



Introduction

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 a set of strategies and recommendations to accelerate, support, and improve HIE across the state.

Beginning in May 2022, the HIE Workgroup met monthly to discuss priority HIE needs and opportunities in Oregon. A primary focus of the Workgroup was identifying strategies to improve how HIE promotes care coordination among different provider types, including behavioral health, oral health, long-term post-acute care, rural practices, and other providers. The following concept paper summarizes the challenges and opportunities around increasing adoption of HIE across provider types in Oregon to better serve patient needs. This concept paper will be considered by HITOC as they update [Oregon’s Health IT Strategic Plan](#).

There is reference throughout this paper to HIE, electronic health records (EHRs), interoperability and other terms used regularly in this policy area. For definitions and other information, please review the [Statewide Vision for HIE](#) concept paper.

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Digital Inequity in HIE Solutions

Problem Statement

OHA has a goal to eliminate health inequities by 2030. To accomplish this goal, it is critical that all members of a patient’s care team have access to relevant health information to ensure patients have a consistent experience and receive informed, coordinated care. Inequitable access to HIE by providers is intrinsically linked to inequitable access to informed, appropriate care for patients. For more information on how provider access to HIE can impact patient care and health equity, see the OHA report on HIE: [A Tale of Two Worlds](#).

Connecting the Care Team



HIE Adoption and Closed-Loop Clinical Referrals

Digital inequities are the gaps in access, knowledge, and/or ability to use digital tools and technology, for example, between different populations or regions. Digital inequities exist for both providers and other health care workers as well as patients. While many digital inequities need to be addressed, to ensure progress toward greater HIE adoption and statewide interoperability in Oregon, the HIE Workgroup recommends focusing strategies on addressing digital inequities faced by the following provider populations: 1) behavioral health; 2) oral health; 3) rural community providers; and 4) post-acute care, with an important distinction of recognizing both skilled nursing facilities (SNFs) and nursing homes, as well as community-based entities like adult foster homes and other models of care.

HIE Adoption in Oregon

Although digital inequities exist, Oregon has many bright spots in its effort to adopt HIE across the state. Oregon has long been a state with high EHR adoption. EHRs digitize health information, making it easier to share this information through HIE. Oregon also tracks the use of HIE solutions in the state by different categories of providers. As shown in the graphic below, HIE adoption among physical health providers is quite strong for some of the HIE solutions that are used broadly in Oregon. In comparison, adoption rates for HIE (and also, notably, EHRs) by behavioral health and oral health providers are significantly lower. 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](#)).

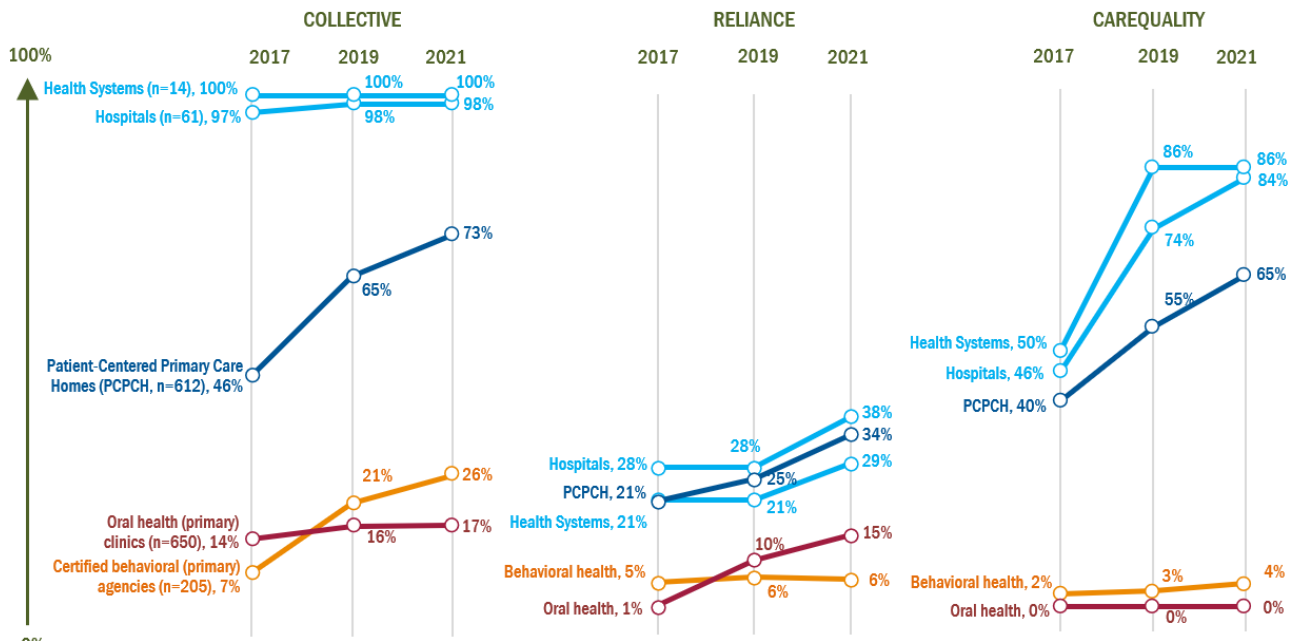


Figure 1: Adoption of Various HIE Tools in Oregon



Patient Story: Barbara

Barbara is a 68-year-old female who recently suffered a stroke and was transported by ambulance to a Portland-area stroke center from her residence on the Oregon coast. Like many coastal areas, Barbara's community lacked access to hospital and provider services that she would need for treatment, requiring coordination across regions and transportation complexities. While being treated at the hospital for her stroke, she was seen by a neurologist and an internist. While Barbara did recover enough to be discharged from the hospital, she was referred to a skilled nursing facility (SNF) as she had several needs for occupational therapy, physical therapy, speech rehabilitation and required the use of a walker to move around. The hospital discharge planner and Barbara's Medicare Advantage plan care coordinator were unable to find a SNF placement in her home county, and Barbara was ultimately taken to a SNF in Hillsboro, about an hour's drive away from her residence.

Neither her primary care provider, nor the hospital, had visibility into Barbara's health status at the SNF. While there, Barbara suffered additional complications from a blood clot in her leg and was readmitted to a hospital in Hillsboro. After stabilizing her it was decided that Barbara would benefit from home health services upon discharge, so that she could recover at her residence on the coast. Without an immediate family member to help her, Barbara needed non-emergent medical transport to get back to her home, and finding this resource proved to be difficult—forcing Barbara to stay at the hospital longer.

HIE Questions:

- How will Barbara's primary care provider access her medical records from the multiple hospital visits and the various specialist notes?
- How will Barbara's primary care provider get additional information about what occurred at the SNF which led to her readmission to the hospital in Hillsboro?
- How will Barbara's family, who is travelling into Oregon to help take care of her, be able to navigate this complex encounter and receive the information they need?

Overarching Objectives and Strategies

As described in the [Statewide Vision for HIE](#) concept paper, there are three overarching objectives identified by the HIE Workgroup that relate to *Connecting the Care Team*, each with a set of strategies. These overarching components apply to each of the focus areas described in the rest of this paper. For more information about these objectives, refer to the [Statewide Vision for HIE](#) concept paper.



Objective 2: Address digital inequity and promote HIE for all

- Provide funding and other support to behavioral health, oral health, and small independent physical health providers to adopt interoperable EHRs and/or participate in HIE
- Explore approaches to lower the cost of interoperability products offered by EHRs and other health IT vendors
- Develop HIE adoption strategies for entities that were not included in federal EHR incentive programs

Objective 3: Enable broad and timely care coordination

- Increase the use of electronic, closed-loop clinical referrals
- Add more high-quality information from different sources
- Ensure that data sources via HIE are integrated into EHRs

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

Educate and encourage Oregon entities to participate more broadly in HIE. For example:

- Identify and prioritize the standardized and non-standardized data that should be included in HIE efforts
- Prioritize who should contribute data and when
- Identify barriers to information sharing and develop mechanisms to address these barriers and discourage data silos; which may include governance efforts

Behavioral Health¹

Background Context

Behavioral health organizations continue to experience significant challenges in access to health IT and HIE functionality. Part of this is due to history—given that most behavioral health providers were excluded from financial incentives for EHR adoption as part of the [Health Information Technology for Economic and Clinical Health \(HITECH\) Act \(2009\)](#). Without these incentives, some behavioral health providers have lagged behind their physical health colleagues in terms of health IT adoption, including HIE solutions. Behavioral health partners report that EHRs available for behavioral health clinics do not adequately support their full range of needs. In addition, lack of resources, and concerns about privacy and security of

¹ Per [OAR 309-008-0200](#) “Behavioral Health” means mental health, mental illness, addictive health, and addiction and gambling disorders. “Behavioral Health Treatment Services” means mental health treatment, substance use disorder treatment, and problem gambling treatment services.



information are barriers to behavioral health providers using health IT and exchanging information.

In addition to a lack of financial incentives, there are specific regulatory barriers to sharing some behavioral health information. [42 CFR Part 2](#) (hereafter Part 2), a federal regulation that limits the sharing of information about substance use disorder (SUD) treatment, requires patient consent in almost all instances—a much higher bar than HIPAA², which permits data sharing for many health care purposes without specific patient consent. The concern of violating Part 2, either intentionally or unintentionally, is frequently cited by behavioral health leaders as a primary reason for their lack of HIE participation.

Recent changes to Part 2 were intended to reduce this barrier. For example, changes were made to the Part 2 rule in 2017 to allow for a patient's general consent to share information with HIE solutions, with the limitation that this information can only be shared with the patient's treating providers. The federal government has recently announced additional proposed changes to Part 2 which would simplify the consent process to a single step, as well as align the enforcement mechanism of Part 2 with that of HIPAA. These changes attempt to balance the competing priorities of sharing SUD data to provide more informed health care treatment and protecting the privacy of individuals who seek SUD treatment. Due to the stigma often associated with SUD treatment, breach of this privacy may risk consequences like loss of employment or housing if information were to fall into the wrong hands. It is still common practice among EHR and other technology vendors to isolate patient records that contain SUD information in their entirety—preventing any information in these records from being visible to treating providers or any other care team members. This all-or-none approach to HIE is unlikely to meet patient or provider needs in the long term. Technology will need to get better at parsing out different types of sensitive information to promote HIE activities while complying with privacy laws.

Part 2 permits patients to request a report on all disclosures that a provider has made under their Part 2 consent. Behavioral health representatives on the HIE Workgroup flagged that many EHRs struggle to provide this accounting. The HIE Workgroup's [Consumers, Privacy & Security, and Data Quality](#) concept paper emphasizes the importance of educating patients about their role in holding the healthcare system accountable for transparency in information sharing. For SUD treatment under Part 2, this means that patients should be educated and empowered to request this report in a means that is convenient for them. This is one important step toward involving patients more closely in how their behavioral health information is shared.

² Health Insurance Portability and Accountability Act (HIPAA), the federal regulation that governs the sharing of health information in the United States for all health care providers and health plans.



The Workgroup also reviewed [recommendations](#) from HITOC's Behavioral Health HIT Workgroup from 2019 to inform their work. The Workgroup was also informed by [interviews and a survey](#) of behavioral health providers.

Behavioral Health HIT Workgroup (2019) Top Priority Recommendations

1	Support BH agencies without an EHR or with an insufficient EHR to adopt an EHR, including: <ul style="list-style-type: none">• Develop a list of preferred EHR vendors to help support the EHR adoption/upgrade decision making process*• Promote hospital/health systems' support for behavioral health EHR adoption/upgrade
2	Continue existing work on HIE, and bolster with additional strategies, including: <ul style="list-style-type: none">• Encourage larger organizations/hospitals/health systems to connect and contribute patient data to an HIE (e.g., Community Health Record)• Connect HIT systems to lower the effort required to access patient information across organizations (e.g., fewer clicks)• Information sharing guidance/support related to privacy & security (e.g., 42 CFR Pt 2, HIPAA)
3	Support improved understanding of HIT/HIE, including: <ul style="list-style-type: none">• Provide HIT/HIE education• Create shared learning opportunities across a variety of topic areas (e.g., EHR adoption and use, HIE connectivity and use, data analytics/business intelligence, privacy and security)• Landscape assessment of EHRs/HIE
4	Modernize state reporting systems to allow for improved interoperability with EHRs/HIE and data reporting back to agencies <ul style="list-style-type: none">• Implement modernization efforts under the Community Outcome Management and Performance Accountability Support System (COMPASS) project

For more information, see the [BH HIT Workgroup webpage](#).

Behavioral Health Strategy Recommendations

In addition to the overarching objectives and strategies above, which include fundamental support for behavioral health provider adoption of interoperable EHRs and provider education, the Workgroup identified the following specific focused recommendations for behavioral health.



Focused Recommendations:

1. **Identify high value behavioral health information to be shared via HIE.** The Workgroup identified that more work is needed to clarify what types of behavioral health information are of primary importance to be shared through HIE solutions to drive value for behavioral health and other end users like primary care providers and hospitals. Some examples of high-value behavioral health information identified by the HIE Workgroup include:

- Medications
- Behavioral health diagnosis
- SUD history, when appropriate or when informed consent exists

The Workgroup acknowledges that these examples are only a small sample and encourage more effort of this kind in Oregon. This is particularly important for data types that do not currently have a federally recognized standard. The Workgroup also discussed how some valuable behavioral health information is found within provider notes or is otherwise not parsed out which creates barriers for data sharing. Members pointed out that natural language processing (NLP), artificial intelligence, and other technologies are starting to unlock some of this information from patient charts, and these kinds of information sources should also be considered as part of this assessment work. It will be critical to engage consumers in this work, as concerns about patient protections need to be considered when looking at these new technologies.

Lastly, Workgroup members noted that this assessment could also identify what types of information should generally not be shared in Oregon. For example, under existing law, psychotherapy notes cannot be shared in HIE³. The Workgroup anticipates there being other types of information that might need to be restricted in this way.

HITOC noted that any future workgroup or committee that looks at this question of high value behavioral health information needs to be tied to ongoing HIE governance efforts where principles of patient privacy and impacts of data sharing are monitored. They suggested that any such effort should prioritize diversity and broad representation to ensure that the many considerations around impact of sharing behavioral health information are identified and mitigated. Lastly, HITOC identified the importance of cross-referencing behavioral health information with other important data insights like housing insecurity/social determinants of health concerns.

2. **Promote greater accordance to Part 2 rule from health IT vendors.** As discussed above, the Workgroup recommends that future work or rules be put in place to ensure that health IT vendors are complying with all components of, as well as the spirit of, the

³ See 45 CFR § 164.524, which bars even the patient themselves from accessing psychotherapy notes under HIPAA.



Part 2 rule. Part 2 is not intended to hinder appropriate data sharing for care coordination. Patients in Oregon are entitled to request a report of all Part 2 disclosures from any health IT vendor—including EHRs and HIEs—to ensure that health IT vendors are held accountable to the requirements of Part 2. Furthermore, the Workgroup believes that more could be done by vendors to parse out Part 2 information from patient records to encourage greater sharing of behavioral health information through HIE solutions.

3. **Private sector investment in behavioral health IT infrastructure.** One of the strategies recommended by the 2019 Behavioral Health HIT Workgroup includes encouraging the private sector to invest further in behavioral health technology infrastructure. The HIE Workgroup identified that this approach is still a relevant strategy today. By private sector, the Workgroup is predominantly referring to health systems and health plans. This strategy acknowledges the benefits to health systems and health plans/coordinated care organizations in having behavioral health information more integrated into overall health care and encourages these parties to help cover the costs of sometimes cost-prohibitive health IT solutions for many community behavioral health providers. Poorly coordinated care for patients experiencing behavioral health issues negatively impacts their health and the entire health care system. Investment could include covering costs of an EHR or HIE solution for behavioral health providers, and/or investing in training or other support for behavioral health to use HIE solutions.
4. **Health IT workforce support and development.** One key insight provided by HIE Workgroup members was that many health IT professionals in the behavioral health field feel isolated and/or a lack of professional support or mentorship from the larger health IT workforce of Oregon. The Workgroup encourages more effort to identify the health IT/HIE contact(s) at different organizations across the state and to provide more development opportunities for these professionals, including education, training, networking, and/or professional advancement. This recommendation would also extend to supporting organizations in finding and recruiting health IT workforce.

Oral Health

Background Context

Oral health providers—including dentists, orthodontists, and others—also face hurdles to HIE participation. Unlike many behavioral health providers, dentists were included in the HITECH incentives that led to the vast adoption of EHRs⁴. Despite this, many dentists opted not to

⁴ Federal EHR Incentives were available for specific provider types, including physicians, nurse practitioners, dentists, and some physician assistants. While some behavioral health providers were eligible, like psychiatrists and psychiatric nurse practitioners, many types of behavioral health providers were not eligible like licensed clinical social workers, etc.



purchase an EHR using these funds and instead invested in a more streamlined dental practice management software (DPMS). DPMSs are software solutions that assist dental practices with billing and charting but are not certified by the Office of the National Coordinator for HIT (ONC) like EHRs and do not have the same expectations for interoperability. This trend toward DPMSs and away from EHRs suggests that some dentists in Oregon may not be aware of the value of an EHR for their daily operations, including interoperability advantages that EHRs offer compared to DPMSs. A cursory search for DPMS vendors online will mention many advantages—but interoperability is rarely mentioned.

A [2021 study](#) by the Oregon Rural Practice-Based Research Network (ORPRN) on dentists' views of EHRs and HIE identified several short-term needs:

- Improve the ability for dentists to pull reports from software solutions with relevant patient information;
- Improve the ability for dentists to manage referrals more seamlessly;
- Improve the ability to share x-rays—by far the most common type of data that needs to be shared between oral health providers; and
- Improve the bi-directional nature of information sharing back to dentists (many dentists flagged that HIE feels like a one-way street from their systems to physical health EHRs with little beneficial information flowing back to them).

The Workgroup considered these findings, but ultimately focused its recommendations below on addressing systemic issues around how oral health is considered (or not) in HIE strategy. Notably, the ORPRN report asked dentists about EHRs while, as mentioned above, many dentists use DPMSs. The needs listed above still apply to DPMSs, but oral health providers using DPMSs will face even greater barriers in participating in HIE because DPMSs function as closed systems. More work is needed to understand the technology environment of oral health providers and how it differs from more traditional physical health-based EHRs.

Oral Health Strategy Recommendations

In addition to the overarching objectives and strategies described above, the Workgroup identified the following specific recommendations for oral health.

Focused recommendations:

1. **Support oral health as part of the health care system.** A broader recommendation of the Workgroup was to do more to ensure that both health care leaders and patients understand the important role of oral health to the broader health care system. As one Workgroup member put it, we need to “put the mouth back in the body.” Achieving this recommendation would have many downstream impacts on how oral health providers use HIE. An example of acting on this recommendation could be to promote the role of dentists in preventing substance use disorder if they are prescribing pain medication by



having dentists use HIE solutions to connect to the [Prescription Drug Monitoring Program \(PDMP\)](#). Another action could be to give dentists access to vital readings via an HIE solution to promote the emerging role of dentists in testing hemoglobin A1C for patients with diabetes.

2. **Cross-sector focus groups on valuable data**. Similar to the behavioral health recommendation, the Workgroup recommends that OHA or another entity facilitate one or more cross-sector provider focus groups to identify which oral health data is considered high-value in HIE solutions. The recommended focus groups should include physical health, behavioral health, oral health, long-term post-acute care, and others to ensure the broadest consensus possible.
3. **Support oral health exchange of imaging information**. Per the findings from the [2019 ORPRN report](#), the Workgroup recommends supporting oral health providers in identifying and implementing HIE solutions to exchange x-ray and other imaging data between oral health providers. This could reduce waste and encourage greater participation in HIE.
4. **Explore HIE opportunities for Dental Practice Management Solutions**. DPMSs are distinct from EHRs, and future analysis or assessment of dental use of health IT and HIE should look more closely at any HIE functionality of DPMSs and how it differs from EHRs. Future strategies need to explore how HIE solutions can integrate with DPMSs and engage dental providers within their own systems and workflows.

Rural Communities

Background Context

The picture of both EHR and HIE adoption in rural communities is different than in more urban environments, as observed by a recent [GAO report](#)⁵ on HIE adoption (see figure 2). EHR systems are significant expenses for a provider organization and are typically precursors to HIE participation. Providers in rural communities are often more resource-constrained than large urban health systems. In addition, rural communities tend to face greater geographic distance between patient hubs like hospitals and skilled nursing facilities, requiring different approaches to coordination of transportation needs and follow-up care. In Oregon, many rural communities are close to state borders and providers there need access to information not only from HIE solutions used in Oregon, but also those used in neighboring states like Washington, Idaho, and/or California.

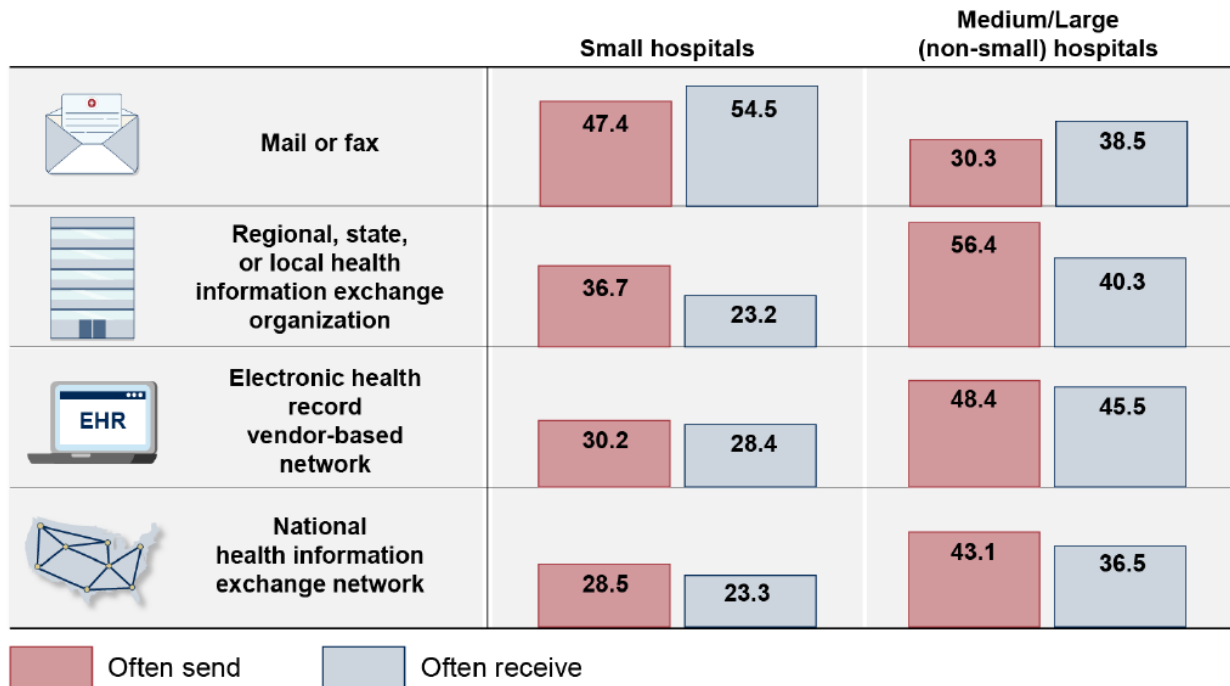
One of the challenges to HIE adoption by both health care entities and patient communities in rural settings is inconsistent or poor access to high-speed broadband internet. HIEs rely upon

⁵ United States Government Accountability Office (GAO) recently released a report on the use of HIE nationally.



internet access, as most are now leveraging cloud services and other means to store and transfer information. The HIE Workgroup noted that addressing gaps in broadband access was outside of their scope but noted that this barrier continues to provide additional challenges to HIE in rural communities.

Exchange Methods Often Used among Acute Care Hospitals by Size, 2021



Source: GAO analysis of American Hospital Association Annual Survey Information Technology Supplement survey data (data); GAO (icons). | GAO-23-105540

Figure 2: GAO graphic on data exchange methods of hospitals by size

Rural Community Strategy Recommendations

In addition to the overarching objectives and strategies described above, the Workgroup identified the following specific recommendations for rural community health.

Focused Recommendations:

1. **Prioritize rural communities in work to increase the use of closed-loop clinical referrals.** The Workgroup members that live and work in rural communities emphasized the importance of referrals in these regions. As discussed above, many rural providers are smaller entities compared to large urban health systems and this often leads to more outbound referrals to specialists and other services that rural providers cannot offer. For rural providers near state borders, these referrals may be sent to non-Oregon providers. Electronic approaches to clinical referrals need to consider the



interoperability between Oregon and non-Oregon providers when patients are crossing state lines in rural areas of Eastern and Southern Oregon. See further discussion on closed-loop clinical referrals later in this paper.

2. **Health IT workforce support and development.** As discussed above in the behavioral health strategies, Workgroup members identified the geographic isolation and lack of professional support many health IT workers experience in rural communities. The Workgroup encourages more effort to identify the health IT/HIE contact(s) at rural provider organizations and to provide more professional development opportunities for these workers, including education and training, mentorship, networking, and/or professional advancement opportunities. This recommendation would also extend to supporting organizations in finding and recruiting health IT workforce.

Long-Term Post-Acute Care and Community-Based Long-Term Care

Background Context

The HIE Workgroup prioritized long-term and post-acute care providers as notable gaps for HIE adoption in Oregon. Many transitions occur between hospitals and these types of providers and communication errors and lack of HIE can contribute to adverse events for patients in these settings, including readmission to the hospital and/or inability to discharge from the hospital when a provider cannot be found.

Long-term post-acute care providers refer to most nursing homes, including SNFs, home health, and other services provided by a licensed medical provider.

Community-based long-term care providers include but are not limited to adult foster homes, independent and assisted living facilities, etc.

Like behavioral health, most post-acute care providers were excluded from federal incentives to adopt EHRs. Despite this, today, many SNFs and other long-term post-acute care providers do have some form of an EHR. Not all of them support interoperability to the degree that ONC requires from certified EHR technology. Noted as a possible future effort was the need to encourage post-acute care EHR vendors to do more to facilitate data sharing and promote interoperability with physical, behavioral, and oral health.

Community-based post-acute care providers are more synonymous with other community-based organizations that do not typically use HIPAA-compliant health IT in their operations. Future efforts to promote HIE among these provider types will need to consider the lack of incentives and opportunities they have had in the past to adopt EHR or HIE solutions, and the difficulty that will exist in digitizing the information they know and/or collect on the patients they serve.



Post-Acute Care Strategy Recommendations

In addition to the overarching objectives and strategies described above, the Workgroup identified the following specific recommendations for post-acute care. The recommendations specify whether it applies to (as defined above) long-term post-acute care, community-based long-term care, or both.

Focused Recommendations:

1. **Identify ways for post-acute care entities to participate in closed-loop referrals using HIE solutions.** As discussed further below, increasing the use of electronic clinical referrals is a key priority identified by the HIE Workgroup. Part of this strategy includes identifying ways that post-acute care providers may participate in closed-loop referral processes, particularly federated approaches like 360X (see below), which is tied to use of EHR systems (many post-acute care providers do not use an EHR).
2. **Include post-acute care in state reporting on health IT/HIE use to better track adoption and HIE needs for these providers.** HIE Workgroup members identified that state efforts to conduct environmental scans or other statewide data reporting on use of EHRs, other health IT, and HIE solutions needs to begin including both long-term and community-based post-acute care providers. Each group is distinct in terms of their adoption of technology and should be considered separately in future efforts.
3. **Explore HIE opportunities for post-acute care.** HITOC and the HIE Workgroup identified promising focus areas for future HIE use case development, including supporting medication reconciliation when patients transition from the hospital to a post-acute care facility. One member specifically called out medication management—across all provider types—during end-of-life care. Special attention needs to be paid to community-based post-acute care providers for this recommendation, as for many use cases that involve these providers, the information is likely manually collected and not yet digitized. Lastly, the Workgroup identified that additional strategies should be explored that communicate the availability of post-acute care services, to assist with issues related to hospital and other care setting transitions of care.

Other Strategies: Closed-Loop Clinical Referrals

Background Context

Early in the HIE Workgroup's discussions, it became evident that broad use of closed-loop clinical referrals was a desired outcome of HIE in Oregon. Closed-loop referrals were noted as critical to helping achieve health care transformation efforts like value-based payment. A clinical referral is defined as a patient's transfer from one health care provider to another. Clinical referrals are key to how a patient and their primary care provider interact with



specialists and other providers who are needed to help address the patient's care. From an HIE perspective, clinical referrals also create a HIPAA relationship between a provider and a patient—even if the provider has not yet treated the patient. Referrals become “closed-loop” when each step in the referral process—the initial outbound referral, the response from a recipient provider, and the outcome of the service—are all transparent and communicated electronically to both sides of the referral pathway. See Figure 3 for a graphical explanation.

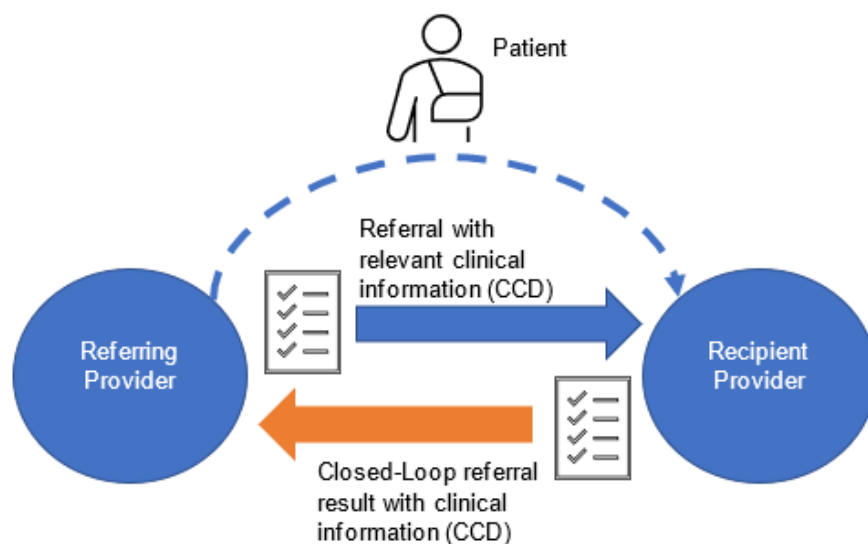


Figure 3: Basic closed-loop clinical referral process

The HIE Workgroup discussed different approaches that have been taken in the past to achieve broadly adopted electronic closed-loop clinical referrals. The approaches essentially fall into two categories: 1) vendor-driven approaches where each participant in the closed-loop referral must use a common platform; and 2) federated approaches, where participants may stay within their own system (e.g., their EHR), but referrals from external EHRs or other systems are integrated seamlessly. Given the wide variety of EHRs in use in Oregon already, the Workgroup focused its discussion on federated solutions, which can facilitate communication between these different EHRs.

360X

One federated approach to closed-loop clinical referrals is called the 360X project. Initiated in 2012 by ONC during the advent of EHRs and the concept of interoperability, 360X has now matured to the point where Oregon providers are beginning to pilot and test this functionality between large EHR vendors. The advantage of 360X is that it leverages federal standards that are already built into ONC's technical requirements for EHRs. Direct secure messaging, HL7



admit discharge transfer (ADT) messages, consolidated clinical data architecture (C-CDA), and cross-enterprise document media interchange (XDM) meta data are already established components of HIE across the state of Oregon. 360X leverages these standards and uses them to accomplish a closed-loop clinical referral from one EHR system (e.g., a primary care provider) to another EHR system (e.g., used by a specialist like a behavioral health provider).

The HIE Workgroup heard from multiple efforts to implement 360X in Oregon. First, through a pilot project in Central Oregon, the Workgroup learned that 360X-like referrals are already live between two medical providers in that region, one using Epic EHR and the other using eClinicalWorks EHR. The Workgroup also heard from OCHIN, a national provider of Epic for community health centers and other providers, on their 360X pilot in Portland between OCHIN Epic and a prominent behavioral health EHR system. The OCHIN pilot is the first beginning-to-end implementation of 360X in the nation, hence the importance of this project for Oregon's HIE strategy in the future.

Closed-Loop Clinical Referral Strategy Recommendations

In addition to the overarching objectives and strategies described above, the Workgroup identified the following specific success outcome and recommendations for closed-loop clinical referrals.

Success outcomes:

1. Increase the use of electronic, closed-loop referrals for clinical referrals between primary care providers and specialists (including behavioral health, oral health, and long-term post-acute care) using existing technology and leveraging federal data standards.

Strategy Recommendations:

1. **Provide funding to support additional 360X pilots or other federated approaches to closed-loop clinical referrals.** Funding would help to support participating providers and system partners take the time necessary to establish and implement federated closed-loop clinical referrals such as 360X within their environments (funding should not be made to EHR or other technology vendors). Funds could be used to compensate organizations for the time and effort needed to work through operational issues, including transitioning workflows and/or creating templates for different referral recipients. For example, a gastroenterologist requires different information in a referral compared to a behavioral health provider. Different components of consolidated-clinical document architecture (the federally-recognized standard for patient summaries of care) can provide this information but automating which information is the most relevant will be key to a successful referral workflow.



2. **Monitor progress toward implementing closed-loop clinical referrals in Oregon (including 360X) to identify further opportunities to advance these efforts.** Given that 360X is an Integrating the Healthcare Enterprise (IHE) standard associated with EHR solutions, the Workgroup recognizes it cannot currently serve all health care providers in the state. Not all recipient providers use an EHR (e.g., oral health providers using a DPMS) and not all EHR systems currently support the 360X standard. Thus, the Workgroup recommends that some entity—public or private—conduct the work necessary to monitor progress toward achieving closed-loop clinical referrals in Oregon, including specific monitoring of 360X. A key barrier to broader adoption of 360X is transparency across EHR vendors in exactly which components they currently support.⁶ This transparency will help future efforts, as well as other vendor-driven or federated approaches to closed-loop clinical referrals that the Workgroup did not have time to discuss.

Notably, HITOC members identified that future efforts to promote 360X for closed-loop clinical referrals needs to also account for how other providers like oral health providers not using EHRs could benefit. They also sought more information on potential benefits to consumers in accessing their own health information related to referrals. For more information related to Consumers and HIE, refer to the [Consumers, Privacy & Security, and Data Quality](#) concept paper.

Conclusion

Oregon has already accomplished many HIE successes to support care coordination efforts across the state. Achieving progress on closed-loop clinical electronic referrals, in addition to the other recommendations included in this concept paper, would benefit these efforts further. Many care teams today are effectively using HIE solutions to connect on patients and the inclusion of more diverse providers, including behavioral health, oral health, and rural community providers, as well as long-term and community-based post-acute care, will only allow Oregon to progress further in serving patients' clinical needs.

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⁶ The Workgroup learned that the HL7 ADT messages back from recipient EHR to initial referring EHR is a key area that not all certified EHR technologies support today.