

Health Information Technology Oversight Council

October 6, 2016, 12:30 – 3:45 pm

The Lincoln Building – Transformation Center Training Room, Suite 775

421 SW Oak Street, Portland, OR 97204

Call in: (888) 808-6929, HITOC Member (Host): 514237, Public Code: 453773

| Name | Organization | Title |
|------------------------|------------------------------------|--|
| Maili Boynay | Legacy Health | IS Director Ambulatory Community Systems |
| Robert (Bob) Brown | Allies for Healthier Oregon | Retired Advocate |
| Erick Doolen | PacificSource | COO |
| Chuck Fischer | Advantage Dental | IT Director |
| Valerie Fong, RN | Providence Health & Services | CNIO |
| Charles (Bud) Garrison | Oregon Health & Science University | Director, Clinical Informatics |
| Brandon Gatke | Cascadia Behavioral Healthcare | CIO |
| Amy Henninger, MD | Multnomah County Health Department | Site Medical Director |
| Mark Hetz | Asante Health System | CIO |
| Sonney Sapra | Tuality Healthcare | CIO |
| Greg Van Pelt | Oregon Health Leadership Council | President |

| Time | Topic and Lead | Action | Materials |
|-----------------|--|------------------------|--|
| 12:30 pm | Welcome, Introductions & HITOC Business – Erick Doolen (Chair), Susan Otter <ul style="list-style-type: none"> Approval of minutes – August 2016 2017 HITOC Meeting Schedule Report to legislature OHPB Update | Information Discussion | 1. Agenda 2. August 2016 HITOC Meeting Minutes 3. Proposed 2017 HITOC Meeting Schedule |
| 12:35 pm | HITOC Membership recruitment | Input | |
| 12:45 pm | The Regional Health Information Collaborative (RHIC) HIE – Klint Peterson and Kim Whitley | Information | |
| 1:20 pm | HIE Gaps, Successes and Minimum Expectations – Sean Carey <ul style="list-style-type: none"> Breakout groups: user story discussion Breakout group debrief and minimum data elements survey results Review of HIE governance principles | Discussion | 4. User story and discussion questions 5. HITOC Member minimum data elements survey results |
| 2:25 pm | Break | | |
| 2:35 pm | HIE Gaps, Successes and Minimum Expectations: Wrap-up – Sean Carey | Discussion | |

| | | | |
|----------------|---|------------------------|--|
| 2:50 pm | Strategic Plan and Program Updates <ul style="list-style-type: none"> • HITOC Strategic Planning/ Business Plan Update Timeline – Sean Carey • OHLC HIT Governance Grant – Susan Otter • HIE Onboarding Program Update – Kristin Bork • Prescription Drug Monitoring Program/ HB 4124 and Gateway Update – Sean Carey • Implementation Projects Update – Susan Otter | Information | |
| 3:30 pm | Public Comment | Information Discussion | |
| 3:40 pm | Closing Remarks – Chair | | |

Other Materials

| |
|---|
| PDMP HB 4124 Update Susan Otter’s Testimony to OHPB ONC Interoperability Roadmap data elements handouts |
|---|

Next Meeting: December 1, 2016
Transformation Center Training Room
421 SW Oak, Suite 775
Portland OR 97204

Vision: HIT-optimized health care: A transformed health system where HIT/HIE efforts ensure that the care Oregonians receive is optimized by HIT.

Three Goals of HIT-Optimized Health Care:

- Providers have access to meaningful, timely, relevant and actionable patient information to coordinate and deliver “whole person” care.
- Systems (health systems, CCOs, health plans) effectively and efficiently collect and use aggregated clinical data for quality improvement, population management and incentivizing health and prevention. In turn, policy makers use aggregated data and metrics to provide transparency into the health and quality of care in the state, and to inform policy development.
- Individuals and their families access their clinical information and use it as a tool to improve their health and engage with their providers.

Tentative HITOC Meeting 2017

| Meeting Date | Time | Location | Notes |
|---|------------------|--------------|--|
| February 2 nd , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |
| March 2 nd , 2017 (tentative meeting) | TBD | TBD | <i>Possible HITOC meeting/ HITOC retreat focused on strategic business plan update</i> |
| April 6 th , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |
| June 1 st , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |
| August 3 rd , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |
| October 5 th , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |
| December 7 th , 2017 | 12:30pm – 3:45pm | Lincoln -PDX | |

Small Group: Peter's Story

Peter, 58, lives in Eugene and works for a large retailer, through whom he receives health insurance. Peter's primary care physician works with a small practice affiliated with the local IPA; his cardiologist is affiliated with the regional medical center. Both care providers use a certified EHR, though of different vendors. Peter has a family history of heart disease, heart attack and stroke. Until recently, Peter was relatively healthy, with moderate hypertension and high cholesterol, both of which have been managed through medication, diet and exercise.

Recently, Peter's hypertension has become less responsive to interventions, and he visited the ED for chest pain last week. His cardiologist now recommends consulting with a vascular surgeon for potential surgical options that would require a hospitalization and potential rehabilitation afterwards.

Discussion Questions:

1. Who are the providers that need information?
2. What are the crucial data elements to exchange?
3. How will the information flow?
4. What are the potential gaps in the information exchanged? Are the gaps technological, organizational or resource-related?
5. What methods of HIE could address those gaps?

All Small Group Scenarios

Peter

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Bryan

Bryan, 46, is currently unemployed and homeless. Bryan suffers from a persistent, severe mental illness that causes frequent emergency department visits and hospitalizations. Bryan is enrolled in a CCO, but rarely uses primary care services. His CCO has difficulty communicating with him and staying up to date with his home and contact information. Bryan receives supportive services, sometimes including temporary housing, and addiction counseling from a Portland-area social services agency.

Bryan is currently in the hospital following an opioid overdose.

Sarie

Sarie, 41, is a teacher with the Vale School District and mother of three small children. Her oldest daughter, Maya, 9, lives with cystic fibrosis. Sarie is in good health, but spends a considerable amount of time coordinating care for her daughter, including frequent prolonged visits to a Portland-area Children's Hospital. Maya's primary care physician is an independent practitioner in Vale and Maya has several specialists in Portland, as well

Sarie and her family are in the process of relocating to the Medford area.

Small Group: Bryan's Story

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HITOC Member Minimum Data Elements Survey

N= 9

| | Importance Rating | | | | |
|--|-------------------|--------|------|---------|-----------------|
| | Low | Medium | High | Highest | High or Highest |
| Medications | 0 | 0 | 4 | 5 | 9 |
| Medication Allergies | 0 | 1 | 2 | 6 | 8 |
| Diagnoses | 0 | 1 | 4 | 4 | 8 |
| Discharge Summary | 0 | 1 | 4 | 4 | 8 |
| Allergies | 0 | 1 | 5 | 3 | 8 |
| Laboratory Value(s)/Result(s) | 0 | 1 | 5 | 3 | 8 |
| POLST Registry (Physician Orders for Life-Sustaining Treatment) | 1 | 0 | 5 | 3 | 8 |
| Advance Directives | 1 | 1 | 4 | 3 | 7 |
| Imaging results | 1 | 1 | 5 | 2 | 7 |
| Medication History | 0 | 2 | 6 | 1 | 7 |
| Prescription Drug Monitoring Program (PDMP) (i.e. opioid prescription history) | 0 | 2 | 6 | 1 | 7 |
| Hospital Event (ADT) | 1 | 1 | 2 | 4 | 6 |
| Social Determinants (e.g. food/ housing instability, ACE score, income) | 0 | 3 | 3 | 3 | 6 |
| Problem list | 1 | 2 | 3 | 3 | 6 |
| Vital Signs | 0 | 3 | 4 | 1 | 5 |
| Care plan | 0 | 4 | 4 | 1 | 5 |
| Procedures | 0 | 4 | 4 | 1 | 5 |
| Behavioral Health Plan | 0 | 3 | 5 | 0 | 5 |
| Referrals | 4 | 0 | 5 | 0 | 5 |
| Assessment & Plan of Treatment | 0 | 5 | 4 | 0 | 4 |
| ePrescribing | 2 | 3 | 1 | 2 | 3 |
| Care Team Members | 1 | 5 | 2 | 1 | 3 |
| Immunizations (ALERT Registry) | 1 | 5 | 2 | 1 | 3 |
| Laboratory Test(s) | 1 | 5 | 2 | 1 | 3 |
| Psychosocial History/Assessment | 0 | 6 | 3 | 0 | 3 |
| Health Concerns | 1 | 5 | 3 | 0 | 3 |
| Smoking Status | 4 | 2 | 2 | 1 | 3 |
| Imaging tests ordered | 3 | 4 | 1 | 1 | 2 |
| Progress Notes | 0 | 8 | 1 | 0 | 1 |
| Goals | 2 | 5 | 1 | 0 | 1 |
| Goals: barriers/challenges | 3 | 5 | 1 | 0 | 1 |

Survey Comment Themes

- **Minimum Data Elements**
 - Identified various additional data elements
 - Identified changes/concerns to data elements listed by OHA (value of history, 42 CFR Part 2 implications, alignment with REAL-D)
- **Ranking Important Data Elements**
 - Confirmed most important elements
 - Noted the need to balance essential information with ability to get more if needed
- **Other/Catchall**
 - Additional minimum data elements identified
 - Context of info might be important (i.e., is the provider a specialist, PCP, ect.?)

Other Minimum Elements from Survey

- Other names
- Continuity of Care Document (CCD)
- Disability
- SSN
- Prescription Drug History
- Housing and/or Living Situation
- Reason for last admission/encounter
- Emergency contact
- Guarantor
- Medicaid ID
- Other clinics connected to patient

Integration of Prescription Drug Monitoring Program (PDMP) and health information technology (IT) systems

The Bill

- House Bill 4124 (HB 4124) passed in the 2016 legislative session thanks to the efforts of many stakeholders and partners who supported the bill.
- HB 4124 allows integration of the PDMP with health IT systems so prescribers, pharmacists and their delegates who are PDMP authorized users, will be able to query the Oregon PDMP within their workflow.
- Utilizing existing health IT systems and clinician workflow will save time and help healthcare professionals have accurate, relevant and timely PDMP information at the point of care to make better informed clinical decisions.

What you need to know

- The Oregon Health Authority (OHA) and the PDMP Advisory Commission identified an ad hoc group of stakeholders representative of the Emergency Department Information Exchange (EDIE) partners and vendor, regional health information exchanges (HIEs), and health system partners who have been evaluating solutions for the integration technology.
- The stakeholder group evaluated technical, contracting, and timing factors of available options and recommended the Appriss PMP Gateway to OHA and the PDMP Advisory Commission. Stakeholders determined the Appriss solution would have the shortest implementation timeline due to prior integrations with health IT systems and the PDMP vendor.
- The PMP Gateway is an interface that will securely integrate Oregon's PDMP data into the existing infrastructure of health IT systems. The Gateway model will enable multiple health IT systems to integrate without requiring separate connections for each system.
- HB 4124 requires individual prescribers, pharmacists and delegates to have active, valid PDMP user accounts in order to receive data back from the PDMP through the PMP Gateway query. This means unregistered prescribers, pharmacists and delegates who plan to use the integrated technology need to register as an account holder with OHA.

Work in progress & Next Steps

- The goal for implementation of the PMP Gateway technology is the Q1 of 2017.
- Oregon Administrative Rule 333-023 for PDMP is being amended to comply with HB 4124. A Rules Advisory Committee has been formed and is meeting to adopt new language to support HB 4124 requirements. The amended rule is expected to be in place by January 2017.
- PDMP business operations that will facilitate integration are being finalized. This includes an organization application process to ensure compliance with security and privacy requirements necessary for connection and an access agreement for information exchange required by OHA.
- The state is funding the connection between Oregon's PDMP vendor (Health Information Designs) and the Appriss PMP Gateway. PMP Gateway connections to health IT systems will be paid for by

health IT system (e.g. HIEs, facilities or health systems) via an annual fee to Appriss. The EDIE utility intends to support the costs for EDIE to connect to the PMP Gateway and provide PDMP information through EDIE alerts to Oregon's emergency department (ED) providers. EDs will need to ensure their providers are enrolled and have active PDMP accounts. Jefferson Health Information Exchange (JHIE) will connect to the PMP Gateway using funding from a federal grant from the Office of the Nation Coordinator for Health IT. Longer term, a utility model for funding gateway services is being explored for future implementation.

- OHA is working with Appriss to ensure that the gateway interface will meet the data security, encryption, auditing and reporting requirements of the PDMP program.

Oregon Health Information Technology Update

Susan Otter

Director and State Coordinator for Health Information Technology

October 2016



Topics

- Update on Oregon's HIT environment:
 - Highlights from 2015/2016
- Planned work – coming back to the Board in 2017
 - HITOC: Strategic Plan Update
 - Behavioral Health HIT Scan
 - Annual report
- HITOC membership

How does Health IT support CCOs and the coordinated care model?

Selected characteristics of the coordinated care model:

- Care coordination, population management throughout the system
- Integration of physical, behavioral, oral health
- Accountability, quality improvement and metrics
- Alternative payment methodologies
- Patient engagement

Coordinated care model relies on access to patient information and the Health IT infrastructure to share and analyze data

Goals of HIT-Optimized Health Care

1. Sharing Patient Information Across the Care Team

- Providers have access to meaningful, timely, relevant and actionable patient information to coordinate and deliver “whole person” care.

2. Using Aggregated Data for System Improvement

- Systems (health systems, CCOs, health plans) effectively and efficiently collect and use aggregated clinical data for quality improvement, population management and incentivizing health and prevention.

3. Patient Access to Their Own Health Information

- Individuals and their families access their clinical information and use it as a tool to improve their health and engage with their providers.

OHA's HIT Priorities (a short list)

| | |
|---------|---|
| Past | <ul style="list-style-type: none">• Physical health: EHR Adoption and Meaningful Use payments• Basic common exchange: Direct secure messaging |
| Current | <ul style="list-style-type: none">• Support for care coordination (CCOs, PCPCHs, local HIE)<ul style="list-style-type: none">• Hospital event notifications (EDIE/PreManage)• Core infrastructure components (Provider directory, e.g.)• Initiatives/pilots/grants:<ul style="list-style-type: none">• Telehealth, OpenNotes, end of life/ePOLST• Behavioral health consent, opiate prescribing/PDMP |
| Future | <ul style="list-style-type: none">• Support for value based payment and population management• New opportunities for funding and evolution of governance• Advancing care coordination<ul style="list-style-type: none">• Interoperability and query• Connecting care team• Expanding notifications to other transitions of care• Support for consumer access/mobile health |

Oregon Health IT Adoption and Use: highlights for 2015/2016



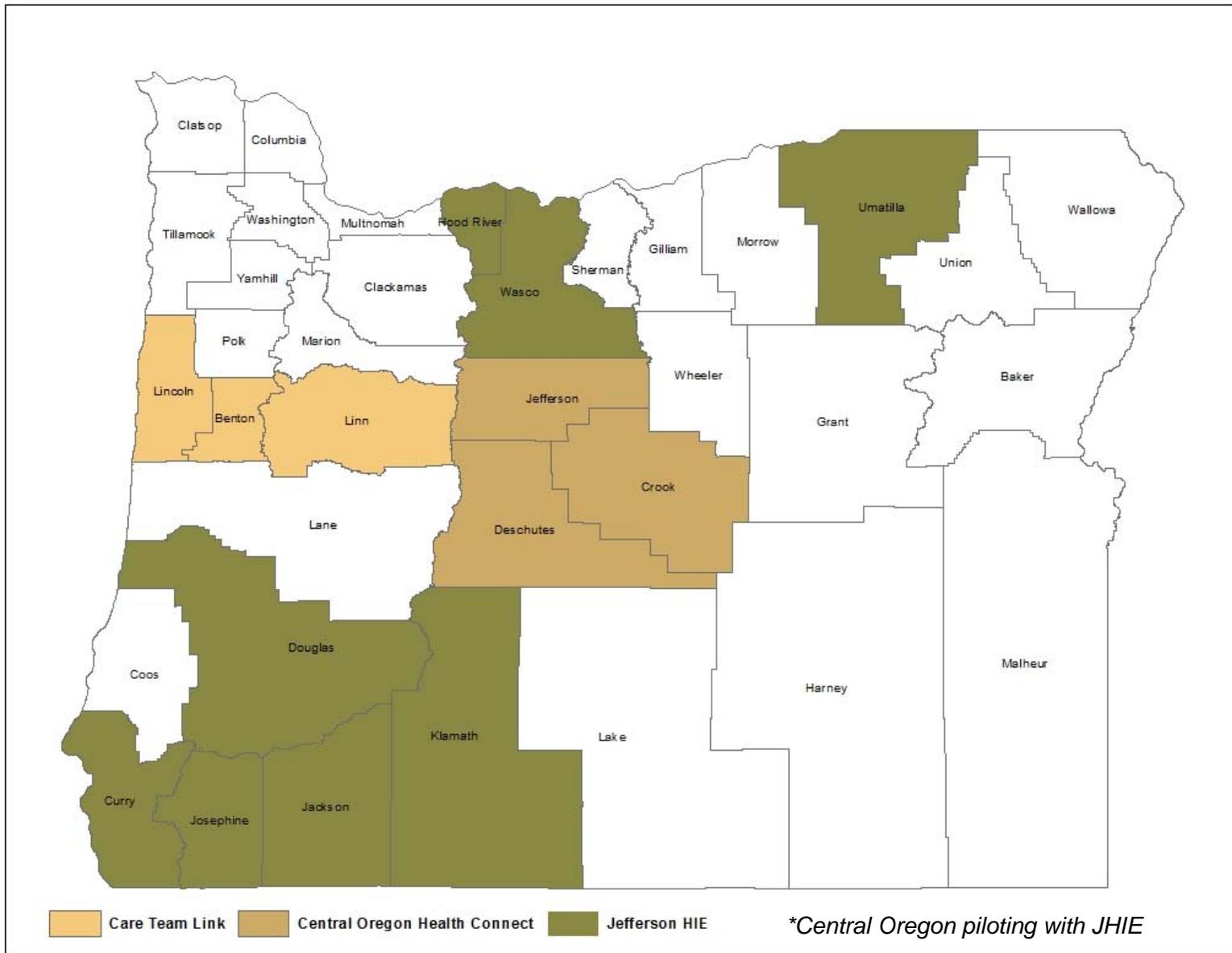
Oregon HIT highlights in 2015/2016

- Adoption of Electronic Health Records
 - 74% of Oregon physicians have a certified EHR
 - Oregon is in top tier of states for federal “meaningful use” incentives
- CCO investments in HIT
 - Regional HIEs
 - Care coordination, case management tools
 - Population management, analytics
- Emergency Department Information Exchange and PreManage spreading across the state
- Telehealth pilots and consumer access to full clinical record

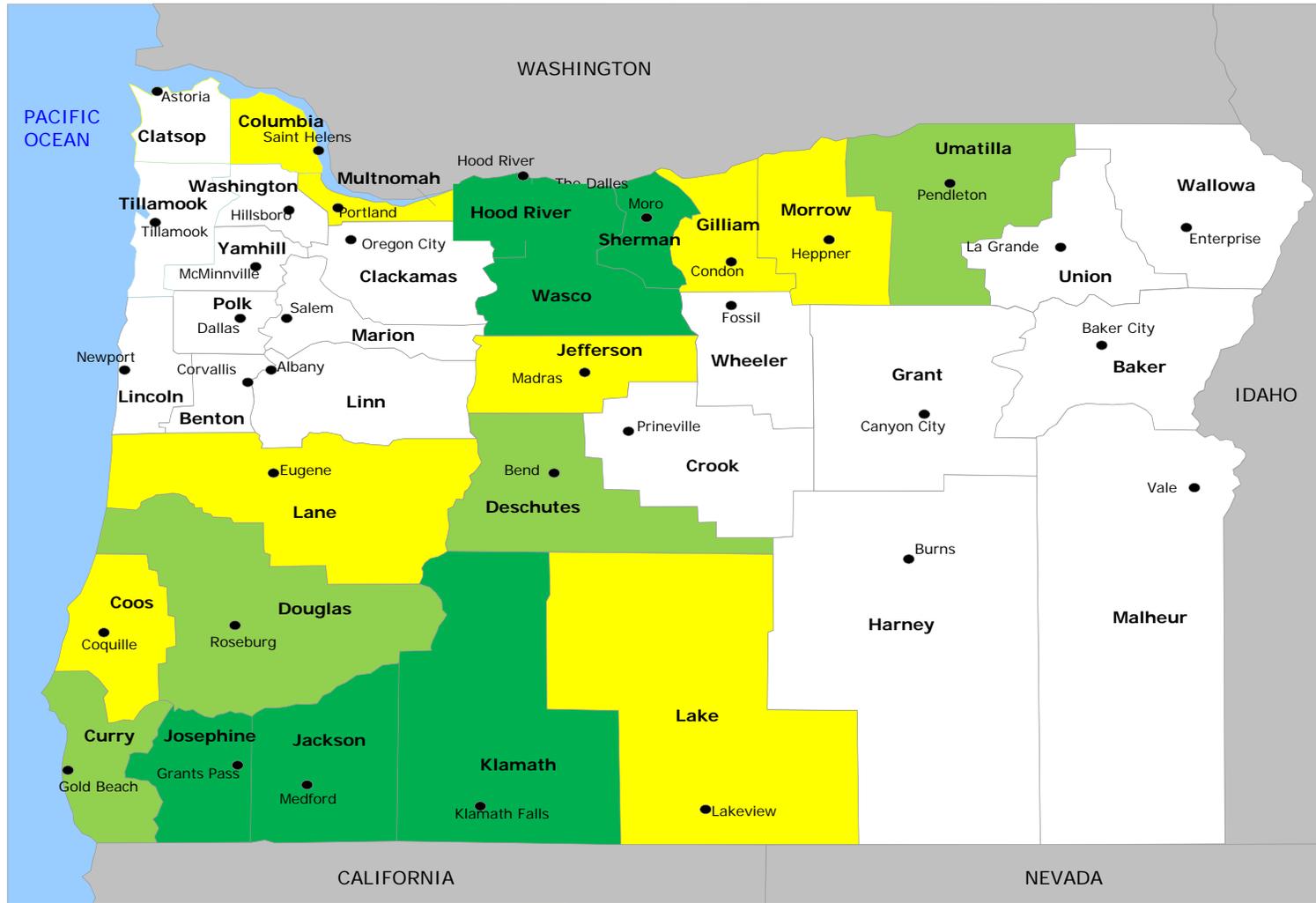
Health Information Exchange Options

- State-supported
 - Direct secure messaging (e.g., via EHRs, HIEs, CareAccord)
 - EDIE/PreManage
 - Public health reporting (e.g., Immunization registry, PDMP)
 - HIE-enabling (Provider Directory, FlatFile Directory for Direct secure messaging addresses)
- Other HIE
 - Regional HIEs (JHIE, RHIC)
 - Vendor-driven solutions/National networks:
 - Epic Care Everywhere, CommonWell, Sequoia: Carequality
 - Federal Network (Sequoia: eHealth Exchange)
 - Connection to federal agencies: SSA, CMS, VA, etc.
 - Organizational efforts:
 - By CCOs, health plans, health systems, IPAs, etc.
 - Including private HIEs, point-to-point interfaces, HIT tools, hosted EHRs, etc. that support sharing information across users

Regional HIEs – by County*



JHIE Coverage Area as of Feb 2016

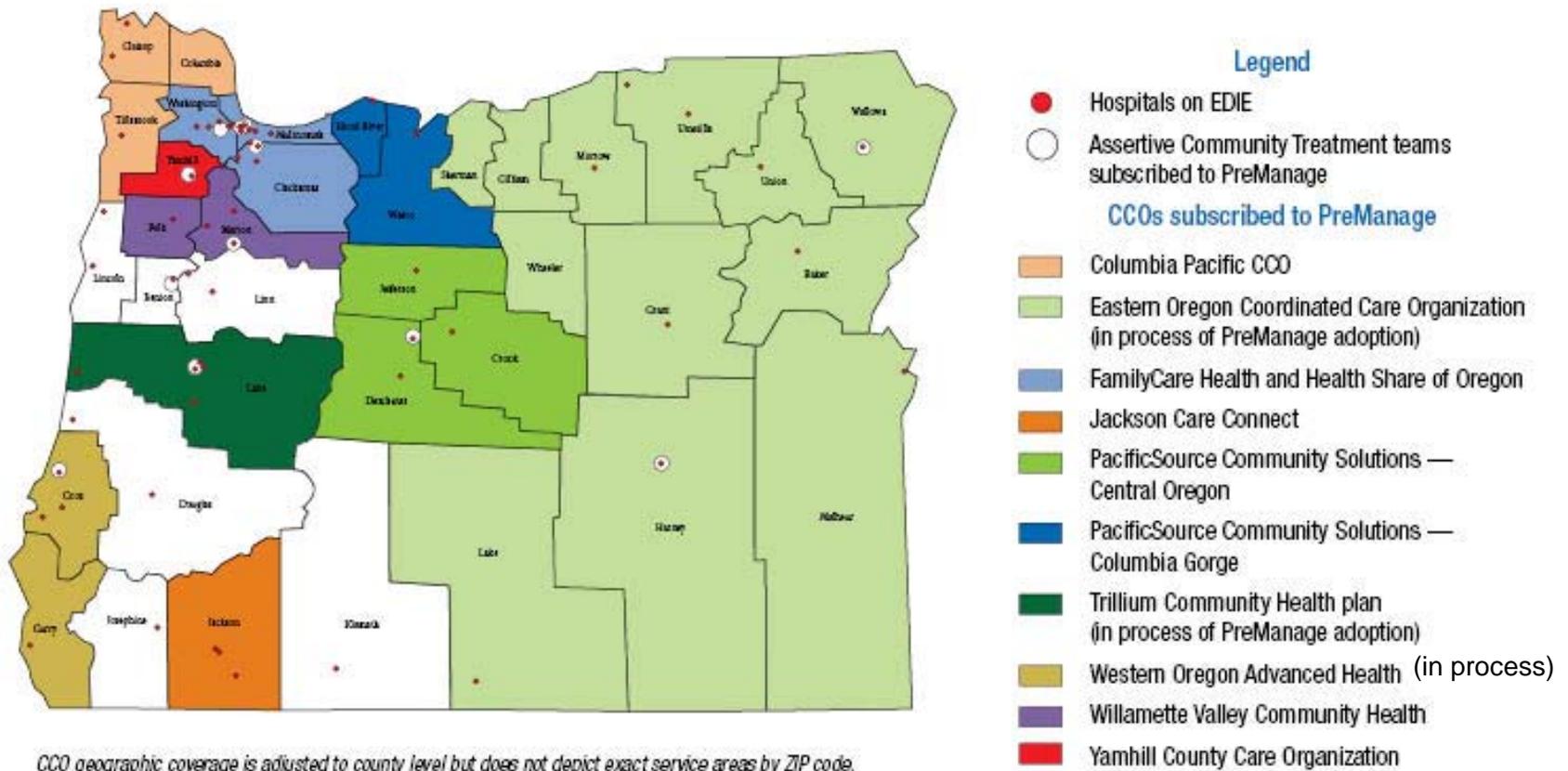


- Enrolled hospitals & clinics
- Enrolled clinics
- Some Interest in participating
- Currently no activity

Sharing Hospital Event Data

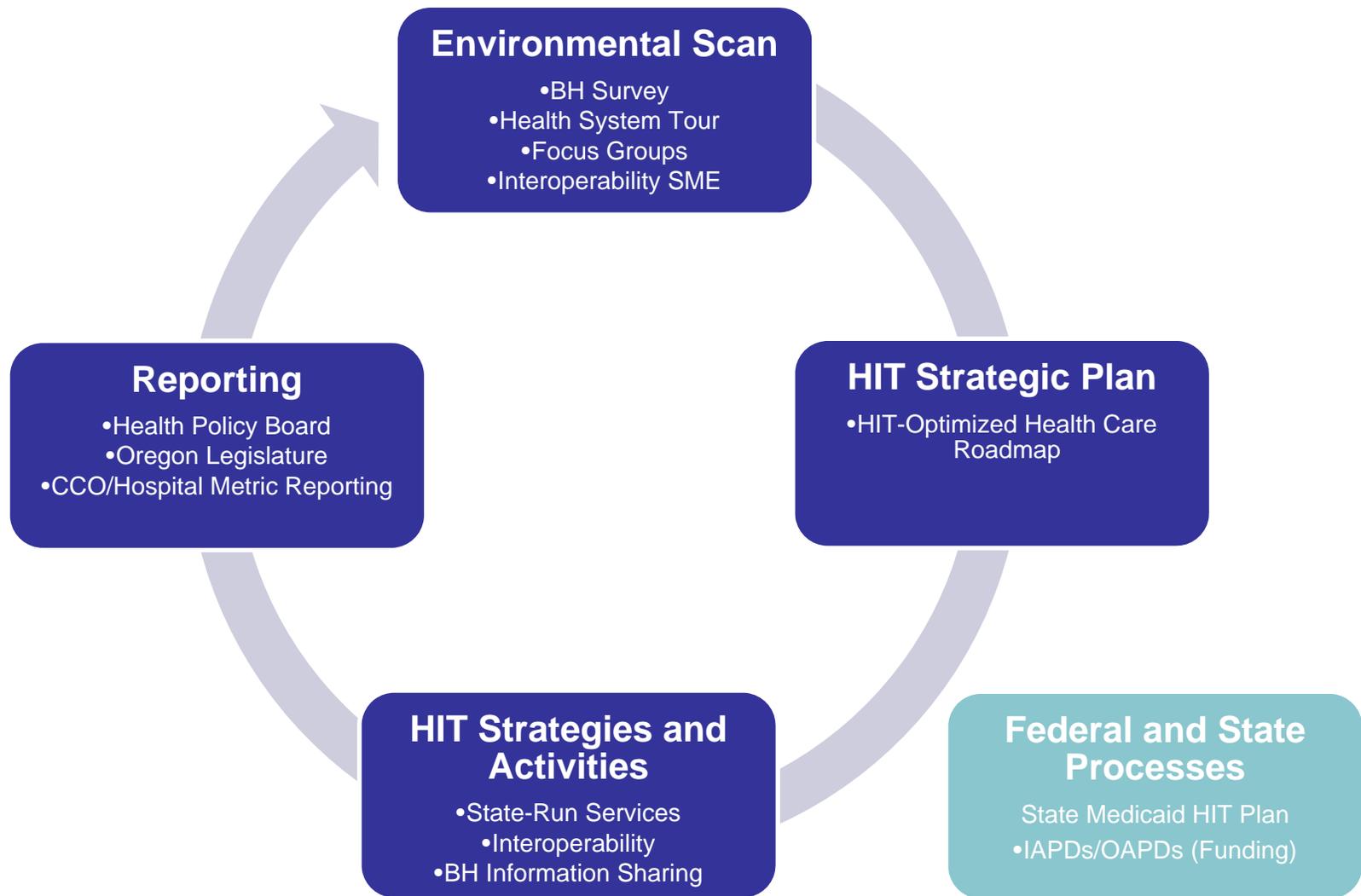
- The Emergency Department Information Exchange (EDIE) Utility
 - Collaborative effort led by the Oregon Health Leadership Council with OHA and other partners
 - Connects hospital event data from OR, WA
 - Notifies ED of high utilizers – provides critical information for ED
- PreManage
 - Provides real-time notifications to subscribers when their patient/member has a hospital event
 - Dashboards provide real-time population-level view of ED visits
- Care guidelines—
 - Subscribers can add key care coordination information into PreManage, viewable by other users

Adoption of hospital notifications by CCOs, hospitals, and ACT teams



Upcoming Health IT opportunities and efforts





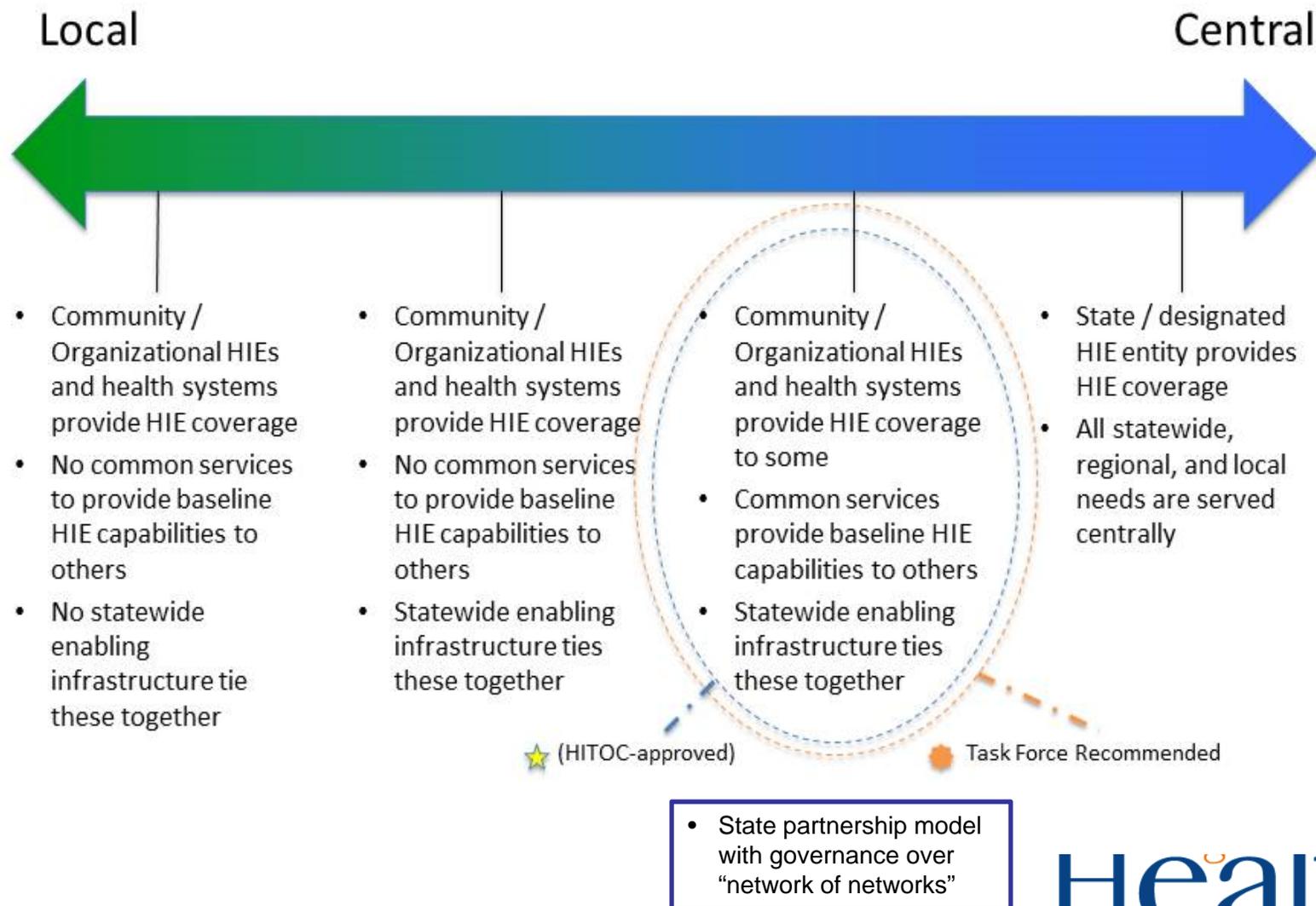
Updating Oregon's HIT Strategic Plan

- The Business Plan Framework is set through 2017
 - An update to this plan is slated for 2017
 - “Monitor and adapt” principle
- HITOC process —
 - HITOC and OHA will turn to its advisory groups to inform this plan
 - Stakeholder engagement planned: behavioral health scan; listening tour of health systems; interoperability workgroup
- Changing environment (waiver, MACRA, CPC+, etc.)
 - New funding opportunity (HIE Onboarding for Medicaid) requires more centralized role
 - Good time to re-evaluate state role and other strategic plan components

2010 Action Plan for Health and HIT

- Goal: Electronic health information is available when and where it is needed to improve health and health care through a secure, confidential health information exchange.
- Maximizing EHR adoption and connectivity
- Focus on developing/connecting regional health information exchanges
- Establishing the Office for Health Information Technology (OHIT) to coordinate planning and implementation
- Establishing a “state-designated entity” to connect local and regional health information exchange operations

Approaches to Statewide HIE Coverage



New CMS HIE Funds – OHA Approach

Oregon intends to explore using new federal funds to:

1. Support care coordination across Medicaid providers, including supporting proposed housing and corrections initiatives in Oregon's proposed 1115 waiver demonstration by
 - supporting the costs of an HIE entity (e.g., regional HIEs) to onboard providers
2. Support Oregon's Medicaid providers, with or without an EHR, including:
 - behavioral health, long-term care, corrections, and other social services, to connect to HIE entities.
3. Ensure HIE entities in Oregon are able to support OHA's Medicaid objectives by setting criteria that entities would need to meet to be eligible for funding

CMS Guidance (2016) on HIE Funds

State Medicaid Directors Letter on HITECH funding:

- 90% federal matching funds for activities to promote HIE to enable eligible professionals (EPs) to meet meaningful use
- Support for any Medicaid provider to connect to HIE entities or other interoperable systems:
 - behavioral health, long term care, corrections, etc.
- Support for HIE entity costs for onboarding (e.g., interface, data agreements, etc.) – could also apply to onboarding to:
 - public health systems,
 - a statewide provider directory
- Funds cannot support:
 - the provider's costs for onboarding (e.g., EHR vendor costs)
 - operational costs or to purchase EHRs

HIE Onboarding Program – Next steps

Health Information Technology Oversight Council endorsed concept
June 9, 2016

OHA next steps:

- Establish a process and forum to determine criteria
 - Convene small stakeholder work group to help OHA staff develop the concept
 - Continue to socialize concept and gather input
 - Report back to HITOC and other stakeholders
- Formalize strategy, in partnership with stakeholders
- Submit a concept to CMS for discussion and ultimately approval

Behavioral Health Scan

- Coordinated Care Model relies on HIT infrastructure to share data across provider types
- Limited types of behavioral health providers are eligible for the EHR Incentive Program
 - Lower rates of HIT adoption
 - Lack of data
- Scan will
 - Provide information about adoption, barriers, plans, and priorities
 - Highlight areas of needed support for OHA to consider
 - Potentially inform policies

Health IT Oversight Council – Membership and Next Steps



HITOC responsibilities

- Make recommendations related to Health IT to the Board to promote health system transformation
- Regularly review and report to the Board on:
 - Status of the Oregon Health IT program and other OHA health IT efforts
 - Efforts of local, regional, and statewide organizations to participate in health IT systems
 - Adoption and use of health IT among providers, systems, patients, and other users in Oregon
- Advise the Board or the Congressional Delegation on federal law and policy changes that impact health IT efforts in Oregon

OHPB responsibilities

- HB2294 (2015) moved HITOC under the Health Policy Board
 - The Board is responsible for chartering HITOC, appointing members and determining terms, and
 - Ensuring that there is broad representation on HITOC of individuals and organizations that will be impacted by the Oregon HIT Program
 - Experience, knowledge, expertise in health care delivery, health information technology, health informatics, and health care quality improvement
 - Other priorities for membership (cross-section of care delivery perspectives, consumer advocates, behavioral health, dental, diverse geographical representation, etc.)
- Board considers HITOC recommendations and takes action as appropriate
- Board reports and refers HIT issues to HITOC as needed

HITOC Membership

| Name | Title | Organizational Affiliation | Location | Term |
|---|--|------------------------------------|-----------------|------|
| Maili Boynay | IS Director Ambulatory Community Systems | Legacy Health | Portland, OR | 3 |
| Robert (Bob) Brown* (vice-chair) | Retired Advocate | Allies for Healthier Oregon | Portland, OR | 2 |
| Erick Doolen (chair) | COO | PacificSource | Springfield, OR | 4 |
| Chuck Fischer | IT Director | Advantage Dental | Redmond, OR | 3 |
| Valerie Fong, RN | CNIO | Providence Health & Services | Portland, OR | 2 |
| Charles (Bud) Garrison | Director, Clinical Informatics | Oregon Health & Science University | Portland, OR | 4 |
| Brandon Gatke | CIO | Cascadia Behavioral Healthcare | Portland, OR | 3 |
| Amy Henninger, MD | Site Medical Director | Multnomah County Health Department | Portland, OR | 2 |
| Mark Hetz | CIO | Asante Health System | Medford, OR | 4 |
| Sonney Sapra | CIO | Tuality Healthcare | Hillsboro, OR | 3 |
| Greg Van Pelt | President | Oregon Health Leadership Council | Portland, OR | 2 |

**Bob Brown will be stepping down when a replacement is found*

Gaps to fill:

- Consumer/advocate
- Underserved areas: Rural/frontier, Tribes, small/unaffiliated provider
- Social services, long term supports/services
- Health information exchange
- Supplemental behavioral health perspective

HITOC timeline:

- Call for nominations – targeted to fill gaps - October
- Proposed members for Board approval – December
- Behavioral Health HIT Scan – early 2017
- Annual report – summer 2017
- HITOC: Strategic Plan Update – mid/late 2017

- Coordination through Board liaison

**Learn more about Oregon's HIT/HIE developments and
Subscribe to our email list!**
www.HealthIT.Oregon.gov

Susan Otter
Director of Health Information Technology
Susan.Otter@state.or.us



H. Consistent Data Semantics

As electronic health information is shared and used among different stakeholders, its meaning must be consistently maintained in order to maximize its usage and value in a learning health system.

Background and Current State

The clinical vocabularies and coding systems used to represent clinical information in a health IT system are often referred to as data “semantics.” Semantic interoperability is the “ability to automatically interpret the information exchanged meaningfully and accurately in order to produce useful results as defined by the end users of both systems.” If sending and receiving systems are not developed and configured to adhere to a common and consistent set of vocabularies, code sets and value sets, the users of those systems will have difficulty with interoperability. For example, a health professional would readily understand that “Tylenol” and “acetaminophen” are generally used interchangeably. However, two computer systems exchanging those phrases may treat the terms entirely differently if the systems are not bound to a standardized vocabulary or terminology that equates them as synonyms. If two systems do not agree the terms are synonyms, then data passing through them will not be equally interpreted without additional effort.

Several vocabulary and terminology standards are already adopted by the Secretary in regulation and are required in the 2015 Edition.⁶⁵ These include but are not limited to:

- Systematized Nomenclature of Medicine-Clinical Terms (SNOMED CT) for problems or conditions;
- RxNorm for medications and medication allergies;
- Logical Observation Identifiers Names and Codes (LOINC) for laboratory tests, vital signs and cancer case reporting; and
- CVX for immunizations.

Additionally, other vocabulary and terminology standards are embedded within implementation guides, documenting the use of data formats such as HL7 v2 messages and C-CDA. In many cases, “value sets,” such as those published in the Value Set Authority Center (VSAC), are established to identify subsets of the standard vocabularies to be used for a specific purpose. For example, for the purposes of quality measurement, a unique identifier or object identifier (OID) is used to call out a grouping of codes from SNOMED CT that should be used to identify diabetic patients for diabetes quality measures. That content can be pulled through an API into a system and automatically be updated as the content is refined. The codes listed in association with the OID then determine which patients should be included or excluded from the measure based on the coding of the diabetes diagnosis, despite having been entered for the purpose of direct clinical care or billing.

⁶⁵ 45 CFR §170.315



Moving Forward and Milestones

Consistent and shared ways to represent the meaning of clinical concepts and terminology are necessary to support clinical care, research, quality measurement and clinical decision support. This shift will allow machines to automatically update content, understand and interpret meaning and integrate multiple coded concepts together to create more complex concepts and inferences. This will require data stewards, information science professionals and others to work together with the National Library of Medicine (NLM) to clearly represent these concepts and their relationships, as well as the mechanisms by which automated processing of such data can occur. Furthermore, the industry should increasingly embrace and build to the concept of utilizing service calls to access the most up-to-date standards, vocabularies, data elements and artifacts, rather than trying to encode each update locally in their system and treating them as static in the interim.

Near-term work to advance semantic interoperability should focus on priority data domains that are most commonly used across many clinical and non-clinical use cases and most often represented in format standards (see Figure 7). These data domains have a number of data elements included in them. The industry should prioritize which data elements should be focused on first for semantic interoperability as well as their consistent use across multiple standards. Advancing the semantic interoperability of these overarching data domains and their consistent usage in different format standards will enable data to be collected once and used for many purposes. This will also create efficiencies in electronic health information sharing that have yet to materialize across the health IT ecosystem. In the near term, this means aligning vocabularies, code sets, value sets and “null flavors” for these data domains across the most commonly used format standards, including HL7 V2 messaging, C-CDA, QRDA, NCPDP SCRIPT and HL7’s Fast Healthcare Interoperability Resources (FHIR).⁶⁶ Over time, the priority data domains will be expanded to include additional clinical data. This will need to include imaging reports, genomic data and unstructured data, which would comprise of the notes and narrative that are needed to support clinical care, quality measurement, research and many other use cases.

Overall, improvements in the consistent use and specificity of semantic representations of data will help advance and support new modes of information exchange, specifically those where stakeholders will be able to selectively request or

Figure 7: Near-term Priority Data Domains

- Individual Name
- Sex
- Date of Birth
- Race
- Ethnicity
- Address (Current, Historical)
- Phone Number (Current, Historical)
- Preferred Language
- Smoking Status
- Problems
- Medications
- Medication Allergies
- Laboratory Test(s)
- Laboratory Value(s)/Result(s)
- Vital Signs
- Procedures
- Care Team Members
- Immunizations
- Unique Device Identifier(s) for Implantable Device(s)
- Assessment and Plan of Treatment
- Goals
- Health Concerns

⁶⁶ <http://www.hl7.org/implement/standards/fhir/summary.html>



access only the information they need (compared to the predominant document-based exchange used today). While information may still be sent as a point-in-time snapshot of a person’s encounter or condition, it will increasingly be an answer to a specific, value-driven question or query. For example, while the pharmacist may request a person’s current medications and allergies, their endocrinologist will likely request blood sugars, hormone levels, eye exams and the individual’s person-centered plan and thus each user will receive only the information they ask for or deem relevant.

The following includes milestones for Consistent Data Semantics. Please see the [Complete Set of Calls to Action and Commitments by Roadmap Section](#) at the end of this document for the critical actions that need to take place to advance nationwide interoperability.

Milestones for Consistent Data Semantics

