



Connected Care: HIMSS Research Reveals Both Potential – and Challenges Ahead

Three health leaders offer an inside look at their organizations' interoperability efforts

As Chief Technology Officer at WellSpan Health, Mick Murphy seeks to improve the patient experience. “I want to make everything as easy as possible for patients. Always having that as a goal is really powerful,” Murphy said.

His hope is that patients will have experiences like the one he recently had. After suffering with sinus problems for some time, Murphy had a computed tomography (CT) performed at WellSpan. The diagnostic test revealed the need for a

specialized procedure that a surgeon at Johns Hopkins Medicine could perform. During his initial visit with this specialist, Murphy was able to turn on his phone and show the specialist the CT image.



There are differences to how EHRs store information. As a result, they're not fungible like currency.

MICK MURPHY | Chief Technology Officer | WellSpan Health

“It was a good reference-quality image. And, being able to do this was pretty cool,” he said.

Murphy is just one of many IT leaders who are striving to move healthcare forward by addressing connected care and interoperability. The *2023 State of Interoperability and Connected Care*, which includes input from 115 information technology, informatics, business and clinical professionals, sheds light on the challenges and opportunities associated with this journey.¹ Murphy, along with Sean Enners, Director of Clinical Technology Management, Kaiser Colorado, and Bryan Jarabek, MD, CMIO, M Health Fairview, offer their perspectives on these industry trends – while also providing an inside look at how connected care efforts are playing out at their trailblazing organizations.

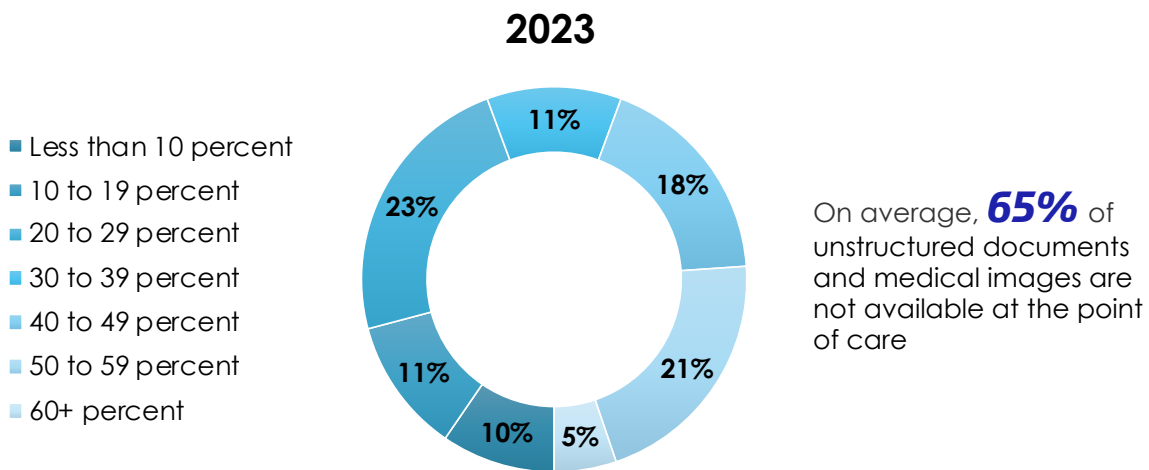
Pursuing connection

While many healthcare organizations (HCOs) embrace interoperability as a worthy goal, achieving high levels of connected care remains elusive. According to the HIMSS Market Insights research, on average, only 28% of unstructured patient data outside of core systems is accessible and available for analysis. In addition, 65% of health systems’ unstructured documents and medical images are not accessible at the point of care (Figure 1).

These findings come as no surprise to Murphy. “Just sharing things like radiological studies is difficult. There’s not a good, automated way for us to query across healthcare and say, ‘Hey, has this patient been seen anywhere in the country and had a CT in the last 13 months?’ There’s not really a mechanism to pull those images in,” he said.

Figure 1. On average, 65% of unstructured documents and medical images are not available at the point of care.

Approximately what percentage of your unstructured documents and medical images are available at the point of care?



Approximately what percentage of your unstructured documents and medical images are available at the point of care?
Base: Total Respondents, 2023: n=115



The foundational communication between the vendor-neutral archive and the EMR was imperative. It lowered the cost to achieve connectivity and increased our return on investment.”

SEAN ENNERS | Director of Clinical Technology Management | Kaiser Colorado

Not surprisingly, half of those surveyed are spending 11% to 25% of their work week searching for such information (Figure 2).

Indeed, the complexity of the work effort can be daunting, according to Enners. “Our organization is very ‘matrix,’ which means you have a team working on the EMR, a team working as the interface broker, biomed working to connect the devices and PACS administrators working with images,” he explained. “Security is a big deal now . . . so security teams get very involved while networking teams work on speed and performance. Bringing all those resources together on any given project is just a huge challenge.”

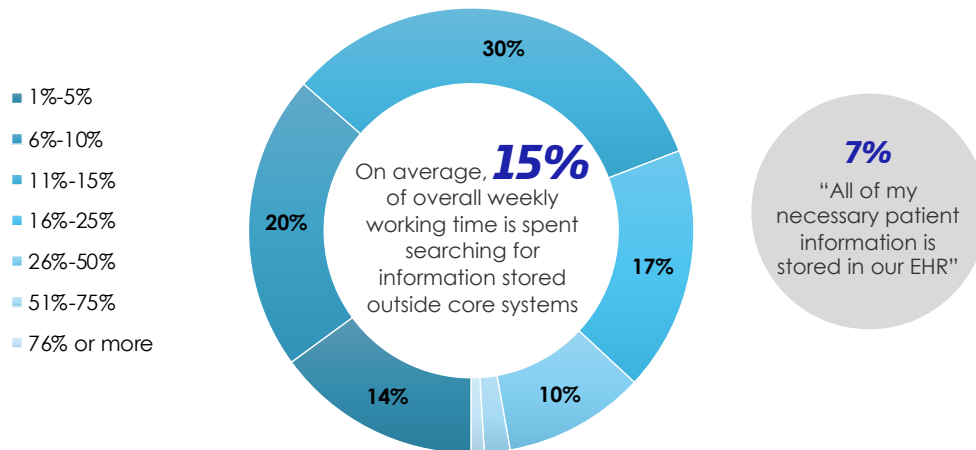
A challenging endeavor

Although healthcare IT leaders want to deliver the resources clinicians and other staff members need through better interoperability, challenges abound. According to the HIMSS Market Insights research, integrating information from multiple EHRs ties as the number one barrier to connectivity.

“When the industry became electronic, there was no original standard for how we could discreetly record various types of encounters,” Murphy noted. “There are still many differences related to how different EHRs store information. As a result, they’re not fungible – and healthcare events are not

Figure 2. Approximately half are spending 11%-25% of their work week searching for information stored outside of their core systems.

Please estimate what percent of your overall weekly working time is spent searching for information that is stored outside of your organizations core systems, such as the EHR, ERP, CRM, etc.



Data labels <3% not shown

Please estimate what percent of your overall weekly working time is spent searching for information that is stored outside of your organizations core systems, such as the EHR, ERP, CRM, etc.

Base: Total Respondents, 2023: n=115



The faster we can get this content to physicians, who are more pressed for time than ever before, the happier they're going to be.

SEAN ENNERS

fungible like currency is. Financial account balances are easily communicated. Even with international currencies, it's easy to compute the exchange rate. It's not that simple in healthcare."

Unstructured data and content ties as the most common obstacle identified by the survey respondents (Figure 3).

"There's a lot of unstructured data out there, and the immediate answer is that all the doctors and nurses and frontline staff taking care of people just need to take the time to structure the data in a way that they can use it. As a physician, I can confidently say that all those professionals are too busy to do that. However, with the new tools that are coming out, we might be able to let technology do that for us," Jarabek pointed out.

M Health Fairview, for example, recently implemented optical character recognition tools which make it possible for a computer to scan a document, find important content and then quickly categorize the data in their information system. This enables clinicians to find the data they need quickly when treating patients.

Strategies for future success

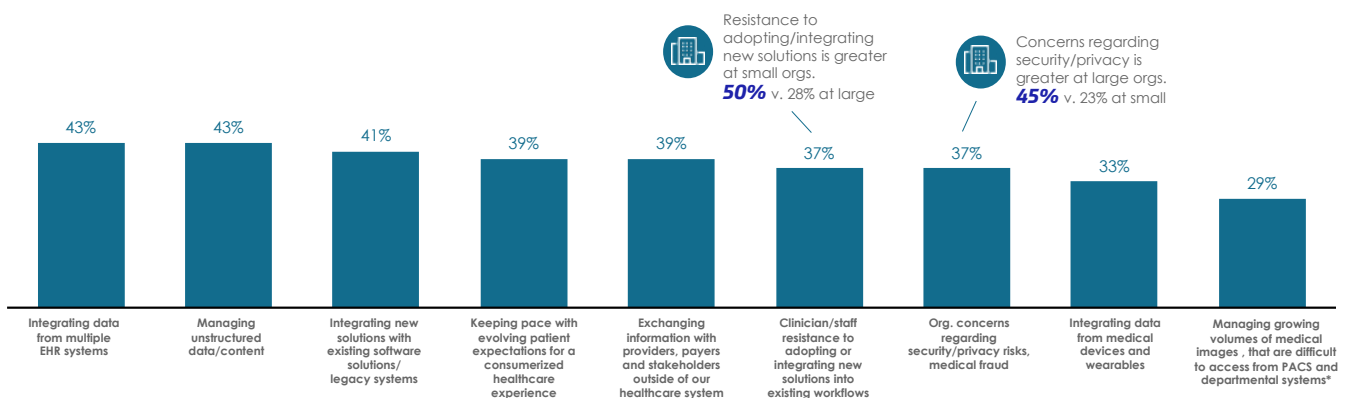
Certainly, M Health Fairview is not alone in its quest to push the interoperability needle forward. In fact, leaders who participated in the HIMSS Market Insights survey cited auto-classification of unstructured documents to speed access to medical records, natural language processing (NLP), enterprise medical imaging, enterprise content management and digital collaboration tools as the top five strategies that organizations are planning to deploy (Figure 4).

All these strategies make sense to Enners since they get comprehensive information to clinicians.

"The faster we can get this content to physicians, who are more pressed for time than ever before, the happier they're going to be. I think about their constraints – shorter interactions with patients, more patients to see on any given day – and realize that the more we can do to deliver information quickly that they can use to understand and treat their patients, the better," Enners said.

Figure 3. Among smaller organizations, "clinician/staff resistance to adopting or integrating new solutions" is a significantly bigger obstacle.

What are your organization's most significant obstacles to improving interoperability and delivering a more connected care experience?



*Added 'that are difficult to access from PACS and departmental systems' to this current 2023 wave only.

Obstacles with <29% incidence & 'Other' 2%, not shown

What are your organization's most significant obstacles to improving interoperability and delivering a more connected care experience?

Base: Total Respondents, 2023: n=115, Large Organizations (500+ beds): n=71; Mid to small org (fewer than 500 beds): n=44

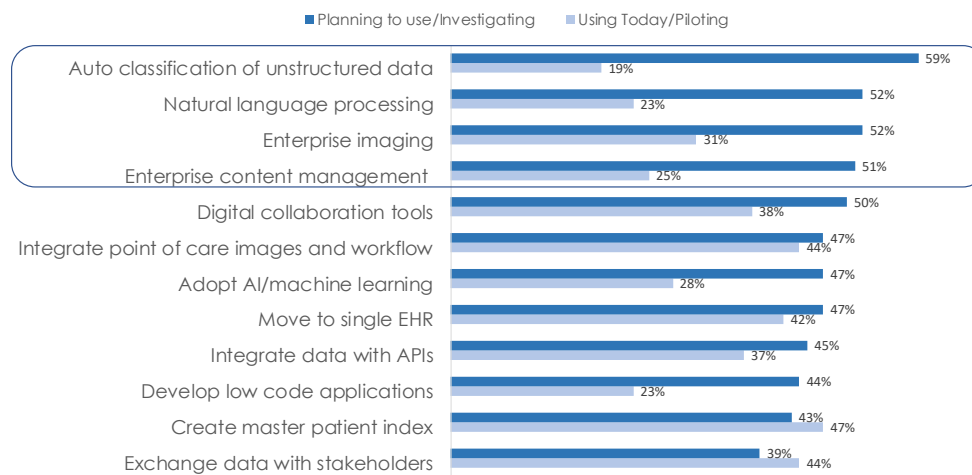


We need to share data, get it in the right place, then we need a tool to interpret the data. Artificial intelligence should be on the list for investment, to make our interoperability future better.”

BRYAN JARABEK, MD | Chief Medical Information Officer | M Health Fairview

Figure 4. More than half stated that they are investigating or planning to “automate classification of unstructured data,” “adopt an enterprise imaging strategy” and “invest in ECM.”

What steps are you taking to improve interoperability?



Total incidences of <67%, not shown

What steps is your organization taking or likely to take to improve interoperability and deliver a more connected care experience?

Base: Total Respondents, 2023: n=115

While these technologies hold potential, Murphy specifically called out NLP’s value. “NLP is extremely powerful because you can do a concept search inside your EMR. For example, if you want to know if a patient had previous heart issues, you can say ‘cardiac,’ ‘AMI’ or other related concepts,” he said. “People use different words depending on the context. And so, being able to find that event is much easier if you can search for a general concept versus searching for a specific word.”

Jarabek agreed that these strategies are the right ones – *currently*. However, he pointed out that ChatGPT and other AI solutions could take interoperability to the next level.

“We need to share the data and get it in the right place, but then we need a tool that can interpret the data and provide a summarized view that a doctor can actually use,” he said. “So, artificial intelligence should be on the list of what we as an industry should invest in to make our interoperability future better.”

While HCOs are likely to rely on such technology in the future, WellSpan, Kaiser Colorado and M Health Fairview are already employing strategies to enhance connectivity such as:

- **Building an interoperability foundation.** “The main strategy of putting in foundational communication between the vendor-neutral archive and the EMR was imperative. It lowered the cost to achieve connectivity and increased our return on investment. So, with that foundational work completed, we can go to each department and don’t have to build interoperability in from scratch,” Enners said.
- **Bringing independent physicians into the fold.** WellSpan has moved ahead with the Independent Physician EMR Integration (IPEI) program. “When independent providers out in the community want to exchange information with us digitally, we integrate within the context of their EMRs. So, we can share items such as lab orders, imaging orders and results, which is really great for patients in our community because now that information is available at both WellSpan and at their community provider locations,” Murphy noted.
- **Integrating faxed information.** “We get a lot of unstructured data still via fax, if you can believe it. We’ve automated that so that we can bring it in, scan it and it can be automatically placed into the patient’s chart. So, we can see the unstructured data in the context of our EMR,”



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Jarabek said. "Hyland OnBase enables us to make that completely transparent to our clinicians. They don't know that we are using the Hyland Healthcare solution. They just think they're in our EMR."

Real results

Relying on various technologies and strategies to improve interoperability is paying off for HCOs. Among survey respondents who used an effective technology, more than 6 in 10 noticed that it improved patient safety. In addition, respondents cited improved operational efficiency, better patient outcomes and the ability to receive data from another organization in real time as connectivity advantages.

Indeed, the benefits of interoperability are easy to recognize – even if they have yet to be quantified.

"Even though I don't have the exact number, I can tell you anecdotally that I have encountered many people in the community who have said, 'I was down in Florida and it was really great because I went into a hospital and they were able to pull up my records,'" Murphy pointed out.

Enners emphasized that improved connectivity makes sense from a patient care perspective. "Being in this healthcare IT space for close to 30 years, I know that accurate, up-to-date, clear and fast imaging improves patients' safety and outcomes. From a conceptual standpoint, we know the more information we can deliver and the easier that information is to find and view, the better off our patients will be," he said.

In his role as a physician, Jarabek sees the value of connectivity firsthand when he cares for patients.

"I was working at the emergency department last week and a patient came in who was having horrible pain. She had cancer and had been through multiple different surgeries at different care locations. Before, I would've had no way to collect all that information to find out what has and hasn't worked," he explained. "Now, it's all right in front of me. I immediately know that she is allergic to oxycodone, so I am not going to use that medicine again. And I can see that her cancer doctor thinks adding a steroid might help her pain, so I know to try that."

These results clearly demonstrate that addressing interoperability and connectivity challenges is worth the effort. The future, however, looks even more promising. Healthcare leaders appear ready to adopt advanced strategies and technologies such as automated records classification, content services and enterprise medical imaging that will push their organizations even further along the road to true universal connectivity.

In addition, embracing interoperability and deploying applicable technologies that parse patient data, streamline workflows and offer clinical decision support will help health systems attract, recruit and retain top-level clinicians, nurses and other staff. This, in turn, will improve overall efficiency, enhance patient and staff experiences and, ultimately, help organizations achieve superior care delivery and improve patient outcomes.

To explore connected care technology, see www.hyland.com/en/healthcare.

References

1. HIMSS Market Insights, sponsored by Hyland Healthcare. January 2023. *2023 State of Interoperability and Connected Care*.



About Hyland Healthcare

Hyland Healthcare provides connected healthcare solutions that harness unstructured content at all corners of the enterprise and link it to core clinical and business applications such as electronic health records (EHR) and enterprise resource planning (ERP) systems. Hyland Healthcare offers a full suite of content services and enterprise imaging tools, bringing clinical documents, medical images and other clinically rich data to healthcare stakeholders that need it most. This comprehensive view of patient information accelerates business processes, streamlines clinical workflows and improves clinical decision making.