Connect the Dots

LINKING TOGETHER THE NATION'S DISPARATE, AND GROWING, HEALTH INFORMATION EXCHANGES HAS BECOME A FORMIDABLE CHALLENGE

By Jim Romeo

ESTABLISHING A HEALTH information exchange (HIE) and building an infrastructure to support it internally and externally is a daunting task. Whether funded by federal and state grants, or launched as a private sector initiative, launching a HIE often means blazing new territory and making decisions about what is best for patients and the bottom line. But establishing a HIE is just one part of the challenge. Even when HIEs are launched and humming, the next challenge awaits: becoming interoperable with all other exchanges, in other states and in other industry sectors. While nationwide interoperability and accessibility of the data between the nation's disparate HIEs continues to challenge industry stakeholders, expert consensus states the landscape of data interchange between exchanges may be fertile for collaboration as HIEs gain their footing.

Due to recent federal programs like the State Health Information Exchange Cooperative Agreement Program, the ongoing development of the NwHIN and Healtheway, and the rise of private health IT efforts, HIEs are growing at a rapid pace. However, it appears that the federal, state, regional, and private HIEs continue to develop in a siloed, disconnected way. Some of the HIEs are using different standards that make exchanging health information between them incompatible. Other HIEs are in direct competition with each other, and see interconnectivity as an issue to address after they have settled into the market.

Industry experts have begun to wonder how all of these various HIEs eventually connect to one another and meet the federal government's ultimate HIE goal: the ability to exchange patients' sensitive information between all hospitals and doctors' offices.

HIEs Growing, Become Competitive

The "2012 Survey of Health Information Exchanges: Supporting Healthcare Reform" conducted by the health IT non-profit eHealth Initiative found that the exchange of health data between HIEs has been increasing. The survey also found that while HIEs are playing a key role in healthcare reform efforts, federal funding is still supporting many advanced state-level HIE initiatives. HIEs have also increased their use of the Direct Project exchange protocol, which has led to easier exchange of basic health information for providers. The Direct Project was developed by the Office of the National Coordinator for Health IT (ONC) as a set of standards-based protocols for sending encrypted and authenticated health information over the Internet.

Collaboration on protocol and operability between all HIE constituents and health IT developers is important and necessary if the healthcare industry wants to one day freely and securely share patient information. Competition between different state, regional, and private HIEs doesn't need to prevent interoperability, experts say.

Jack Buxbaum, vice president of HIE services at Xerox Health IT Services, says that if the leadership of each HIE initiative understands the marketplace and constituents it serves, as well as the objectives and approaches being taken by other HIEs in its region, there should be sufficient room for all to survive and function. "The key in our fragmented healthcare landscape is to make sure the experience of an HIE participant is seamless across the continuum of care, regardless of the particular HIE to which they subscribe," he says. "During the early days of Community Health Information Networks (CHINs), in the 1990s, the main strategic objective was to gain market share through controlling the physician's desktop. That did not work back then and it will not work today."

The eHealth Initiative's survey states that competition between HIEs could hinder all HIE development. "Competition has emerged as a new issue that may be significantly impacting participation in HIEs," Buxbaum says. "Given the importance of stakeholder buy-in to sustainability, competition between initiatives and health IT vendors over stakeholder populations could impact future development of HIE overall."

This finding negatively impacts all HIEs regardless of their backing, and must be addressed.

"The survey suggests that stakeholders—or participants in the HIE—may not engage in the HIE because of competitive concerns." Buxbaum says. "HIE's leadership must have good awareness of the potential impact of a crowded field."

While some HIEs are struggling with gaining footing, others boast of growth and progress. "We are thriving," says Chris Carmody, president of ClinicalConnect, a HIE based in western Pennsylvania. "We are seeing tremendous growth in our access and usage of data, seeing more and more organizations sign-up and inquire about signing up with us.

"The true impact of our HIE is with the actual delivery of patient care. We are in the process of measuring that impact, but by all accounts of our users, having the HIE and its related data are truly making a positive difference in the delivery of patient care."

Healtheway a HIE Game Changer

In an effort to close the growing gap between disparate HIEs, the federal government has rebranded and adapted part of its Nationwide Health Information Network in Healtheway with the hope of expanding its use by providers and HIEs.

Healtheway was launched in 2012 as a non-profit, public/private partnership organization chartered to operationally support the eHealth Exchange, formerly referred to as the Nationwide Health Information Network (NwHIN) Exchange. ONC transitioned control of the NwHIN Exchange to Healtheway. "The goals of Healtheway include establishing a common framework and means by which HIEs across the country can interoperate," Buxbaum explains. "In this way, a person and their caregiver may, regardless of where they or the person's records reside, access that person's health history—a longitudinal health record—so long as it is automated within a connected EMR."

Part of Healtheway's mission is to foster interconnectivity between all HIEs. According to its website, Healtheway aims to "expand trusted, secure, and interoperable exchange of health information across the nation by fostering cross-industry col-

A Physician's View on HIE Importance

DR. CHRISTY VALENTINE, a practitioner in New Orleans specializing in internal medicine and pediatrics, stands strong in her belief that a comprehensive HIE infrastructure will strengthen her own practice.

But she also strongly believes a great deal of additional work is required before she can utilize seamless exchange of patient health information, in a HIPPA-compliant manner, across state lines.

"We recently launched our own HIE in the Greater New Orleans area earlier this month," she says. "Although an impressive system, we have a ways to go before the system can be adopted and utilized to its full capacity."

Valentine and other physicians see the benefit of having a local HIE to facilitate the exchange of electronic patient information in their area. But that benefit would grow with the ability to exchange information across the region, state, and nation, she says.

In the meantime, many providers make do with just electronically exchanging information within their own systems. Valentine's practice instituted an EHR five years ago.

"For the past five years, my patients, medical staff, and technicians have benefited from streamlined patient care as needs are best managed when medical history can be easily accessed from either of our locations," she says. "To extend this service to the broader community [of] New Orleans health practitioners would be optimal, allowing for communication between emergency departments, specialty care, and chronic care.

"This is a vast market with many hurdles to overcome. At this point, we could use the help and input from all [healthcare] resources."

laboration and by providing shared governance and necessary shared service to public and private organizations who wish to interconnect as a network of networks."

But connecting health records across platforms and systems has several obstacles, including getting HIEs to use similar standards for how and when information is exchanged. For example, a physician in Sacramento must have the proper permissions to access a patient's records in Kalamazoo, along with the ability for a Michigan and California-based HIE to technically exchange the information. While the development of a standard IT architecture that's required to link such data is in the mission of Healtheway, it will require patience and growth.

Buxbaum is optimistic these details will one day be finalized. "Provided the eHealth Exchange framework is effectively executed over time under the oversight of Healtheway, and provided regional and statewide HIEs have the ability to interoperate with the eHealth Exchange, we should have the technical means to support this 'use case,'" he says. "What may become as much of a challenge are the soft issues mentioned around privacy and security, [and] data ownership. Given the challenges which occur within a state or even a region, we can assume that it will potentially be even more challenging on a national scale."

The industry has been slow to come to an agreement. Providers and consumers should place pressure on HIEs and lawmakers to quickly solve these technical issues and create true interstate health exchange, Buxbaum says. "What would likely help is a national education and communication program that targets consumers and healthcare providers—converting them into advocates for the safe, secure, and appropriate national exchange of health histories," he says. "With a consumer groundswell of support for such national interoperability, providers and others will follow suit and make this vision a reality."

The success of interoperability will depend, to some extent, on the funding available to enable it. True "interoperability" may mean implementing different technological capabilities for different HIEs depending on one's current scale of interoperability with other HIEs. The work necessary to connect local, regional, state, and private HIEs varies. Finding adequate funding to connect HIEs is another challenge as federal grants begin to expire for state-sponsored HIEs. "[The] HIE is quickly moving from what was in many cases an underfunded collaborative effort focused on shared social good, to a business imperative for healthcare organizations," says Scott Afzal, program director for HIE at The Chesapeake Regional Information System for Our Patients (CRISP), a non-profit membership corporation and Maryland's formal statewide health information exchange.

"I think what will be interesting to watch is how the various HIEs that started up by promoting the public common good will navigate emerging market dynamics."

While many HIEs are starting to transition off the grant funding that helped them get established, finding additional capital to stand up new service offerings and connect to other HIEs will be a common challenge, Afzal says. But there is no need to develop large scale systems for interoperable exchange, at least not yet, according to ONC. Implementation of Direct protocol should be the first step all HIEs take in becoming interoperable.

"The goal of ONC's state-level HIE efforts has been to create a base level of interoperability, through the Direct protocols, securely transmitting health data over the Internet," says Peter Ashkenaz, an ONC spokesperson. "These simple protocols can be scaled to larger, more complex exchange. Since there isn't a 'one size fits all' approach for the entire US, it is important to create simple interoperability that supports modular expansion customized to certain needs."

Almost all state-level HIEs now have the capability to exchange health information using Direct secure messaging, Ashkenaz says. With stage 2 of the "meaningful use" EHR Incentive Program—which offers incentives to providers who meet health IT measures—expanding the use for Direct, "interoperability is growing at every level of the healthcare system," Ashkenaz says.

Interoperable HIE Solution Slowly Developing

ONC has taken a multi-faceted approach to fostering HIE in-

teroperability since one program likely wouldn't fit all HIE efforts. Multiple federal initiatives are being coordinated and aligned across federal agencies and departments. "ONC has been focused on two primary goals: making simple, interoperable, and scalable electronic exchange capacity available to every provider in the US and eligible territories, and focusing on adoption and meaningful use of these tools for exchanging health information electronically," Ashkenaz says.

Launched to specifically address the interoperable issue, the EHR-HIE Interoperability Workgroup was established in 2011 to capitalize on existing standards and foster interoperability between HIEs, with the ultimate goal of finding a common standard. The workgroup is represented by approximately 15 states, 19 EHR vendors, and 18 HIE vendors.

The workgroup members have collaborated to leverage existing standards and provide guidance around specific implementations for the most commonly used interfaces by defining plug and play connections between EHRs and HIEs, according to the workgroup's website. The end goal for the workgroup is to create compatibility between HIEs.

Ted Kremer, executive director of the Rochester Regional Health Information Organization, believes that the development of interoperability standards for HIE and EHRs and the emergence of the EHR-HIE Interoperability Workgroup is important to the success of HIE integration. Kremer says that the development of HIEs have already established some very useful cross patient query profiles and standards. "Some of these same standards are used when an EHR queries an HIE. Health Level Seven (HL7) and their standards efforts are again reinvigorated, while new standards using the Clinical Document Architecture (CDA), such as the Continuity of Care Document (CCD), and the Quality Reporting Document Architecture (QRDA) will become key for quality reporting and information exchange to support transitions of care," Kremer says. "State HIE efforts will need to refocus carefully on those information exchange capabilities that only a state can best provide. Private HIE efforts, regional HIE efforts and commercial exchange services such as the Surescripts 'Direct' service will make the availability of those same services at a state level less attractive to participants."

Groups like the EHR-HIE Interoperability Workgroup have some large technical challenges ahead of them before meeting their goal. "A key challenge will be a unified Master Patient Index (MPI) to facilitate data sharing along with when, during the episode of care, data is shared/transmitted amongst HIEs," says Bill Fera, MD, a principal with Ernst and Young's Health Care Advisory Services. "Additionally, it will need to be determined who will 'own' and pay for technological interfaces, amongst EHR platforms/modules, enabling data sharing functions.

"A key success metric will be a solid governance structure, designed [or] agreed upon by all parties, which outlines roles, responsibilities, and financial requirements necessary to enable connectivity and data sharing."

The industry has made some progress in health information exchange. Many providers offer physicians the ability to electronically send a summary of a patient record to another physician, and have that information electronically accessible in a file, Fera says. "On the other hand, if we are talking about a physician pulling the information themselves by a query and then having that information imported into their own EHR in an actionable format, we are a very long way from that being available," he says.

The delay in interconnectivity standards has paralyzed HIEs from reaching their full potential, Fera says. "There is paralysis in the marketplace both on the side of design and who goes first," he says. "For example, on the design it really is about centering and gaining agreement on a standard master patient index [MPI] structure," he says. "The sharing of data is like world peace. Everyone wants and agrees to it. However, it's when the negotiations begin to enable peace that things get messy."

A second paralysis of action occurs when federal, state, and local entities and private healthcare organizations try to determine who executes interoperability efforts first.

"Does the health plan wait to participate in the state-funded HIE? Or, do they move forward and build their own HIE and worry about retrofitting into a state-level solution once it's up and running," Fera says. "With both of these groups 'stalemated' in their decision, neither is planning, designing, building with the urgency needed by the industry."

HIE Interoperability Difficult, But Not Impossible

The challenge of HIE interoperability can seem overwhelming and unlikely, but like many movements to consolidate operations, it can and likely will happen with time, says Chris Giancola, principal consultant at CSC Healthcare Group, an IT consultant firm working with hospitals and health networks to create HIEs. "I see the HIE marketplace as sharing a lot of the same characteristics as the telephony market. Though everyone uses the same dial tone, there is a universe of vendors, technologies, and uses for the product to choose from," Giancola says. "Just as private and public telephone networks interoperate and each provides their own value, private and public health information exchanges will grow to interoperate and provide value to their respective participants." O

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