Solving the Health IT Interoperability Quagmire

Save to myBoK

By Mary Butler

As the sun begins to set on the Obama administration, Vice President Joe Biden has been leveraging the weight of his office to speak out on the health IT interoperability quagmire in which the nation currently finds itself. During a speech at the industry's Health Datapalooza in May, Biden, who is leading the administration's "National Cancer Moonshot Initiative," demanded that health IT stakeholders "get serious" about health information sharing. He decried the inability of healthcare providers and researchers to seamlessly exchange data—whether for research purposes or an individual's care—across electronic health records (EHRs) systems.

Greg Simon, executive director of the White House Cancer Task Force, under the Office of the Vice President, doubled down on Biden's message in a panel discussion at the Office of the National Coordinator for Health IT's (ONC) Annual Meeting, held at the end of May.

"We need the health IT community to get serious about the kind of technology we need to turn the best data into the best knowledge for treating people with cancer, diagnosing cancer, and giving people a way to monitor their health in a way that can be shared," Simon said during a speech at the ONC meeting. "And we need the IT system, which has $35 billion from the federal government, to open up."

Simon said he was told that the complexity of healthcare data was to blame for the lack of progress in solving interoperability. Now he's throwing cold water on that argument.

"This is 2016, we need to break down barriers—it is not as complicated as people say it is. Ten years ago they said it is [too complicated], but now I don't buy it. And the reason I don't buy it is that I spent three years in the finance industry, and I looked at the complexity of data that had to be shared in a millisecond. So let's get serious about making things shareable and interoperable throughout the society and internationally," Simon urged.

Simon and Biden's recent remarks are pointing out the obvious to any patient who has tried to move their medical records from one provider to another, or who has had to undergo duplicate tests because previous results couldn't be shared. Health information management (HIM) professionals share much of this frustration.

Kathy Downing, MA, RHIA, CHPS, PMP, senior director of information governance at AHIMA, says that health system mergers and acquisitions highlight the need for interoperability—defined as the "capability of different information systems and software applications to communicate and share information"—and information governance (IG).

Often, when health systems merge, the data in each of the EHR systems can't be shared or combined, creating a multitude of headaches. Not only does this make it harder to treat patients more safely, but it hurts organizations' ability to participate in accountable care organizations (ACOs) and other quality- based care initiatives.

"Certainly another area where I'd highlight that is within an ACO. The idea [in an ACO] is that they're able to share information in the organization. But if every time you try and add another partner to a relationship—whether it's a health information exchange, an ACO, or merger—you have to spend a ton of money just to make information usable, that's not good information governance," Downing says. It can be very expensive to build interfaces that let two different EHRs in the same organization interoperate with each other, she adds.

Despite the millions of dollars spent on EHRs and other health IT, and the countless hours spent implementing these systems, the US healthcare system still has trouble sharing information between providers. This lack of interoperability between health IT systems has become a serious concern for the federal government and healthcare providers in general. Even though providers can't agree on exactly how to exchange electronic health information, they can agree on one thing—that the key to lowering healthcare costs and improving patient engagement and treatment lies with improved interoperability.

Health IT stakeholders, including committees and initiatives convened by the federal government, private-public alliances, standards development organizations, vendor groups, and software developers are all working—independently and in collaboration with each other—on methods to solve the interoperability challenge.

If Banks Can Achieve Interoperability, Why Not Healthcare?

The White House Cancer Task Force's executive director Greg Simon wasn't the first and won't be the last person to question why healthcare is struggling with interoperability when industries like finance and telecommunications solved it ages ago. An individual can take their credit or debit cards all over the world and withdraw money from their bank account, but two different hospitals with the same EHR vendor often can't exchange much data beyond demographic information.

Some in the health IT industry argue that health data is, by nature, more complex than banking data, and therefore achieving interoperability in the healthcare industry is vastly more complex.

"For one thing, there are only nine or 10 data elements in an ATM transaction while there's more than 140,000 data elements in our system alone," says Peter DeVault, Epic's vice president of interoperability. "When we start to talk about the desired outcome sometime in the future, being able to exchange discrete pieces of information with another vendor, that is a lot of standards development work and agreements that need to happen. I don't believe there's any industry that didn't spend a lot of time making sure those agreements exist and using those standards. That's one way healthcare is unique. Another reason is there are just a lot more players. There aren't that many banking systems when you dig under the covers and find what else is going on."

Federal Government Makes Interoperability a Priority

Regulators are currently pushing the industry towards interoperability through a number of different mechanisms. As the "meaningful use" EHR Incentive Program shifts under the umbrella of the Medicare Access and CHIP Recovery Act (MACRA), ONC is rolling out more initiatives to promote interoperability, such as the Move Health Data Forward Challenge.[1] This challenge calls on individuals or teams to "help create application programming interface (API) solutions combined with new implementation specifications developed by the HEART Workgroup that have the potential for individuals to securely and electronically authorize the movement of their health data to destinations they choose. The three-part contest will have a cumulative prize amount of $250,000 and a maximum prize value per participant of $75,000.

At ONC's annual meeting, National Coordinator Karen DeSalvo, MD, MPH, MSc, announced a health IT transparency program under the certification rules established by ONC on January 14, 2016, which requires developers to disclose detailed information about their certified health IT products, including limitations and types of costs that a purchaser or user may encounter in the course of implementing or using the developer's technology.[2]

Peter DeVault, vice president of interoperability at Epic Systems, says payment reform is actually one of the biggest things government can do to spur interoperability.

"Interoperability is a set of solutions to problems that come up when you're trying to coordinate care across multiple organizations, which didn't happen that much until we started to see payment moving from quantity to value," DeVault says. "And as that happens, the need to interoperate will increase and therefore solutions for interoperability will develop. Creating that right set of incentives is the biggest thing that government can do through Medicare and Medicaid."

Meaningful use was successful at incentivizing providers to adopt EHRs, but it also proved that one size does not fit all, says Dr. Matt Patterson, MD, president of AirStrip, a vendor- and data source-agnostic enterprise-wide clinical mobile interoperability solution. The accelerated and piecemeal approach meant that health systems were focused solely on implementing an electronic system, but not an interoperable one.

As a result, Patterson says, an extraordinary amount of money "went to those who could move the fastest. What we did was end up creating a monopoly of medical record companies and there was no incentive for them to operate outside of themselves."

One of the ways the government can help make up for many of the slapdash EHR implementations is by continuing to subject vendors to certification requirements through transparency initiatives. Under the ONC transparency program, developers must publicly disclose detailed information about their certified health IT products, including limitations and types of costs that a purchaser or user may encounter in the course of implementing or using the developer's technology. Developers must also make a "transparency attestation" indicating whether they will take additional voluntary actions to increase transparency regarding their products and business practices, according to ONC.[3]

Aneesh Chopra, president of NavHealth and former US chief technology officer in the Obama administration, is optimistic about these types of efforts. "The first and most important point is that data should be available for its highest and best use in care models that are focused on better patient care," Chopra says. "If there's circumstances where providers or vendors are blocking from putting their highest and best use, there needs to be some mechanisms for response."

Unique Patient Identifier Would Help Interoperability

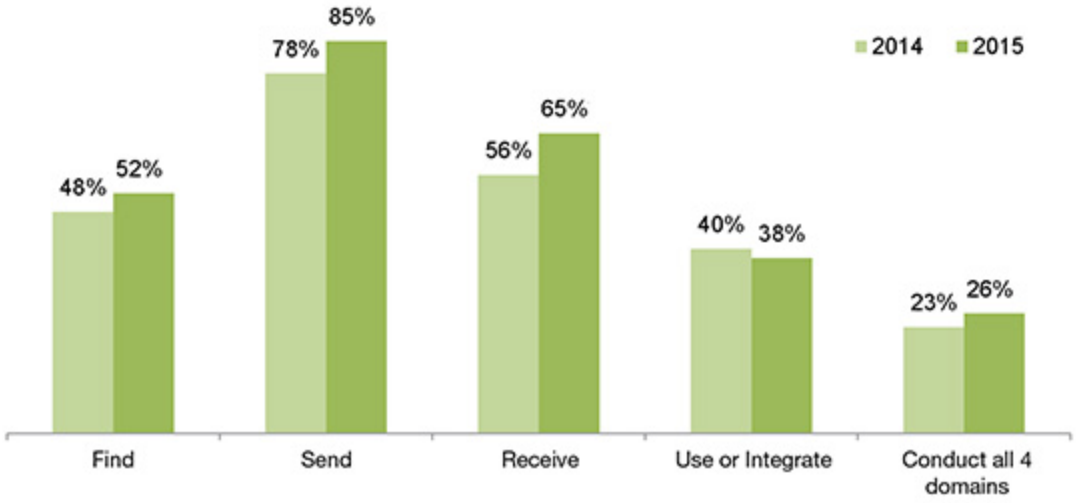
This year AHIMA officially launched an advocacy campaign calling for the creation of a unique patient safety identifier—which would individually distinguish patients and their health information beyond the typical identifiers like name and date of birth. Supporters say a unique patient identifier would reduce misidentification of patients and increase health information accuracy and safety. An identifier would also help improve interoperability.

Peter DeVault, vice president of interoperability at Epic Systems, agrees that developing a unique patient safety identifier would be a step in the right direction to fostering better health information exchange and system interoperability. Other countries where Epic operates have patient identifiers, and he says it makes figuring out where a specific person's record is located easier. But it doesn't completely solve the problem. AirStrip President Dr. Matt Patterson thinks healthcare is lagging because the industry is inherently risk averse. Being caught in the middle of potential life or death situations tends to breed caution in development.

Other organizations, like the CommonWell Health Alliance and AirStrip, are innovating around a patient identifier. For example, in the absence of a national patient identifier, CommonWell has created a record locator service in which all of a patient's records can be accessed anywhere they go, as long as the provider is a CommonWell member. This creates a virtual "table of contents" for a patient's visit history, eliminating the need for a unique number. For any one patient, "We can tell you where authorized uses of their information has taken place, and we can tie that all together and identify the patient," says Jitin Asnaani, CommonWell's executive director. "If the government wants to come up with a national patient identifier, then that could ease our job quite tremendously."

Patterson says that instead of relying on a patient identifier, AirStrip looks for high-quality enterprise master patient indices and interfaces with those to match up patients. Where there aren't good enterprise master patient indices, AirStrip has developed its own patient matching algorithm that is very good at matching one patient from one data source to another data source. "And in those cases where there's a potential for uncertainty, we provide a user opt-in so the doctor can attest that this John Smith is the same as this John Smith," Patterson says.

Percent of US Hospitals that Electronically Exchange, Use Summary of Care Records from Outside Sources



SOURCE: Patel, Vaishali et al. "Interoperability among US Non-federal Acute Care Hospitals in 2015." ONC Data Brief 36 (May 2016). http://dashboard.healthit.gov/evaluations/data-briefs/non-federal-acute-care-hospital-interoperability-2015.php.

High Standards for Interoperability

Nearly every health IT stakeholder group agrees that the creation and adoption of standards is at least part of the solution. Standards organizations such as the International Organization for Standardization (ISO) Technical Committee 215, Health Level Seven (HL7), and Integrating the Healthcare Enterprise (IHE) are hard at work on interoperability standards—but it's not an easy feat.

Every EHR vendor wants the standard to be the way they are currently doing it. This lack of standardization gets in the way even when government tries to help. For example, the Joint Commission just announced that it approves of mobile devices capturing and sharing information—but there are so many different interfaces (APIs) from vendors that is hard to integrate that data into an EHR, let alone share the information between devices.[4]

However, there is a standard in the works that a lot of people are excited about: HL7's Fast Healthcare Interoperability Resources (FHIR) standard, which allows patients to connect an application of their choice to their summary health data. Although work on this standard is far from finished—some say many years away—it has the potential to help EHR vendors find a common way to interoperate with each other.

Chopra is very optimistic about FHIR as defined and constrained by the Argonaut Project Implementation Guide, which was developed by the Argonaut Project, an industry-wide effort to accelerate the development and adoption of FHIR. It's only in the draft trial phase, but mobile developers and EHR vendors can adopt it for testing and feedback purposes.

"It is my opinion that it will be the predominant method by which health systems and doctors demand their next upgrade for EHRs to meet," Chopra says.

While this standard has potential, some people in the standards community believe it will take a lot more work for EHR vendors to agree on data exchange standards. "Hypothetically, all the health technology vendors could come together and agree on their own to implement any given standard. It hasn't happened yet, and without sufficient motivation, it is doubtful that it would occur on its own," explains Dr. Michael McCoy, MD, co-chair of the IHE international board.

That's not to say that forward thinking vendor groups and application developers aren't taking advantage of FHIR—they are. In fact, there are companies developing products with the sole purpose of overcoming interoperability challenges. Patterson uses some elements of FHIR in his company's product, AirStrip ONE, a mobile interoperability platform that lets a clinical end user have connectivity to any data source—such as a hospital's EHR—from any location. AirStrip ONE doesn't use traditional HL7 approaches. Instead, it uses live and active APIs that feed into the system. The primary end result is a

workflow solution that addresses situations where doctors and nurses need to access multiple disparate data systems on the fly, on the go, in one place, in one context, where they can meet together to make decisions, Patterson says.

"For example, let's say that I am a cardiovascular physician and I provide services to a couple different hospital groups, and I'm on call to one of the hospital groups. And let's say I use Epic in my practice but one of the hospital groups I consult with uses Cerner. So if one of my patients shows up in the emergency department [ED], and the ED doctor shoots me a secure text message to say there's a potential consult. When I open up that text in AirStrip, I can view in one application the Cerner clinical data, the Epic clinical data, plus I can view a diagnostic quality EKG, a chest X-ray, even in near real time, I can click a button and look at the live patient monitor in the ED so I know exactly what their EKG looks like, what their vital signs look like. I can get all of that comprehensively in a single application on my smartphone," Patterson says.

Standards are only part of the answer, and the importance is sometimes overstated, according to Jitin Asnaani, executive director of the CommonWell Alliance. CommonWell is a vendor-led organization that believes data should follow a person wherever they go to receive care. "We also believe as a corollary that access should be built into whatever program or software it is that a caregiver is using to take care of that patient. Whether it's a physician using an EHR or a lab person, or the patient themselves using an app or portal," Asnaani says.

CommonWell has about 50 vendor members, and its solution is live in over 4,700 locations across the country. CommonWell sees itself as building an (eventually) ubiquitous utility that has the ability to track patients wherever they go. Their solution is a set of standards that providers and vendors agree to adopt and sign on to partner with CommonWell. The solution helps streamline patient identification and linking, record location and retrieval, and privacy and consent management.

The Role of the Patient

Patients, of course, are paying the price for fragmented care while the government, standards groups, and non-profits like CommonWell innovate around the current system.

AHIMA's Downing notes that the most tangible evidence of interoperability, at least to consumers, is the data patients have access to in the end. She says there's a big push in patient engagement and IG circles to connect patients with their information. Every patient should be able to manage all of their health records in a system or portal of their own choosing.

Chopra says HIM professionals are best positioned to be the voice of the patient when systems and software are created. HIM knows which documents and records are the most requested by patients, and they can help close the feedback loop with IT. This spring, Chopra and Christine Bechtel, president and CEO of the Bechtel Health Advisory Group, reported findings from a GetMyHealthData Initiative that tracked difficulties consumers had obtaining their health records from providers to an audience at Health Datapalooza. The GetMyHealthData campaign is an alliance of consumer and industry groups, including AHIMA, dedicated to fostering access to digital health information. GetMyHealthData organizers refer to these patients as "tracer" patients, or shadow patients. Chopra was stunned to learn that Americans are spending millions of dollars to obtain health records that should be available for a negligible amount.

Chopra urges HIM departments to publicly report the experiences of their own patients to senior executives and lawmakers. "The more that information is known to policymakers, IT professionals, and senior executives, the more I believe we can close the gap between what's technically available via the certified HIT systems, and what the reality is on the ground for patients trying to get their health data," Chopra says.

Notes

[1] Office of the National Coordinator for Health IT. "Move Health Data Forward Challenge." www.healthit.gov/techlab/innovation/move-health-data-forward-challenge.

[2] Office of the National Coordinator for Health IT. "Certified Health IT Developer Transparency." http://dashboard.healthit.gov/dashboards/certified-health-information-technology-developer-transparency.php.

[3] Ibid.

[4] Wicklund, Eric. "Joint Commission Ends Text Messaging Ban for Clinicians." *mHealth Intelligence*. April 27, 2016. http://mhealthintelligence.com/news/joint-commission-ends-text-messaging-ban-for-clinicians.

Note: This article has been updated to correct the number of locations where the Commonwell solution is live.

Mary Butler (mary.butler@ahima.org) is associate editor at the *Journal of AHIMA.*

Article citation:
Butler, Mary. "Solving the Health IT Interoperability Quagmire" *Journal of AHIMA* 87, no.8 (August 2016): 14-18.