity Health Network Coordinated Care Organization

Authorizing Signature: [Signature]

Printed Name: Kelley Kaiser

Instructions: Assurances focus on the Applicant’s compliance with federal Medicaid law and related Oregon rules. For each assurance, Applicant will check “yes,” or “no.” A “yes” answer is normal, and an explanation will be furnished if Applicant’s response is “no”. Applicant must respond to all assurances. If an assurance has more than one question and Applicant’s answer is “no” to any question, check “no” and provide an explanation. These assurances must be signed by a representative of Applicant.

Each assurance is effective starting at the time of Readiness Review and continuing throughout the term of the Contract.

1. **Emergency and Urgent Care Services.** Will Applicant have written policies and procedures, and oversight and monitoring systems to ensure that emergency and urgent services are available for all Members on a 24-hour, 7-days-a-week basis? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? (See 42 CFR 438.114 and OAR 410-141-3140)

   - [ ] Yes
   - [ ] No

   If “no” please provide explanation: ____________________________________________

2. **Continuity of Care.** Will Applicant implement written policies and procedures that ensure a system for the coordination of care and the arrangement, tracking and documentation of all Referrals and Prior Authorizations to other Providers? Will Applicant follow Intensive Care Coordination (ICC)/ENCC standards and Care Coordination standards, including transition meetings, as directed in OAR 410-141-3170? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.208 and OAR 410-141-3160]

   - [ ] Yes
   - [ ] No

   If “no” please provide explanation: ____________________________________________

3. Will Applicant implement written policies and procedures that ensure maintenance of a record keeping system that includes maintaining the privacy and security of records as required by the Health Insurance Portability and Accountability Act (HIPAA), 42 USC § 1320-d et seq., and the federal regulations implementing the Act, and complete Clinical Records that document the care received by Members from the Applicant’s Primary Care and Referral Providers? Will Applicants communicate these policies and procedures to Participating Providers, regularly monitor Participating Providers’ compliance with these policies and procedures and take any Corrective Action necessary to ensure Participating Provider compliance? Will Applicants document all monitoring and Corrective Action activities? Will such policies and procedures will ensure that records are secured, safeguarded and stored in accordance with applicable Law? [See 45 CFR Parts 160 – 164, 42 CFR 438.242, ORS 414.679 and OAR 410-141-3180]

   - [ ] Yes
   - [ ] No

   If “no” please provide explanation: ____________________________________________
4. Will Applicant have an ongoing quality performance improvement program for the services it furnishes to its Members? Will the program include an internal Quality Improvement program based on written policies, standards and procedures that are designed to achieve through ongoing measurements and intervention, significant improvement, sustained over time, in clinical care and non-clinical care areas and that are expected to have a favorable effect on health outcomes and Member satisfaction? The improvement program will track outcomes by race, ethnicity and language. The Applicant will communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance. [See OAR 410-141-0200]

☑️ Yes ☐ No

If “no” please provide explanation: ____________________________________________________________________________________________________

5. Will Applicant make Coordinated Care Services accessible to enrolled Members? Will Applicant not discriminate between Members and non-Members as it relates to benefits to which they are both entitled including reassessment or additional screening as needed to identify exceptional needs in accordance with OAR 410-141-3160 through 410-141-3170? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance.? [See 42 CFR 438.206 to 438.210; and OAR 410-141-3220]

☑️ Yes ☐ No

If “no” please provide explanation: ____________________________________________________________________________________________________

6. Will Applicant have written procedures approved in writing by OHA for accepting, processing, and responding to all complaints and Appeals from Members or their Representatives that are consistent with Exhibit I of the Appendix B “Sample Contract”? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.228, 438.400 – 438.424]

☑️ Yes ☐ No

If “no” please provide explanation: ____________________________________________________________________________________________________

7. Will Applicant develop and distribute OHA-approved informational materials to Potential Members that meet the language and alternative format requirements of Potential Members? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.10; OAR 410-141-3280]

☑️ Yes ☐ No

If “no” please provide explanation: ____________________________________________________________________________________________________

Attachment 14: Assurances
8. Will Applicant have an on-going process of Member education and information sharing that includes appropriate orientation to the Applicant provided in the Member handbook or via health education, about the availability of intensive Care Coordination for Members who are aged, blind and/or disabled, or are part of a prioritized population, and appropriate use of emergency facilities and urgent care? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.10; and OAR 410-141-3300]

Yes  ☑  No

If “no” please provide explanation: ____________________________________________________________

9. Will Applicant have written policies and procedures to ensure Members are treated with the same dignity and respect as other patients who receive services from the Applicant that are consistent with Appendix B, Core Contract? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.100, ORS 414.635 and OAR 410-141-3320]

Yes  ☑  No

If “no” please provide explanation: ____________________________________________________________

10. Will Applicant provide Intensive Care Coordination (otherwise known as Exceptional Needs Care Coordination or ENCC) to Members who are Aged, Blind or Disabled; Members with high health needs or multiple chronic conditions; Members receiving Medicaid-funded long-term care or long-term services and supports or receiving Home and Community-Based Services (HCBS) under the state’s 1915(i), 1915(j), or 1915(k) State Plan Amendments or the 1915(c) HCBS waivers, or Behavioral Health priority populations in accordance with OAR 410-141-3170? Will Applicant ensure that Prioritized Populations, who sometimes have difficulty with engagement, are fully informed of the benefits of Care Coordination? Will Applicant ensure that their organization will be Trauma Informed by January 1, 2020? Will Applicant utilize evidence-based outcome measures? Will Applicant ensure that Members who meet criteria for ENCC receive contact and service delivery as required in OAR 410-141-3170? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.208]

Yes  ☑  No

If “no” please provide explanation: ____________________________________________________________
11. Will Applicant maintain an efficient and accurate billing and payment process based on written policies, standards, and procedures that are in accordance with accepted professional standards, OHP Administrative Rules and OHA Provider Guides? Will Applicant and its Providers or Subcontractors will not hold Members responsible for debt incurred by the Applicant or by Providers if the entity becomes insolvent? Will Applicant have monitoring systems in operation and review the operations of these systems on a regular basis. The Applicant will communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 447.46]

☑ Yes   ☐ No

If “no” please provide explanation: ____________________________________________

12. Will Applicant participate as a trading partner of the OHA in order to timely and accurately conduct electronic transactions in accordance with the HIPAA electronic transactions and security standards? Has Applicant executed necessary trading partner agreements and conducted business-to-business testing that are in accordance with accepted professional standards, OHP Administrative Rules and OHA Provider Guides? Will Applicant have monitoring systems in operation and review the operations of these systems on a regular basis? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 45 CFR Part 162; OAR 943-120-0100 to 943-120-0200]

☑ Yes   ☐ No

If “no” please provide explanation: ____________________________________________

13. Will Applicant maintain an efficient and accurate system for capturing Encounter Data, timely reporting the Encounter Data to OHA, and regularly validating the accuracy, truthfulness and completeness of that Encounter Data based on written policies, standards, and procedures that are in accordance with accepted professional standards, CCO and OHP Administrative Rules and OHA Provider Guides? Will Applicant have monitoring systems in operation and review the operations of these systems on a regular basis? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.242; and the Contract]

☑ Yes   ☐ No

If “no” please provide explanation: ____________________________________________

14. Will Applicant maintain an efficient and accurate process that can be used to validate Member Enrollment and Disenrollment based on written policies, standards, and procedures that are in accordance with accepted professional standards, OHP Administrative Rules and OHA Provider Guides? Will Applicant have monitoring systems in operation and review the operations of these systems on a regular basis? Will Applicant communicate these policies and procedures to Providers, regularly monitor Providers’ compliance and take any Corrective Action necessary to ensure Provider compliance? [See 42 CFR 438.242 and 438.604; and Contract]

☑ Yes   ☐ No

If “no” please provide explanation: ____________________________________________
Assurances of Compliance with Medicaid Regulations

Item 15 of this Attachment 14 has ten assurances of Compliance with Medicaid Regulations. These Assurances address specific Medicaid regulatory requirements that must be met in order for the Applicant to be eligible to contract as a CCO. For purposes of this section and the federal Medicaid regulations in 42 CFR Part 438, a CCO falls within the definition of a “managed care organization” in 42 CFR 438.2. This section asks the Applicant to provide a brief narrative of how the Applicant meets each applicable Assurance. The Applicant must provide supporting materials available to the OHA upon request.

Please describe in a brief narrative how Applicant meets the standards and complies with the Medicaid requirements cited in the Medicaid Assurances in Item 15:

As evidenced by IHN-CCO's Policies and Procedures and demonstrated in the current CCO contract, IHN-CCO meets the standards of all ten assurances below.

   IHN-CCO meets the standards and complies by ensuring all services are available and accessible to enrollees by maintaining the delivery network, furnishing timely, culturally considerate, and accessible services.

b. Medicaid Assurance #2 – 42 CFR § 438.207 Assurances of adequate capacity and services.
   IHN-CCO meets the standards and complies through the delivery system network documentation, review, and certification.

c. Medicaid Assurance #3 – 42 CFR § 438.208 Coordination and continuity of care.
   IHN-CCO meets the standards and complies through care coordination with additional services for members with special health care needs.

d. Medicaid Assurance #4 – 42 CFR § 438.210 Coverage and authorization of services.
   IHN-CCO meets the standards and complies by thoroughly monitoring according to the prioritized list to ensure that benefits are aligned. IHN-CCO communicates prior authorization and appeals and grievance information and requirements to members through various materials, our appeals and grievances process, and through the process care coordination and management of our members.

   IHN-CCO meets the standards and complies through the credentialing requirements. IHN-CCO is an equal opportunity employer with nondiscrimination policies and procedures.

   IHN-CCO meets the standards and complies with all confidentiality rules and regulations.

g. Medicaid Assurance #7 – 42 CFR § 438.228 Grievance and Appeal systems.
   IHN-CCO meets the standards and complies through the grievance and appeal system.

h. Medicaid Assurance #8 – 42 CFR § 438.230 Subcontractual relationships and delegation.
   IHN-CCO meets the standards and complies through the credentialing requirements. IHN-CCO is a equal opportunity employer with nondiscrimination policies and procedures.

i. Medicaid Assurance #9 – 42 CFR § 438.236 Practice guidelines.
   IHN-CCO meets the standards and complies with all subcontractor and delegation requirements.

j. Medicaid Assurance #10 – 42 CFR § 438.242 Health information systems.
   IHN-CCO meets the standards and complies through with the health information system rules and regulations including encounter data and submission requirements.
Attachment 15 — Representations

Applicant Name: InterCommunity Health Plans, Inc. dba InterCommunity Health Network Coordinated Care Organization

Authorizing Signature: ____________________________

Printed Name: Kelley Kaiser

Instructions: For each representation, Applicant will check “yes,” or “no.” On representations, no particular answer is normal, and an explanation will be furnished in all cases. Applicant must respond to all representations.

These representations must be signed by a representative of Applicant.

Each representation is effective starting at the time of Readiness Review and continuing throughout the term of the Contract.

1. Will Applicant have an administrative or management contract with a contractor to manage/handle all staffing needs with regards to the operation of all or a portion of the CCO program?

   □ Yes   □ No

   Explanation: IHN-CCO has an administrative services contract with Samaritan Health Services to provide administrative staffing, human resources, information systems, and legal.

2. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the systems or information technology to operate the CCO program for Applicant?

   □ Yes   □ No

   Explanation: IHN-CCO has an administrative services contract with Samaritan Health Services to provide a portion of the systems or information technology for IHN-CCO.

3. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the claims administration, processing and/or adjudication functions?

   □ Yes   □ No

   Explanation: All medical claims are administered, processed, and adjudicated by IHN-CCO. Dental claims are administered, processed, and adjudicated by contracted Dental Care Organizations. IHN-CCO’s Pharmacy Benefit Manager (PBM) administers, processes, and adjudicates pharmacy claims.

4. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the Enrollment, Disenrollment and membership functions?

   □ Yes   □ No

   Explanation: IHN-CCO performs all enrollment, disenrollment, and membership functions.
5. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the credentialing functions?

☑ Yes  ☐ No

Explanation: IHN-CCO contracts with Samaritan Health Services and independent provider associations through administrative agreements to perform a portion of provider credentialing functions.

6. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the utilization operations management?

☑ Yes  ☐ No

Explanation: IHN-CCO performs all utilization management except for dental care organizations that perform their own utilization management.

7. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the Quality Improvement operations?

☐ Yes  ☑ No

Explanation: IHN-CCO performs all Quality Improvement operations.

8. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of its call center operations?

☐ Yes  ☑ No

Explanation: IHN-CCO performs all call center operations.

9. Will Applicant have an administrative or management contract with a contractor to perform all or a portion of the financial services?

☑ Yes  ☐ No

Explanation: IHN-CCO contracts with Samaritan Health Services to perform a portion of the Accounting services, but retains all other financial services.
10. Will Applicant have an administrative or management contract with a contractor to delegate all or a portion of other services that are not listed?
   □ Yes   ✔ No
   Explanation: All other services are administered or performed by IHN-CCO.

11. Will Applicant have contracts with related entities, contractors and Subcontractors to perform, implement or operate any aspect of the CCO operations for the CCO Contract, other than as disclosed in response to representation 1-10 above?
   □ Yes   ✔ No
   Explanation: No other services will be contracted to other entities, contractors, and/or subcontractors to perform.

12. Other then VBP arrangements with Providers, will Applicant sub-capitate any portion of its Capitation Payments to a risk-accepting entity (RAE) or to another health plan of any kind?
   □ Yes   ✔ No
   Explanation: No portion of the Capitation Payments are sub-capitated to a RAE or other health plan of any kind.

13. Does Applicant have a 2019 CCO contract? Is Applicant a risk-accepting entity or Affiliate of a 2019 CCO? Does Applicant a management services agreement with a 2019 CCO? Is Applicant under common management with a 2019 CCO?
   ✔ Yes   □ No
   Explanation: IHN-CCO has a current Health Plan Services Contract (#143116) with the Oregon Health Authority.
Attachment 16: Member Transition Plan

Coordination between Transferring and Receiving CCOs

2a. OHA expects the Transferring and Receiving CCOs to work together and cooperate to achieve a successful transition for Members who change CCO during the Open Enrollment period. This section should describe the Applicant’s plan to coordinate with other CCOs as the Transferring and/or Receiving CCO. This include but is not limited to establishing working relationships and agreements between CCOs to facilitate data sharing and validation, Member Prior Authorization history, Provider matching and Assignment, continuity of care and customer support.

IHN-CCO will work with other CCOs to achieve a successful transition for Members who change CCO’s during the Open Enrollment period, or anytime an Oregon Health Plan member moves to or from our service area. Oregon Health Plan benefits and coverage are the same regardless of CCO enabling for continuity of information between outgoing and receiving CCO.

IHN-CCO’s Medical Management department is primarily responsible to monitor care management and utilization management programs and services to coordinate, evaluate and manage the delivery of health care. The scope of the medical management program includes all physical, oral, behavioral and social care delivery across the continuum of care and across CCOs.

Transferring CCOs with Outgoing Members

2b. This section of the Member Transition Plan is required if Applicant (1) has a 2019 CCO contract, (2) is a risk-accepting entity or Affiliate of a 2019 CCO, or (3) has a management services agreement with or is under common management with a 2019 CCO.

IHN-CCO has a 2019 CCO contract.

2b(1). Data Sharing: This section should describe the plan to compile and share electronic health information regarding the Member, their treatment and services. Include data elements to be shared, formatting and transmittal methods, and staffing/resource plans to facilitate data transfers to the Receiving CCO(s).

IHN-CCO will compile, share electronic health information regarding the Member, their treatment and services to the Receiving CCO. For mass Oregon Health Plan member transfers, IHN-CCO recommends the use of standard formats since most Administrative systems can generate and receive these formats. IHN-CCO can generate the following file formats:

- EDI (Electronic Data Interchange) ANSI (American National Standards Institute) X12 834 Benefit Enrollment and Maintenance
- EDI ANSI X12 837 Health Care Claim (historical)
- EDI ANSI X12 278 Health Care Services Review Information
- CDA (Clinical Document Architecture) Continuity of Care Document (CCD)
- NCPDP (National Council for Prescription Drug Programs)
If the Receiving CCO cannot accept the above formats, we can provide proprietary formatted files for each subject (i.e., Member Demographics, Primary Care Physician (PCP) Affiliation, Authorizations, Claims). IHN-CCO can provide Electronic Health Record (EHR) information via a web interface, CareTeam Link, which is the member’s longitudinal health record. For pharmacy and non-emergent transportation, IHN-CCO will work with its partners to ensure this data is collected and distributed to the Receiving CCO. IHN-CCO can transfer existing medication prior-authorizations to the Receiving CCO and would work with them on a defined standard.

IHN-CCO can host an SFTP (Secure File Transfer Protocol) site or retrieve from an externally hosted SFTP site to enable to secure transferring of data. The files will be placed into the SFTP directory for retrieval by the Receiving CCO. For CCD transmission, IHN-CCO can call an API (Application Programming Interface) to transmit the records.

2b(2). Provider Matching: This section should describe the methods for identifying Members’ primary care and Behavioral Health home Providers and any specialty Providers and transmitting that information to the Receiving CCO(s).

IHN-CCO can provide the Members’ primary care, behavioral health, oral health and specialty providers to the Receiving CCO. Using a combination of persisted relationships and claims data, we can apply calculation rules to derive a list of primary care, behavioral health and specialty providers the member has been affiliated with. Example calculation rules we can apply is if the member has seen the provider at least twice in a 90-day period, affiliate this provider as a specialty provider. The providers’ NPI (National Provider Identifier), Medicaid Identification Number, care affiliation and other elements can be provided to ensure orderly transition to keep the members connected to the care they need during such time the transition period has occurred.

2b(3). Continuity of Care: This section should describe plans to support Member continuity of care, including but not limited to Prior Authorizations, prescription medications, medical Case Management Services, and Transportation. This section should include all Members regardless of health status with specific details to address those Members at risk as described in Section (1).

IHN-CCO will support member continuity of care, including but not limited to prior authorizations, prescription medications, medical case management services and transportation by working with the member’s care team to come up with a transition plan to ensure the continuity of care.

Upon notification of a member transitioning from IHN-CCO a primary point of contact care coordinator will be assigned to support the transition. A comprehensive screening and assessment checklist will be completed by the care coordinator to assist receiving CCO to create a person-centered transition plan. Components of the checklist will include:

- Identification of care team including current providers and support systems
- Prior Authorizations including servicing providers, location and duration
- Prescription needs
- Transportation
• Coordination with long term care/long term community services and supports, mental health, developmental diversity, and/or Department of Human Services/child welfare services
• Timeframe of transition
• Development of person-centered care plan

The care coordinator will reach out directly to the member or designee to confirm the member’s care team. The care team will include the point of contact for the receiving CCO. A care team meeting will be scheduled promptly to identify action items and assignments. The care coordinator will stay in close contact with the member or designee, the primary provider, support system and receiving CCO. Communication will be completed telephonically, via secure email or through SFTP if applicable.

All members transitioning to another CCO will be supported by a care coordinator regardless of health status. For those identified as high-risk the care coordinator will ensure the plan is individualized and properly and seamlessly addresses their complex needs. Care management and coordination plans will be provided directly to the point of contact for the receiving CCO.

Members who are supported by Long Term Care/Long Term Community Services and Supports, Mental Health, Developmental Diversity, Department of Human Services/Child Welfare Services and/or identified as high risk will be identified as an urgent transition. Urgent transitions will be prioritized by the care coordinator to ensure there are no break downs to care and services.

Member/Provider Outreach for Transition Activities

2c. This section should describe plans to work directly with outgoing Members and their Providers to perform Warm Handoff activities for high-need Members and other specific Member groups identified as requiring additional support during the transition. This includes, but is not limited to, helping Members and Providers understand the coverage in place and the plan for transition of care, monitoring the transition of care to identify and address issues during the transition process, and collaborating with stakeholders and the Receiving CCO to ensure a seamless transition of care for the Member.

IHN-CCO will work directly with the outgoing members and their providers to engage in warm handoff activities for high-need members, and other members who may suffer serious detriment to their physical and mental health or who are at-risk of hospitalization of institutionalization. IHN-CCO’s Behavioral Health Care Manager oversees the care coordination and transition planning for members receiving mental health services. IHN-CCO’s Behavioral Health Specialist will coordinate behavioral health care services and support to ensure continuity of the member’s care. For members who may suffer serious detriment to their mental health, IHN-CCO’s Behavioral Health Care Manager will work with IHN-CCO’s Intensive Care Coordinator (ICC) to ensure a collaborative and holistic approach to coordinating and transitioning all care for the member.
The care coordinator will continue to follow the transition and work closely with the receiving CCO to support and monitor the transition from IHN-CCO. The IHN-CCO internal care team will continue to meet and evaluate progress and address needs until the transition has been complete. The care coordinator will focus on helping members and providers understand the coverage in place and the plan for transition of care. The care coordinator will monitor the transition of care to identify and address issues during the transition process and collaborate with stakeholders and the Receiving CCO to ensure a seamless transition of care for the Member.

Receiving CCOs with Incoming Members

2d(1). Data Sharing: This section should describe the data reception plan for incoming Members, including but not limited to receiving and storing data files, front-end validation, system entry, output validation, and distribution.

IHN-CCO will accept electronic health information regarding the Member, their treatment and services from the Receiving CCO. For mass Oregon Health Plan member transfers, IHN-CCO recommends the use of standard formats since most Administrative systems can generate and receive these formats. IHN-CCO can accept the following file formats:
- EDI ANSI X12 834 Benefit Enrollment and Maintenance
- EDI ANSI X12 837 Health Care Claim (historical)
- EDI ANSI X12 278 Health Care Services Review Information
- CDA Continuity of Care Document
- NDPCP

If the Receiving CCO cannot generate the above formats, we can accept an agreed upon proprietary file format for each subject (i.e., Pharmacy Prior Authorizations, Member Demographics, PCP Affiliation, Authorizations, Claims). IHN-CCO can accept EHR information in a CCD format and import into the member’s longitudinal health record. IHN-CCO can host an SFTP site or retrieve from an externally hosted SFTP site to enable to secure transferring of data. The data files will be moved into IHN-CCO’s network for processing. For CCD transmission, IHN-CCO can set up an endpoint to call an API to transmit the records. Please note, IHN-CCO currently has a health information exchange, that connects to many networks to build the patient profile. During transition discussions, this can be examined to determine if the use of these networks can minimize the data transfer from the Sending CCO.

Upon transition discussions, IHN-CCO would work with the Sending CCO to determine the best course of action to accept the data and process it in a timely fashion as to not disrupt the continuity of care. Incoming and outgoing data processing following IHN-CCO’s Software Validation process. In general, this process includes unit testing, integration testing, systems testing, acceptance testing, and production validation as seen in the below visual.

Through this process, the product is then disseminated as appropriate. For example, for incoming members who may suffer serious detriment to their physical and mental health or who are at-risk of hospitalization of institutionalization, a member roster will be immediately disseminated to our Care Management staff for immediate action.
2d(2). Provider Matching: This section should describe the methods for identifying Members’ primary care and Behavioral Health home Providers and any specialty Providers, and enrolling Members with their assigned Providers. This includes contingency plans for assigning Members to appropriate Providers if they cannot be enrolled with the Provider from the Transferring CCO.

IHN-CCO expects the Sending CCO to provide the members’ care provider information. IHN-CCO will honor the relationship according to OAR 410-141-3061 and determine how best to transition them to an IHN-CCO contracted provider in their service area. Their needs will be considered to ensure we match them with a provider that can provide the services to sustain the care they’ve received thus far.

2d(3). Continuity of Care: This section should describe plans to support Member continuity of care, including but not limited to honoring Prior Authorizations, prescription medications, and Treatment Plans from the Transferring CCO, medical Case Management Services, and Transportation. This section should address the approach for all Members regardless of health status with specific details to address those persons described in Section (1). As the receiving CCO, the plan should address how the Receiving CCO will ensure access to all medically necessary services for Members at risk of serious detriment to their physical and mental health, hospitalization, or institutionalization.

IHN-CCO will support member continuity of care, including but not limited to prior authorizations, prescription medications, medical case management services and transportation by working with the member’s care team to come up with a transition plan to ensure the continuity of care.

Upon notification of a member transitioning to IHN-CCO a primary point of contact care coordinator will be assigned to support the transition. A comprehensive screening and assessment checklist will be completed by the care coordinator to develop a person-centered transition plan. Components of the checklist will include:

- Identification of care team including current providers and support systems
- Prior Authorizations including servicing providers, location and duration
- Prescription needs
- Transportation
• Coordination with long term care/long term community services and supports, mental health, developmental diversity and/or Department of Human Services/Child Welfare services
• Timeframe of transition
• Development of person-centered care plan

The care coordinator will reach out to the current CCOs point of contact. From there, the member or designee will be contacted to confirm member’s care team. A care team meeting will be scheduled promptly to identify action items and assignments. The care coordinator will stay in close contact with the member or designee, the primary provider, support system and sending CCO. Communication will be completed telephonically, via secure email or through SFTP if applicable.

All members transitioning to IHN-CCO will be supported by a care coordinator regardless of health status. For those identified as high-risk the care coordinator will ensure the plan is individualized and properly and seamlessly addresses their complex needs. IHN-CCO will assist the transition of prior authorizations, prescriptions, providers, transportation, care management and care coordination.

Prior Authorizations will be received from the current CCO. They will be reviewed for IHN-CCO authorization requirements which may include type of service, in-network vs. out of network providers and duration. IHN-CCO will honor the plan of care and update our system of record if authorizations are required for IHN-CCO. The care coordinator will assess if member can transition to an in-network provider, however will always ensure care is provided in a non-disruptive and person-centered way.

Transportation for non-emergency medical appointments will be provided by RideLine and the care coordinator will work directly with RideLine to ensure member’s medical transportation needs are addressed. The care coordinator will also evaluate opportunity to receive non-medical transportation assistance if needed.

The IHN-CCO Pharmacy Department will identify a pharmacy services representative to be a part of the member’s care team. Receiving pharmacy claims history from the current CCO will assist the representative in identifying transition needs including implementing an override process if warranted. The representative will work closely with the care coordinator to identify pharmacy of choice and facilitate transfer of prescriptions to an in-network pharmacy.

The care coordinator will assess if member’s providers are in or out of network. If providers are out of network the care coordinator will address with care team if there is opportunity to transition member to an in-network provider. Transition will not happen if it is disruptive to the member’s care and IHN-CCO will facilitate authorization requests if needed.

Care Management and care coordination care plans will be honored by the receiving IHN-CCO care coordinator. Members will be reassessed at the time of transition to determine if member needs additional care management support.
Members who are supported by Long Term Care/Long Term Community Services and Supports, Mental Health, Developmental Diversity, Department of Human Services/Child Welfare Services and/or identified as high risk will be identified as an urgent transition. Urgent transitions will be prioritized by the care coordinator to ensure there are no break downs to care and services.

2d(4). Member/Provider Outreach for Transition Activities: This section should describe plans to work directly with incoming Members and their Providers to perform Warm Handoff activities for high-need Members and other specific Member groups identified as requiring additional support during the transition. This includes, but is not limited to, helping Members and Providers understand the coverage in place and the plan for transition of care, monitoring the transition of care to identify and address issues during the transition process, and collaborating with stakeholders and the Transferring CCO to ensure a seamless transition of care for the Member.

IHN-CCO will work directly with the incoming members and their providers to engage in warm handoff activities for high need members, and other members who may suffer serious detriment to their physical and mental health or who are at-risk of hospitalization of institutionalization. IHN-CCO’s Behavioral Health Care Manager oversees the care coordination and transition planning for members receiving mental health services. IHN-CCO’s Behavioral Health Specialist will coordinate behavioral health care services and support to ensure continuity of the member’s care. For members who may suffer serious detriment to their mental health, IHN-CCO’s Behavioral Health Care Manager will work with IHN-CCO’s Intensive Care Coordinator (ICC) to ensure a collaborative and holistic approach to coordinating and transitioning all care for the member.

Upon enrollment members will receive a welcome packet that explains how to access and use their benefits. The assigned care coordinator will outreach to the member to provide explanation and additional support in accessing benefits if needed.

The care coordinator will continue to follow the transition and work closely with the member and providers to support and monitor the transition to IHN-CCO. The IHN-CCO internal care team will continue to meet and evaluate progress and address needs until the transition has been complete.
RFA Document Section 3.4e Reference Checks

Olalla Center for Children and Families

Contact: Maygen Blessman, Director
Address: 321 SE 3rd Street
        Toledo, Oregon 97391
Phone: (541) 336-2254
Email: maygenb@olallacenter.org
Website: www.olallacenter.org
Length of Partnership: Over 10 years

Olalla Center for Children and Families (Olalla) is a current client firm that can speak to and verify the quality of the work IHN-CCO delivered related to the Work under the Sample Contract. IHN-CCO currently supports Olalla on the Community Roots transformation pilot that utilizes health improvement strategies to eliminate health disparities and improve the health and well-being of all members (Sample Contract - Exhibit B - Statement of Work - Part 5 - Health Equity and Elimination Health Disparities and Sample Contract - Exhibit B - Statement of Work - Part 10 - Quality, Transformation, Performance Outcomes and Accountability). Olalla also has a provider contract with IHN-CCO for behavioral health, nature therapy, and various other services for children and families (Sample Contract - Exhibit B - Statement of Work - Part 4 - Providers and Delivery System). Olalla’s services sometimes require authorization and Olalla has been very happy with IHN-CCO’s responsiveness in that regard (Sample Contract - Exhibit B - Statement of Work - Part 2 - Covered and Non-Covered Services). Olalla can also attest to claims payments and other operational components including audits and referrals (Sample Contract - Exhibit B - Statement of Work - Part 8 - Operations and Sample Contract - Exhibit B - Statement of Work - Part 9 - Program Integrity).
Family Tree Relief Nursery

Contact: Renee Smith, Executive Director  
Address: 1305 Hill St SE  
            Albany, OR 97322  
Phone: (541) 967-6580  
Email: rsmith@familytreern.org  
Website: www.familytreern.org/  
Length of Partnership: Over 5 years

Family Tree Relief Nursery (FTRN) is a current client firm that can speak to and verify the quality of the work IHN-CCO delivered related to the Work under the Sample Contract. IHN-CCO partnered with Family Tree Relief Nursery on the Child Abuse Prevention and Early Intervention transformation pilot that increased access for IHN-CCO members to Traditional Health Workers serving families and children in 2015 – 2016 before being operationalized by IHN-CCO (Sample Contract - Exhibit B - Statement of Work - Part 10 - Quality, Transformation, Performance Outcomes, and Accountability). IHN-CCO currently supports with FTRN on the Peer Wellness Specialist (PWS) transformation pilot that is increasing the number of PWSs in Benton, Lincoln, and Linn counties (Sample Contract - Exhibit B - Statement of Work - Part 10 - Quality, Transformation, Performance Outcomes, and Accountability). FTRN also has an alternative payment methodology provider contract with IHN-CCO for services to children and families (Sample Contract - Exhibit B - Statement of Work - Part 4 - Providers and Delivery System). FTRN can attest to other operational components including audits (Sample Contract - Exhibit B - Statement of Work - Part 8 - Operations and Sample Contract - Exhibit B - Statement of Work - Part 9 - Program Integrity). FTRN supports IHN-CCO members and positively affects the health outcomes of members through culturally appropriate care and elimination of disparities (Sample Contract - Exhibit B - Statement of Work - Part 5 - Health Equity and Elimination Health Disparities).
Willamette Neighborhood Housing Services

Contact: Brigetta Olson, Executive Director
Address: 257 SW Madison Avenue, Suite 113
Corvallis, OR  97333
Phone: (541) 752-7220
Email: brigetta.olson@w-nhs.org
Website: w-nhs.org
Length of Partnership: Over 5 years

Willamette Neighborhood Housing Services (WNHS) is a client firm that can speak to and verify the quality of the work IHN-CCO delivered related to the Work under the Sample Contract. IHN-CCO partnered with WNHS on the Health and Housing Planning Initiative transformation pilot that improved access for IHN-CCO members to Traditional Health Workers in the housing sector January 2016 to August 2017 until being operationalized by IHN-CCO (Sample Contract - Exhibit B - Statement of Work - Part 10 - Quality, Transformation, Performance Outcomes, and Accountability). WNHS also has an alternative payment methodology provider contract with IHN-CCO for THW services to tenants in their housing complexes (Sample Contract - Exhibit B - Statement of Work - Part 4 - Providers and Delivery System). WNHS can also attest to other operational components including audits (Sample Contract - Exhibit B - Statement of Work - Part 8 - Operations and Sample Contract - Exhibit B - Statement of Work - Part 9 - Program Integrity). WNHS supports IHN-CCO members and positively affects the health outcomes of members through culturally appropriate care and elimination of disparities due to socioeconomic status, access to care, and more (Sample Contract - Exhibit B - Statement of Work - Part 5 - Health Equity and Elimination Health Disparities).
Communities Helping Addicts Negotiate Change Effectively (C.H.A.N.C.E.)

Contact: Jeff Blackford, Executive Director
Address: 238 3rd Ave SE
        Albany, OR  97321
Phone: (541) 791-3411
Email: jblackford@chancerecovery.org
Website: www.chancerecovery.org
Length of Partnership: Over 5 years

C.H.A.N.C.E. is a client firm that can speak to and verify the quality of the work IHN-CCO delivered related to the Work under the Sample Contract. IHN-CCO partnered with the CHANCE 2nd Chance transformation pilot that increased access for IHN-CCO members to Peer Support Specialists serving members with addiction and recovery services from July 2017 to December 2018 before being operationalized by IHN-CCO (Sample Contract - Exhibit B - Statement of Work - Part 10 - Quality, Transformation, Performance Outcomes, and Accountability). C.H.A.N.C.E. was the first adopter of alternative payment methodologies for Peer Support Specialist services with IHN-CCO (Sample Contract - Exhibit B - Statement of Work - Part 4 - Providers and Delivery System). C.H.A.N.C.E. can also attest to other operational components including audits (Sample Contract - Exhibit B - Statement of Work - Part 8 - Operations and Sample Contract - Exhibit B - Statement of Work - Part 9 - Program Integrity). C.H.A.N.C.E supports IHN-CCO members and positively affects the health outcomes of members through culturally appropriate care and elimination of disparities (Sample Contract - Exhibit B - Statement of Work - Part 5 - Health Equity and Elimination Health Disparities).