Introduction and Purpose

The Health Information Exchange (HIE) Workgroup has been tasked by the Health Information Technology Oversight Council (HITOC) to assist them and the Oregon Health Authority (OHA) with developing strategies and recommendations to accelerate, support, and improve HIE across Oregon as part of Oregon's larger Health IT Strategic Plan.

This HIE concept paper, one of five, sets out the statewide vision for HIE developed by the Workgroup as well as a helpful introduction on the present state of HIE in Oregon, how HIE can help address health equity[1], and considerations around HIE governance. Please review the other four concept papers on related HIE topics:

- Connecting the Care Team

- Advancing Population Health Tools

- Demonstrating Value with Social Determinants of Health (SDOH) Use Cases of HIE

- Consumers, Privacy & Security, and Data Quality

Implementing and promoting HIE is an active process that requires coordination and alignment across the broad health care ecosystem. In addition to the proposed vision statement provided below, the Workgroup has developed a set of eight Primary Objectives for HIE that target many of the challenges of electronic information exchange identified by Workgroup members and other Oregon health IT/HIE partners.[2]

While this concept paper is intended to inform HITOC and the statewide health IT strategic plan, it may also prove helpful to policymakers; providers, health plans, and others who use HIE—even health care consumers.

Contents of this Paper:

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[1] For OHA's definition of health equity see page 4.

[2] Prior to convening the HIE Workgroup, HITOC staff and consultants conducted a set of 25 interviews across the state to inform HIE strategy development. For more information about that process, see the Report here.

Statewide Vision for HIE

To promote overall health and wellbeing, individuals and all involved in their care will have timely and secure electronic access to comprehensive, interoperable, and relevant information to address health and social needs, and to support care coordination, quality improvement, and population health activities.

Primary Objectives for HIE

In addition to the vision statement, the HIE Workgroup identified eight primary objectives for HIE that are recommended to be adopted alongside the vision and may serve as guiding principles, or values, for HIE efforts in Oregon. The objectives are described in greater detail later in this paper:

1. Improve **health equity**
2. Address digital inequity and **promote HIE for all**
3. Enable **broad and timely care coordination**
4. Support **population health and quality improvement** activities
5. Promote **knowledge of HIE** and **broad contribution of data by all parties**
6. Promote continued improvement of **data quality and completeness**
7. Promote **individual and caregiver understanding of, and access to, health and social needs data**
8. Promote patient **privacy and security** of data systems

Short-Term Strategic Focus Areas (2022 – 2027):

While the primary objectives outlined above aim at long-term impacts for HIE in Oregon, the Workgroup identified three focus areas they recommend prioritizing over the next 5-7 years to best address current gaps:

Primary Objective: Improve health equity

❖ **Strategy: Prioritize HIE use cases to support transitions in health insurance status and life events, as well as social determinants of health (SDOH)**: HIE solutions can help address gaps in SDOH information sharing (e.g., patient demographics, social need screening data, etc.) as patients are referred to, or access, clinical care as well as social services and other supports. This could include interaction with community information exchange (CIE) systems that are linking patients to services offered by non-health care entities like community-based organizations (see Objective 1 on page 4). Importantly, these activities will help to achieve multiple objectives of HIE, including addressing health equity, improving

care coordination and population health, and encouraging data contribution from a broader group of providers. Advancement in this area will require navigating data contribution from sectors with additional privacy and security requirements, for example, housing services (governed in large part by the Homeless Management Information System Privacy Rule) and educational settings like schools (governed by the Family Educational Rights and Privacy Act).

Primary Objective: Enable broad and timely care coordination

❖ **Strategy: Increase the use of electronic, closed loop clinical referrals:** An electronic referral system facilitates "closed loop referrals" when the sending and receiving provider to the referral can both access important information about the patient, patient needs and concerns, status of the referral, as well as any relevant outcomes of the referred services. In addition to facilitating the referral, these tools perform a critical care coordination activity, leading to more informed, patient-centered care (see Objective 3 on page 6). For the purposes of this paper, closed loop clinical referrals focus on health care services and thus are separate from closed loop referrals for addressing social determinants of health, which are the focus of HITOC's CIE Workgroup.[3]

Primary Objective: Support population health and quality improvement activities

❖ **Strategy: Increase the use of data and technology for value-based payment**: Oregon has long been a national leader in health system transformation, focused on creating a system that delivers equitable, affordable, high-value coordinated quality care. However, despite its many successes, most health care in Oregon is still paid based on quantity of services provided, also known as fee-for-service (FFS). In contrast, value-based payment (VBP) holds providers accountable for improving health care quality, makes them more aware of health care costs, promotes patient experience, and, when designed correctly, improves health equity. In order to achieve successful VBP arrangements, both health plans and providers need reliable data to better manage populations at risk for consuming high-cost services and experiencing poor health outcomes (see Objective 4 on page 7).

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[3] For more information on HITOC's CIE Workgroup: https://www.oregon.gov/oha/HPA/OHIT-HITOC/Pages/CIEworkgroup.aspx

Primary Objectives for HIE in Detail

1. Improve health equity

HIE promotes health equity in a variety of ways through its various functions and uses. For example, many organizations use HIE to identify patient needs at the individual and population level and communicate these needs across different settings of care. Effective HIE supports care coordination for all patients, including populations at risk of health inequities due to systemic racism or other biases in our health care system and society.

A recent example of this was the massive effort taken by health plans and providers to vaccinate patients against COVID-19. Different strategies were needed based on different community needs (e.g., individuals who avoid the health care system due to trauma, or immigrant and refugee communities). Robust data collection on different populations was key to identify these insights and improve vaccine distribution. Activities like this both align with OHA's commitment to eliminate health inequities by 2030 and assist health plans and providers to address health inequities directly through increased visibility and awareness of these needs.

Equity also expands to the providers and entities that serve populations. When provider organizations in specific communities—frontier communities for example—do not have access to HIE, their patients do not have access to the same level of informed, coordinated care. This highlights the interdependencies between this objective on health equity and other HIE objectives like addressing digital inequity at the provider level (see Objective 2 on page 5).

Future HIE strategies[4] to promote health equity include:

- **Short-Term Priority Strategy**: Prioritize HIE use cases to support transitions in health insurance status and life events, as well as social determinants of health (SDOH)

> **OHA Health Equity Definition:**
>
> Oregon will have established a health system that creates health equity when all people can reach their full health potential and well-being and are not disadvantaged by their race, ethnicity, language, disability, age, gender, gender identity, sexual orientation, social class, intersections among these communities or identities, or other socially determined circumstances.
>
> Achieving health equity requires the ongoing collaboration of all regions and sectors of the state, including tribal governments to address:
>
> - The equitable distribution or redistribution of resources and power; and
> - Recognizing, reconciling, and rectifying historical and contemporary injustices.

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[4] Strategies in this section and elsewhere in the report were informed in part by a series of interviews conducted in fall 2021 about HIE strategy.

- Collecting and clarifying demographic information on patients that can help inform care and support needs
- Identifying health inequities at the population level and informing targeted interventions that address these inequities
- Promoting HIE data sharing models that take a vendor-agnostic approach to ensure access across broad populations of providers serving the numerous patient populations in Oregon
- Promoting a more diverse health IT workforce within organizations to operate and use these systems. HIE end users often drive strategy and direction of how HIE solutions are used, and thus this workforce should reflect the diversity of Oregon communities
- Encouraging governance entities that oversee HIE solutions in Oregon to consider the above ideas to ensure that Oregon's HIE infrastructure is aiding OHA in its health equity goals

Centering health equity in HIE strategies is connected to addressing digital inequities (Objective 2) as well as to the Demonstrating Value with SDOH Use Cases of HIE concept paper.

2. Address digital inequity and promote HIE for all

In the context of HIE, digital inequity refers to ways that different patients, providers, health plans, and others lack the same level of access to IT tools and information needed to enable people to reach their full health potential and well-being. Although physical, behavioral, and oral health providers are participating in HIE at increasing rates, substantial gaps persist that impact the care patients receive.

Digital inequities are complex and are correlated with financial and resource inequities between health care organizations. Federal electronic health record (EHR) adoption incentives via the Health Information Technology for Economic and Clinical Health (HITECH) Act (2009) brought over $500 million to Oregon, supporting all hospitals and many physical health providers in adopting interoperable EHRs. However, most behavioral health and oral health providers, and smaller physical health clinics did not benefit to the same extent from federal incentives, often facing barriers to eligibility or participation. These organizations are either not using an EHR or often using EHR vendors that do not participate in nationwide or vendor-driven query-based information exchange networks, which have been more broadly adopted by hospitals and larger physical health providers. While behavioral and oral health providers who use an EHR have been increasingly participating in Oregon-specific HIE efforts such as Reliance eHealth Collaborative and the Collective Platform[5] (see Figure 1 on page 12), recent

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[5] See the Helpful Definitions section on page 18.

data shows they lack access to national and vendor-driven networks,[6] contributing to the digital inequity between those that received EHR adoption incentives and those that did not.[7]

Future work identified by the Workgroup to help address existing digital inequity could include:

- Providing funding and other support to behavioral health, oral health, and small independent physical health providers to adopt interoperable[8] EHRs and/or participate in minimum viable HIE solutions and/or interoperability functions within their EHRs
- Exploring approaches to lower the cost of interoperability products offered by EHRs and other technology vendors when charged to payers or providers
- Developing strategies for other entities that were not included in federal EHR and interoperability incentive programs to participate in HIE solutions, for example, long-term post-acute care entities like skilled nursing facilities

Addressing digital inequities is described further in the Connecting the Care Team concept paper.

3. Enable broad and timely care coordination

An established positive impact of HIE efforts to date has been how increased information flow can greatly improve the ability of care teams to coordinate the care of their patients. Health care is highly fragmented and complex; patients often use services at multiple providers, hospitals, and other specialists. Many patients also have social service needs that relate to their health outcomes. Care coordination is the process by which the system communicates across these multiple fragments to ensure provision of services is efficient, effective, and patient-centered. A long-standing goal in Oregon for HIE has been to improve timely access to the right information for the provider at the point of care.

Timeliness of information exchange is key, as for most patients the opportunity to help them is when they are with a provider in real time. Many of Oregon's HIE successes to date have focused on improving access to relevant information when an individual patient is having an encounter with a provider. Aggregation and sharing of hospital encounter information, summaries of care, and other interoperability efforts at the state and federal level are addressing individual care coordination needs for many providers with certified EHRs. Using national data exchange standards, many EHRs and other HIE solutions regularly query other systems to ensure access to up-to-date information. The foundation of standards is also

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[6] See the Helpful Definitions section on page 18.
[7] See: 2022 Health IT Report to HITOC: https://www.oregon.gov/oha/HPA/OHIT/Documents/2022ReportOnOregonsHealthITLandscape.pdf; and HIE in Oregon: A Tale of Two Worlds: https://www.oregon.gov/oha/HPA/OHIT-HITOC/Documents/HIE_TaleofTwoWorlds.pdf
[8] See the Helpful Definitions section on page 18.

leading to new opportunities for HIE, like closed loop referrals between EHR systems (covered in greater detail in the Connecting the Care Team concept paper).

Future activities should build upon these successes by:

- **Short-term Priority Strategy:** Increase the use of electronic, closed loop clinical referrals
- Adding more high-quality information from different sources (see Objective 5 on Broad Contribution of Data on page 8)
- Ensuring that data sources via HIE are integrated into EHRs and other systems of record that providers and other care team members already use

Enabling broad and timely care coordination is described further in the Connecting the Care Team concept paper.

4. Support population health and quality improvement activities

Population health refers to an broad set of health care activities aimed at improving the health of populations and is tied closely to access and use of population level data. This contrasts with care coordination, which is typically focused on navigating individual patient needs. HIE collects and aggregates data that can be used to inform population health, including identifying populations and subpopulations, understanding their characteristics and health care risks, and even measuring the impact of specific population health programs and interventions. Oregon's Medicaid coordinated care organizations (CCOs) and Medicare Advantage health plans are responsible for ensuring the delivery of high-quality health care and keeping health care costs down and must increasingly use VBP[9] arrangements with providers to do so. HIE can play an important function in facilitating data exchange between providers and CCOs/health plans to support health care quality improvement, VBP and other population health management efforts.

For example, Oregon is currently implementing cost growth targets across all health plans and CCOs, and VBP is a key strategic priority to meeting those targets. VBP requires specific technology and analytical capabilities for health plans and their partnering providers, including more robust understanding of risk and gaps in care that will need to be acted upon in real-time, at the point of care. Much of this data is collected and exchanged via HIE. Delivering on population health use cases is expected to driver further demand for HIE use and support among health plans and CCOs, who can serve a critical function for the financial sustainability of HIE efforts over time. More importantly, these activities ensure that the health care received by patients is efficient and effective.

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[9] See the Helpful Definitions section on page 18.

Future strategies identified by the Workgroup include:

- The broad sharing of claims data as an interim step to encourage broader use of HIE and interoperable tools to support VBP implementation in Oregon
- HIE strategies that help address issues around provider-patient attribution, which are often a challenging component of many VBP arrangements

*Supporting population health and quality improvement includes **increasing the use of data and technology for VBP, which is one of the short-term strategic focus areas** identified by the Workgroup and relates to the Advancing Population Health Tools concept paper.*

5. Promote knowledge of HIE and broad contribution of data by all parties

Early in the Workgroup's discussions, it was identified that health care leaders and providers have inconsistent awareness of HIE and its functions and value propositions within the health care system. This lack of awareness or impact of HIE may be a contributor to health systems or other data contributors choosing not to participate in a specific HIE solution. For example, an HIE solution may require upfront costs or investment by the organization and leaders will not support participation unless there is a clear sense of the value that can be derived.

The federal government, through the Office of the National Coordinator for Health Information Technology (ONC) and Centers for Medicare & Medicaid Services (CMS), has been incentivizing health plans, hospitals and health systems, and health IT vendors to ensure that data is following patients and that health IT and HIE systems are not unreasonably burdening the ability to access this information. Oregon is aligned with these federal efforts, but state and local entities need to go one step farther: identify and promote the value of these efforts.

Future efforts should leverage these regulations and policies to educate and influence Oregon entities to participate more broadly in HIE. For example:

- Identifying and prioritizing the standardized and non-standardized data that should be included in HIE efforts. Starting with the United States Core Data for Interoperability (USCDI) standardized set of data elements[10], and others, including claims data and pharmacy data; labs; other clinical data standards; primary care and behavioral health care plans; Oregon race, ethnicity, language, and disability (REALD) and sexual orientation and gender identity (SOGI) data[11]; SDOH data, etc. Efforts in this area need to account for interoperability outside of Oregon and acknowledge that many Oregon providers are accountable to expectations and/or requirements in multiple states.

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[10] For more information on the USCDI data elements: https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi

[11] REALD and SOGI are demographic data, which may be collected when individuals interact with the health care system. Oregon has a unique state standard for REALD and SOGI.

- Prioritizing who should contribute data and when. Examples include (but are not limited to): physical, behavioral, and oral health providers; long-term post-acute care; health plans/CCOs; school-based health centers; state and county health programs; state and local public health programs; community-based organizations; patients; etc.
- Identifying barriers to information sharing and developing mechanisms to address these barriers and discourage data silos. This may take the form of supporting, developing, and/or implementing governance practices for HIE solutions in Oregon (see HIE Governance section on page 15).

Realizing the value of HIE such that it may lead to increased awareness and broader data contribution is covered thematically in the Connecting the Care Team, Advancing Population Health Tools, and Demonstrating Value with SDOH Use Cases of HIE concept papers.

6. Promote continued improvement of data quality and completeness

Data quality refers to ensuring that the data flowing in and out of HIE solutions is high quality, with an aspiration toward zero errors or missing data elements. Users of HIE tools need to be able to rely on the data contained within HIE solutions. Without this reliability, many HIE end users will quickly lose confidence in these solutions and will stop using them, leading to negative network effects[12] that may prove catastrophic to the future viability of the HIE solution(s) in question. Data quality encompasses both the degree to which shared information is accurately captured and provided by the original provider or health care entity, as well as ensuring that the data is flowing consistently from all data sources (free of gaps and missing values). Workgroup Members also noted that timeliness of data is a component of quality—if quality data is received after it is actionable or relevant, it also diminishes the value of HIE.

Throughout the years, Oregon HIE leaders have learned to hold vendors accountable to monitoring the quality of data feeds flowing into their systems. HIE solutions typically have limited ability to address data problems at the source, but the Workgroup discussed how vendors—or the bodies governing these vendors—should ensure that they provide transparency around data quality as well as any processes they have implemented to fix data quality issues with originating data contributors (e.g., hospitals, health plans, etc.).

Future strategies need to consider how to create more consistent and ongoing data quality practices across HIE solutions in Oregon, particularly those leveraging federal standards.

For more information about data quality and completeness, please refer to the Consumers, Privacy & Security, and Data Quality concept paper.

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[12] Network effects refer to circumstances where the value of an HIE solution ultimately depends on the number of individuals or parties using it. The larger the network of users, the greater the network effect and value derived by HIE users. https://www.forbes.com/sites/sethjoseph/2022/07/11/overcoming-the-cold-start-problem-in-healthcare/?sh=12771e661b44

7. Promote individual and caregiver understanding of, and access to, health and social need data

This objective focuses on increasing patient and caregiver awareness and education of the value of HIE in Oregon. Consumers are, to a lesser extent than providers and other health care entities, also data contributors and users of HIE solutions. Many consumers assume that health care entities already operate in an interoperable system where all health and social service providers have the most relevant and timely information they need, when the reality is quite different. Some consumers have legitimate concerns about how their care information is shared with others and/or harbor concerns that information sharing might lead to adverse treatment or outcomes. These consumers need ways that they can better work with providers and their health plan to ensure their wishes are met around information sharing within the confines of state and federal privacy laws.

Future strategies could include:

- Considering activities that increase awareness and understanding for patients for how HIE works in Oregon, as well as understanding of confidentiality and patient rights
- Promoting/supporting the consolidation of multiple personal health records and/or patient portals that consumers may access
- Supporting efforts by health plans and/or providers to engage patients in their information sharing strategies

For detailed recommendations on consumers and their role in HIE, please refer to the Consumers, Privacy & Security, and Data Quality concept paper.

8. Promote patient privacy and security of data systems

All HIE efforts are subject to privacy and security standards and regulation. Ensuring privacy and the secure handling of health care-related information is paramount to a successful HIE strategy.

- Privacy refers to how software is designed to prevent unauthorized users from accessing or sharing protected health information (PHI)[13] inappropriately. Privacy also includes administrative policies and procedures adopted by organizations to account for how information is protected.
- Security refers to the technical protocols and design that protect data and information when it is not in the process of being appropriately accessed or shared. The standard security protocols for PHI include encryption in transit and at rest, meaning that while

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[13] Protected health information (PHI), also referred to as personal health information, is the demographic information, medical histories, test and laboratory results, mental health conditions, insurance information and other data that a healthcare professional collects to identify an individual and determine appropriate care.

PHI is stored and when it is being transmitted from one electronic system to another, it is encrypted.

HIE in Oregon relies on federal privacy standards and existing security standards for health IT, including SOC-2 and HITRUST certification.

Any future HIE strategies must prioritize privacy and security concerns.

For detailed recommendations on privacy and security, please refer to the Consumers, Privacy & Security, and Data Quality concept paper.

Oregon's Approach to HIE

Background

The 2009 American Recovery and Reinvestment Act included the HITECH Act, which created substantial new opportunities for investment in HIE leveraging EHR data that is collected at patient encounters such as primary care visits and hospital stays. Under the HITECH Act, states took different approaches to achieving HIE solutions that would augment EHRs and give care teams the most relevant and timely information about their patients. Some states designated a private entity to operate an HIE on behalf of the public and private sectors (often referred to as a state-designated entity). At the time, Oregon had multiple community-based and regional HIE efforts already underway. Thus, the approach was to support all of these regional HIEs with policies that would allow them to grow, while ensuring that some baseline level of functionality was available to benefit patients statewide. Baseline services to support and connect across HIEs (e.g., Direct Secure Messaging) were also established by OHA to ensure that the infrastructure could evolve as a network-of-networks approach.

Thirteen years later, HITECH has ended and Oregon's regional HIE landscape has evolved. Today, technology and data are tied to many of the state's focused efforts to transform the health care system. Collective Medical has been deployed statewide to specifically address longstanding issues like unnecessary use of the emergency department for health care and social service needs. The remaining community-based HIE, Reliance eHealth Collaborative, and other data aggregation tools, are being leveraged to help make patient information available when and where it is needed and help health plans and providers with reporting around quality metrics, identifying populations for targeted interventions, and understanding health care outcomes at a population level. The national interoperability networks (e.g., Carequality, etc.) and vendor-driven solutions are being used to pull in important health care information about Oregon patients from other states and jurisdictions to better inform patient care.

However, not all providers have been able to benefit from these efforts equally. Behavioral health providers still face significant regulatory, technical, and operational hurdles to

implementing interoperable health IT, and oral health providers have not adopted EHRs to the same extent as physical health, with many using a dental practice management solution in lieu of an EHR[14]. Rural health providers also experienced barriers in adopting interoperable health IT despite the financial incentives provided under HITECH (see also the Connecting the Care Team concept paper). Figure 1 below shows how key provider types are participating in the primary HIE solutions in Oregon today (for more detailed information about HIE participation in Oregon today, review OHA's 2022 Health IT Report to Oregon's HITOC here).
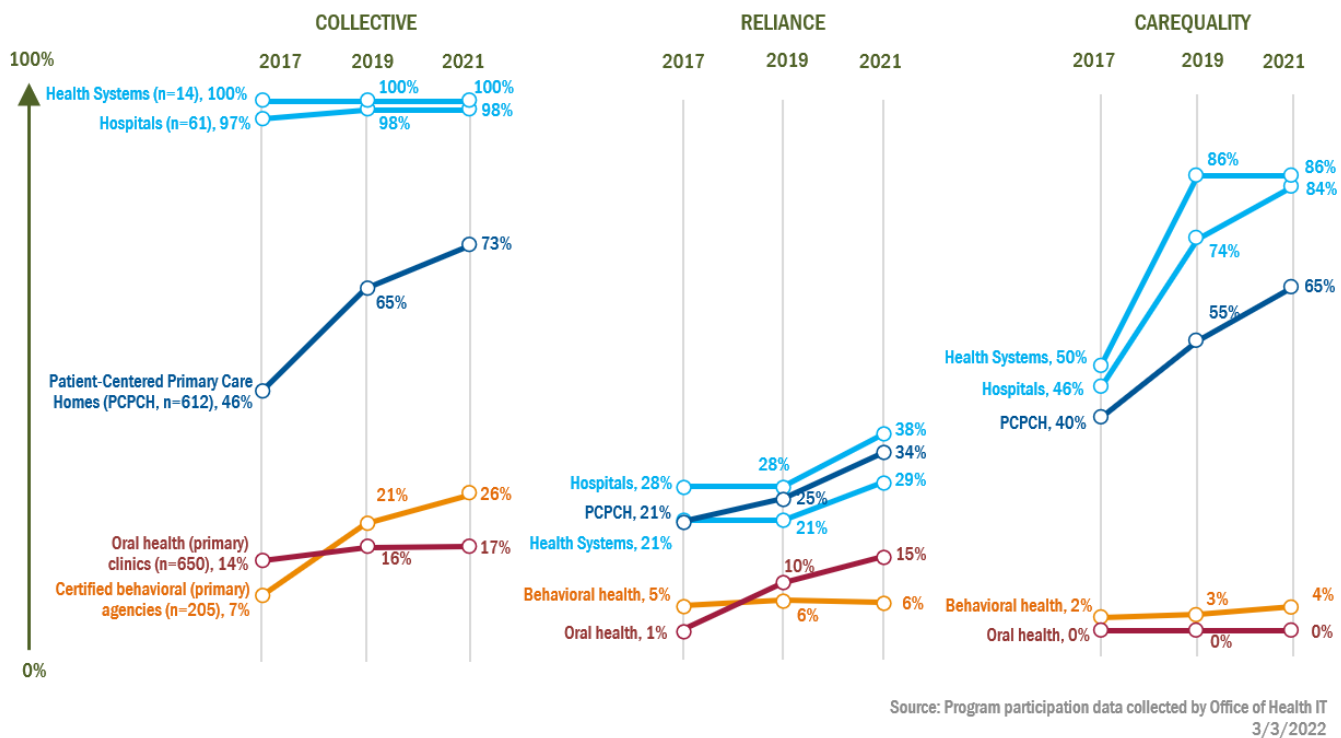

Source: Program participation data collected by Office of Health IT
3/3/2022

Figure 1: Adoption of Various HIE Tools in Oregon

Serving HIE Solution End Users Through Increased Transparency

The Workgroup deliberated on how to improve the adoption and spread of HIE solutions among behavioral health, oral health, long-term post-acute care, and others and those strategies are contained in the *Connecting the Care Team* concept paper. Further, **the Workgroup recommends making additional information on primary HIE solutions in Oregon more publicly available so that consumers, HIE decision-makers, and others can access helpful information about them at-a-glance.** See the following sample tables to help visualize what the Workgroup is suggesting.

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[14] https://www.oregon.gov/oha/HPA/OHIT-HITOC/Documents/HIE_TaleofTwoWorlds.pdf

Contributions and Benefits

At-a-Glance Information on Oregon HIE Solutions – Contributions & Benefits

The sample table below was suggested by HIE Workgroup members to help Oregon consumers and health care entities to understand the scope and reach of HIE solutions commonly used or referenced in Oregon. Each HIE solution is unique, and the following table may help clarify how entities contribute both data, funding, and other resources to their success. There are additional HIE solutions not included in this table which are less commonly used, including the federal eHealthExchange and Commonwell.[15]

Partner Type	Collective Medical (via HIT Commons)	Reliance eHealth Collaborative	CareEverywhere (only Epic users)	Carequality[16]
Health System/Hospital	$ ✉ ☑ ☆	$ ✉ ☑ ☆	$ ✉ ☑ ☆	✉ ☑ ☆
Health Plan/CCO	$ ✉ ☑ ☆	$ ✉ ☑ ☆		
Clinic/Primary Care	✉ ☑ ☆	✉ ☑ ☆	$ ✉ ☑ ☆	✉ ☑ ☆
Behavioral Health	✉ ☑ ☆	✉ ☑ ☆	$ ✉ ☑ ☆	✉ ☑ ☆
Oral Health	✉ ☑ ☆	✉ ☑ ☆	$ ✉ ☑ ☆	✉ ☑ ☆
Long-Term Post-Acute Care	✉ ☑ ☆	✉ ☑ ☆		✉ ☑ ☆
Public Health	✉ ☑ ☆	✉ ☑ ☆		
Other HIEs	$ ✉ ☑ ☆	✉ ☑ ☆		✉ ☑ ☆

Legend:
- $ = contributes financially to support and/or participate in the HIE (includes user fees)
- ✉ = contributes data to the HIE
- ☑ = contributes in-kind, or other resources to implement/support the HIE
- ☆ = accesses and/or uses the HIE to benefit patient care

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[15] 2022 Health IT Report to HITOC:
https://www.oregon.gov/oha/HPA/OHIT/Documents/2022ReportOnOregonsHealthITLandscape.pdf
[16] While Carequality does not directly charge data contributors/end users, the connection to Carequality usually occurs through an implementer and that vendor may charge the end user fees to access the Carequality network.

Data Sources

At-a-Glance Information on Oregon HIE Solutions – Data Sources

While the above table looked at contributions by entity type, the sample table below was intended to look more closely at different types of health care information that is commonly shared through HIE solutions in Oregon. The sample table offered would require future work to ensure accuracy (recommended at least every 6 months). HITOC members also suggested that a table like this could call out the geographic scope of data shared (e.g., statewide vs. specific regions, etc.).

Partner Type	Collective Medical Platform	Reliance eHealth Collaborative	CareEverywhere (only Epic users)	Carequality
Hospital Encounters	●	◐	◐	
Clinic and Primary Care Encounters	◐	◐	◐	◐
Behavioral Health Encounters	◐	◐	◐	
Oral Health Encounters			○	
Hospital Summary of Care (C-CDA)	◐	◐	◐	◐
Outpatient Summary of Care (C-CDA)	○	◐	◐	◐
Laboratory Results	○	◐	◐	
Imaging		◐	◐	
Closed-Loop Clinical e-Referrals	○	◐	◐	
Claims Data	◐	◐	○	
Post-Acute Care Data	◐	◐	◐	○
State Public Health Registries	◐	◐		
Health Care Cost Data				

Legend:
- ○ = at least one contributor of data source
- ◐ = multiple contributors for this data source
- ● = comprehensive source of data in Oregon, may include other state data

At-a-Glance Information on Oregon HIE Solutions – Governance

The Workgroup also suggested looking across different HIE solutions in the context of how the solution is governed and incorporated, including information related to revenue sources and involvement of consumers and/or at-large members on governing boards. This sample table is not all-inclusive. In some Oregon communities, a regional or locally-based steering committee plays a governance-type role related to HIE, such as prioritizing and identifying common health IT solutions.

Information Type	HIT Commons	Reliance eHealth Collaborative	Epic CareEverywhere	Carequality
Business Type	LLC	501c3 NPO	Corporation	501c3 NPO
Year Founded	2017	2011	1979	2014
Board Member Count	17	12, max 21	Private	8
Public Entities on Board?	Yes, 1 seat	No	No	No
Consumers on Board?	1 at-large member	2 community members	No	No
Revenue Source(s)	Member Dues from hospitals, CCOs, health plans, OHA	Participant Fee Agreements	Participant Fee Agreements	Implementer (vendor) Fees
Primary Vendor Name (at time of print)	PointClickCare (AKA Collective Medical)	Various	Epic	Various

Legend:
LLC   = Limited liability company
NPO   = Non-profit organization

HIE Governance

Governance of HIE refers to the structure and processes for decision making on key HIE topics such as: establishing and maintaining value for participants/contributors; ensuring financial solvency and sustainability; policies for data stewardship; monitoring and measuring impact; facilitating multi-organizational priorities and needs; exploring expansion; and guiding strategic direction. Given that Oregon's HIE environment is a multi-faceted mix that includes statewide-funded solutions, vendor-driven solutions, and regional HIEs, HIE governance is also multi-faceted and multiple tables exist to govern specific solutions (see Table in prior section).

The HIE Workgroup noted the complexity of governance of HIE in Oregon. The Workgroup provided the following feedback on the present HIE governance environment:

- Efforts should be made to ensure HIE solutions can leverage new state and federal funding opportunities as they arise
- Efforts should be made to clarify which governance boards or entities are the ultimate decision-makers on HIE solutions in Oregon, and their hierarchical relationship to other entities
- Governance should leverage successful approaches to supporting HIE solutions in Oregon
- As HIE solutions evolve to include new use cases, there should be increased transparency into what additional representation is needed or being added to HIE governance tables in Oregon

While the Workgroup does not recommend any immediate strategies for HIE governance in Oregon, beyond providing the information above, the Workgroup did conclude that addressing governance issues is critical to the long-term success of HIE solutions and should be reviewed and discussed in future iterations of state strategic planning.

The Workgroup also considered the concept of a health data utility model, which is being promoted by Civitas Networks for Health, the national trade organization for HIEs. Civitas defines a health data utility (HDU) as a statewide model or entity with the advanced technical capabilities to combine, enhance, and exchange electronic health data across care and services settings for treatment, care coordination, quality improvement, and public and community health purposes. HDUs enable specific, defined use cases with privacy and security that exceeds federal minimum standards established by HIPAA and as amended by HITECH to ensure patient privacy and appropriate data use. The Workgroup explored some of the main components of an HDU, as identified by Civitas, and identified some of the ways that these components already exist in the state of Oregon:

Health Data Utility Components	Oregon Example(s)
State policy levers including incentives and/or mandates	CCO 2.0 requirements for HIE/hospital notification system; HIE Onboarding Program Funds
Broad partner participation, connectivity, exchange, and community-level engagement	Reliance eHealth Collaborative; Collective Medical platform; regional HIE collaboratives; etc.
Mature use cases in place for Medicaid and public health	PDMP integration; COVID-19 Vaccine information
Multi-partner, transparent corporate and data/network governance	HIT Commons, Reliance, others
High standards for data privacy and security going beyond the baseline of state and federal laws	Virtually all solutions used in Oregon have a SOC-2 and/or HITRUST certification

Although the Workgroup spent time discussing the HDU model as a structure for HIE governance, members felt more exploration of HDU and how it is implemented in other states was needed. At the time of publication, only one state—Maryland—has passed legislation specifically referring to HDU. Maryland designated this function to its state-designated entity for HIE, CRISP. Based on this, the Workgroup encourages that future work look more seriously at HDU implementation as a promising approach for HIE governance in Oregon.

For future HIE strategy development:

- HITOC may benefit from further exploration and potential alignment with the HDU framework as it represents the collective knowledge and understanding of HIE governance nationally, including aligning with federal efforts to support HIE and interoperability from CMS, ONC, and other federal agencies

Additional HITOC comments on Governance:

HITOC members discussed these governance information and considerations from the HIE Workgroup at their April 2023 meeting. Some additional comments from HITOC members included:

- Scope of governance and considering HDU:
    - Consider focusing on governance via an HDU model, which may encompass more than HIE and include CIE. Including CIE in scope would needs to include consumers and the organizations providing social services to participate in discussions and help drive decisions for a utility we're all engaged in and utilizing. HITOC should set the vision for that
    - We need to be clear on the difference between HDU and HIE in regard to governing, since an HDU implies adding additional information (CBO/CIE data, claims, public health data, etc.) to an HIE. Governance would need to be expanded to include those directly contributing, utilizing, and generating additional data
    - Given that we don't have a statewide HIE or CIE strategy, additional clarity is needed on what we're going to govern and what is the authority (e.g., whether legislative or otherwise)
- To ensure that HIE is achieving goals in Oregon, governance would need to be expanded to be less diffuse and more inclusive should include a focus on end metrics, such as key performance measures for HIE, and an organization to watch over performance towards end metrics.
- HITOC could identify principles needed to advance governance, such as public/private, inclusivity, vendor neutral or not dependent on a single HIE vendor; and could include exploration of an HDU.
- Consider how to bring diversity to governance tables, both multicultural and multilingual, and youth should be involved. Planning is better when you have diversity.
- As HIE and governance evolve, our responsibility is to everybody; we should be accountable to the consumers in Oregon for whatever governance evolves, and whatever strategy we set out. Consumers need to help set priorities. Focus on areas such as

annotation, requests for removal or clarification - efforts that would benefit consumers through control of their health information.

Helpful Definitions

Data refers to raw facts that are collected and stored electronically. Contrast with information, defined below.

Electronic Health Record (EHR) refers to a digital version of a patient's paper chart. EHRs are real-time, patient-centered records that make information available instantly and securely to authorized users. While an EHR does contain the medical and treatment histories of patients, an EHR system is built to go beyond standard clinical data collected in a provider's office and can be inclusive of a broader view of a patient's care[17].

HIE refers both to the act of exchanging health-related information between disparate electronic systems like EHRs (the "verb") as well as businesses or organizations that facilitate the sharing of health-related information between disparate systems (the "noun"). There are several examples of both the verb and noun forms of HIE in Oregon today, including:

- **National network and vendor-driven HIE**: many providers access information from external organizations via a query-based network (either driven by federal government activities or EHR vendors). Carequality, CommonWell Health Alliance, and eHealth Exchange are examples of national HIE networks. In addition, EHR vendors like Epic (which is used by many large health systems in Oregon) offer products like CareEverywhere to move information between distinct instances of Epic EHRs from across the country where different providers share the same patient. These networks require information to be based on standardized data templates to ensure it can be incorporated into the EHR in a way that is easy for providers to access within their workflow (see the definition for interoperability, below).

- **Community-based or Regional HIE**: this refers to a standalone entity (typically a nonprofit organization) that acts as a centralized hub or repository of health information from disparate sources. Oregon has one regional community-based HIE, Reliance eHealth Collaborative (Reliance). Reliance includes a community health record, which brings together information from many participating providers into a unified record for each patient, as well as other HIE functions. Participants include physical, behavioral and oral health providers as well as CCOs and health plans, local public health, and a few correctional facilities. Reliance is active in two-thirds of Oregon's counties.[18]

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[17] https://www.healthit.gov/faq/what-electronic-health-record-ehr

[18] For more information about which Oregon entities are participating in Reliance: https://reliancehie.org/participants/.

- **Specialized HIE solutions:** refers to software solutions offered by vendors that are not acting as either an EHR or a community/regional HIE. Many of these solutions either specialize in general data integration or focused activities like referrals or electronic notifications. Like most community/regional HIEs, they work between multiple EHR vendors. An example of this in Oregon is the Collective Medical platform, which connects a wide array of health systems, hospital emergency rooms, medical groups and clinics, health plans, CCOs, behavioral health providers, post-acute care providers, and OHA/ODHS programs via a network of real-time, standardized hospital encounter information.

Information refers to data that has been given context, making it relevant for patients and their care teams to use to improve health outcomes. Contrast with data, which is defined above.

Interoperable, or **interoperability**, refers to the ability for a distinct health IT system to communicate and exchange data meaningfully to other systems without significant human intervention. Interoperability is the federal government's goal in its activities through ONC and other federal agencies like the CMS.

Social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks[19]. Typical SDOH data that might be relevant in an HIE context include, but are not limited to housing status, food insecurity status, transportation needs, educational access, employment status, and other such determinants.

Value-based payment (VBP): Value-based payment is a reimbursement model where providers receive payment that explicitly rewards the value that can be produced through the provision of more targeted, cost-effective, and individualized health care services. Whereas the traditional fee-for-service payment model results in a fragmented system and unnecessary costs, transitioning to VBP increases flexibility and incentives for providers to deliver patient-centered, whole person care.

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[19] https://health.gov/healthypeople/priority-areas/social-determinants-health