

HIMSS Interoperability & Health Information Exchange Community



HIMSS Interoperability Case Study – The Oregon Clinic, August 2018



Background

[The Oregon Clinic](#) is an independent specialty physician organization based in the Pacific Northwest, which works with many hospital systems on patients with complex stories. The practice consists of about 260 providers, 160 physician shareholders and nearly 20 specialty practices. The physicians at The Oregon Clinic are affiliated with multiple hospitals across the region where they use a variety of different electronic health records (EHRs) as well as their own EHR at their respective private practices; this has presented them with unique interoperability challenges.

Tim Fitzgerald, Director of Information Technology (IT) for The Oregon Clinic since 2010, was interviewed for this Case Study, which tells how The Oregon Clinic went from little to no interoperability to sharing information bi-directionally, previewing records and proactively surfacing pertinent information from inbound Consolidated Clinical Document Architecture (C-CDA) documents.

In 2010, two major local hospitals started using a large EHR system and The Oregon Clinic started to feel pressure from these hospitals to use the same system to simplify their data exchange. However, due to a variety of factors, this was not a viable option. They decided instead to look into alternate solutions to exchange information with hospitals. The goal was to find a cost effective solution that would get the information they needed into their patients' charts in a timely, legible, accurate and relevant manner while using multiple systems across the continuum of care.

Prior to beginning on their path to interoperability, The Oregon Clinic shared information with hospitals by faxing referrals and other patient information between facilities. This was time-consuming and often failed to produce patient information in a timely manner. Their two local partners, Providence and Legacy Health Systems,

were already involved in exchanging health information with other systems, which proved instrumental in helping The Oregon Clinic with their interoperability needs.

First Discussions

The Oregon Clinic participated in Stages One and Two of [Meaningful Use](#), and as with many organizations, they believed that interoperability would “just happen” when they met the requirements. When it became clear that this was not the case, The Oregon Clinic knew they had to do something more to become interoperable on their own. However, no one knew what interoperability should look like, so it was difficult to understand how to begin. Under the leadership and advocacy of Dr. Fausel, The Oregon Clinic decided on three interoperability goals that they felt were the most impactful and attainable:

1. *Referral Processing* - To receive referrals as a C-CDA document using Direct Messaging, and return a consult note as a C-CDA document to the referring physician
2. *Bi-directional Exchange* - real-time C-CDA exchange with their local Epic-based hospital systems
3. *Asynchronous Provider-to-Provider (P2P) communication*

In the fall of 2015, a fortuitous chain of events occurred which moved this interoperability project forward: The President of The Oregon Clinic CEO, Dr. Craig Fausel, went to a fundraiser for the U.S. Senator from Oregon, Ron Wyden. At that event, Dr. Fausel expressed his discontent about the lack of interoperability. Soon thereafter, Tim Fitzgerald and Dr. Fausel found themselves in a conference call with leadership from the Department of Health and Human Services, [Epic Systems](#) and local hospital systems. The conversation started with Epic explaining how they had some external providers connected to the CareEverywhere® network.

Encouraged by this conversation, The Oregon Clinic started learning more about [IHE profiles](#), [HL7 standards](#) and [C-CDAs](#), which led to the launch of their interoperability pilot. First, they reached out to local healthcare systems to collaborate: [Legacy](#) and [Providence](#) both agreed to be a part of this project as did [Epic Systems](#).

The first phase of the project focused on developing the communication standard between The Oregon Clinic and their local healthcare system partners; they used SSL connections and implemented IHE standards to accomplish this. The Oregon Clinic had used [GE Centricity Practice Solution \(CPS\)](#) for their EHR since 1998, so they also engaged [GE Healthcare](#) and their interface partner [Qvera](#) to begin working on the C-CDA exchange.

However, once they were able to start exchanging information, the data was not readily accessible in the clinic and providers were not happy. They knew they needed

to get the information into the clinician workflow and C-CDAs into patient charts in a manageable way. Having multiple specialties meant that providers wanted to access different information from the C-CDA documents. The Oregon Clinic worked with their clinicians to try to figure out how to make this work best while still meeting regulatory requirements.

Stakeholder Engagement

The driving forces to get interoperability rolling were the President and CEO of The Oregon Clinic. They knew they wanted to engage the physicians in this project because a common complaint from their doctors had been that they felt ignored. Even if something is working on the technical side, it may not be useful clinically. As the project took on more definition and the scope became clearer, The Oregon Clinic expanded their stakeholder engagement and continued to engage providers in the process. Each time they made improvements to the workflow, they would get informal feedback from the physicians on the clinically relevant aspects. They did this until the responses were mainly positive and indicated that the implementation of interoperability solutions was useful in the clinical setting. This brought them to their current workflow, which includes the ability to preview a C-CDA document in real time and bring over only what information is relevant to the viewing physician.

Technical and Interoperability Approaches

Referral Processing

Their first project goal involved using C-CDA referrals by Direct Messaging. Since The Oregon Clinic represents specialty providers and receives many external referrals, they wanted to use interoperable exchange to create a type of closed referral loop. The process involved use of the C-CDA via Direct Messaging and a [Surescripts® service called Automated Clinical Messaging](#).

Example Clinical Workflow:

1. An external Primary Care Physician (PCP) sends a C-CDA referral to a Specialty Provider at The Oregon Clinic.
2. Once The Oregon Clinic receives the referral, a referral receipt message is sent back to the PCP. This not only alerts the PCP that the referral has been received, but it also confirms the communication pathway between the PCP and the specialist to confirm the Direct Messaging is working.
3. After the patient visits the specialist and the encounter is documented and signed, the consult note is then sent back to the PCP via Direct Message. There is an Automated Clinical Messaging (ACM) service on the back end that queries the data in the EHR for an appointment type that matches the referral. If it finds a match, it will initiate sending the consult note back to the referring provider.

Thus far, they have had a positive response from specialists and referring providers as this process eliminates extra steps for collecting data and verifying that the patient visited the specialist.

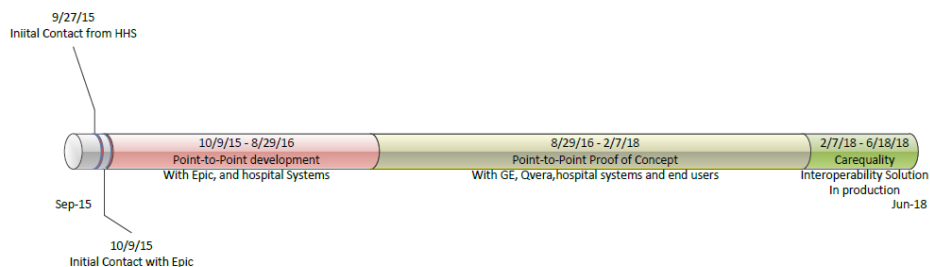
Bi-directional Exchange

The second goal was to implement bi-directional, real-time C-CDA exchange with their local Epic-based hospital systems. This process was a little more extensive than the first.

The Oregon Clinic had previously reached out to GE to improve interoperability. They worked to use a federated network to register and store health documents and build the infrastructure required for storage and exchange. [Qvera](#), their interface vendor, understood the interface connectivity pieces but needed access to patient records and clinical documents from multiple EHRs to accomplish this task.

In September 2016, GE and Epic began to collaborate with Qvera in a pilot program to publish clinical documents to a shared registry through which clinicians could query and retrieve documents from their respective repositories. The last essential piece of this project was [Carequality](#), which allows its members access to a vast, trusted network of clinical documents wherever they exist. The bi-directional sharing of clinical documents is possible through the implementation of the IHE cross-gateway sharing infrastructure [Cross Community Access \(XCA\)](#) profile.

This is the timeline of the bi-directional exchange with Epic to-date:



DESCRIPTION
The Oregon Clinic
Timeline to Interoperability

Asynchronous P2P Communication

The last goal that The Oregon Clinic had set out to achieve was to create Asynchronous Provider-to-Provider (P2P) communication. The Oregon Clinic is still looking for the best way to implement this functionality and is engaging with their partners for the most viable solution. An example of a potential use cases could be:

1. A PCP wants to ask a specialist for advice on a particular patient regarding whether they should refer them to the specialist or not. To do this, they would send information on the patient's history to the specialist for their opinion.
2. A PCP has a general question such as "What tests should I order for symptoms of shortness of breath?"

In these scenarios, external systems exchange information in a real-time advice or consult context.

Outcomes and Reporting

To measure success, The Oregon Clinic decided to use provider feedback as a benchmark. They would know they were successful when the IT team could show the providers how the interoperability features work and get agreement from physicians that the result was an improvement in their clinical workflow. Because some participants were wary of any IT project and any resulting modifications to patient charts, The Oregon Clinic felt they had to close that credibility gap by listening and not confusing purely technical achievements with progress to improve the clinical workflow.

In addition to provider feedback, The Oregon Clinic uses message volume to measure progress. They became members of Carequality in February 2018 and since that time, the total number of messages sent has grown from 4,000 messages per month to 12,000. The expectation is continued growth of this metric as access to patient health records increases. They also continue to monitor and get feedback on system performance and issues, and communicate enhancement requests to GE.

Interoperability and the Clinical Workflow

Changing the clinical workflow has been the most challenging aspect of implementing interoperability solutions. Even when The Oregon Clinic could demonstrate technical improvement in the timeliness of the information, improved quality of the information, patient benefits and physician buy-in, they still had to get individual clinic sites to accept the change and it was not always an easy discussion. There was an initial expectation of immediate acceptance by clinicians once they saw improvements in

action. Instead, they had to go clinic-by-clinic and sometimes person-by-person to implement change. With respect to the Referral C-CDA in particular, the specialists initially rejected it because it contained too much information and the presentation was unorganized. Once they worked with their specialists to make the most relevant sections within the C-CDA document easier to find, broader adoption and use of C-CDA began.

This work with physicians has led to an evolution of their workflow, which now allows the clinician to decide what they want to see by enabling them to preview the information first, then only import particular sections of the C-CDA document they want based on the referral information. They work with their medical staff to assist in that process by training them to import the items that the providers want.

Costs and Budget

As a private company, funding and budgets for these solutions come from the owners themselves. The Oregon Clinic leadership had already approved the budget line item for the software necessary for this project even though they were not fully clear on the scope. However, they found the largest real cost was the staff time to develop the systems. The Director of IT was able to assign resources as needed, but this required a substantial resource investment of time and personnel over 18 months.

Challenges

The three biggest challenges that The Oregon Clinic faced for this pilot were:

1. **Lack of existing implementation structure or roadmap:** Because the term “interoperability” was not clear, there was no existing structure or roadmap to build upon. Everything they did felt as though it were breaking new ground.
2. **Willing and motivated partners:** Interoperability requires willing partners who are motivated to operate together. The Oregon Clinic found that some of their community partners struggled with resources and understanding of the technical and operational reasons for working together. They found two partners (Legacy Health & Providence Health) who were motivated to participate with engagement from senior leadership. These partners were instrumental for moving forward.
3. **Clinical staff & existing workflow:** There was an initial reluctance of clinical staff to adopt changes into their existing workflow, even when those changes were clearly beneficial to the organization.

Ongoing Challenges

The Oregon Clinic continues to encounter community partners who do not understand the benefits of interoperability. Because of their pilot work, they are better informed and are able to help these partners engage. The interoperability landscape has changed significantly since the start of this pilot and The Oregon Clinic now has processes, templates, tools and infrastructure in place that they can leverage for ongoing implementations. In addition, the interoperability dialogue with partners is much easier as both sides gain experience through the pilot. The slow pace of adoption is still a challenge, but continues to improve as internal users and partners see the benefits of interoperability.

Change Management

Change management was a challenging aspect of this project. Realizing actual benefits of interoperability required ongoing incremental testing and validation with end-users throughout the process. The original expectation was that clinics would see the benefits and immediately adopt the changes. Instead, they faced reluctance to change well-established workflows; obtaining buy-in from physicians was paramount to overcome this. Once the physicians were on board with the new changes, they became drivers in change implementation and helped the rest of the staff see the benefits and start using the new technology in their workflows. Each clinic had its own project go-live plan, which they implemented by the end of June 2018.

Lessons Learned

1. Listen carefully to physicians and clinical staff and incorporate their feedback. Work to build trust and do not implement a technical solution that they do not perceive as an improvement.
2. Do not underestimate the power of physician champions to break through the status quo. People often become “stuck in a groove” and will do things the way they have always done them unless they can see a clear reason to change.
3. Develop close relationships with important community partners and figure out who is ready and motivated to take on an interoperability project. It does not work to implement change before a partner is ready and willing to collaborate.
4. The Oregon Clinic could have done a better job researching and learning about the interoperability options that were already available, participating more in interoperability communities and keeping up-to-date about the available technical standards. This would have helped with project planning to decrease the number of surprises and new discoveries.

Summary

The Oregon Clinic has attained two of the three interoperability goals they set out to accomplish and those are exceeding expectations:

- They process over 90% of referrals electronically via the automated referral management system outlined above. Almost all of those referrals receive an automated chart note (the patient encounter documentation) back from The Oregon Clinic's specialty physicians. The referring physicians are happy to get their referrals handled quickly and to get detailed, consistent information back from Oregon Clinic's specialists.
- The Oregon Clinic is aggressively rolling out their Carequality initiative. They have reached a tipping point with thousands of C-CDA documents now exchanged every month. Clinics are clamoring to be included and physicians are seeing improvements in how their charts are prepared.

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