Health reform aims to streamline communication for better data sharing. But the vehicle, Health Information Exchanges, face challenges in adoption.

It’s widely understood that the Affordable Care Act aims to cut healthcare costs while improving the way providers and facilities collaborate to deliver high-quality services. There’s a third goal, however, that has been quietly making headway for several years: streamlining communication for the safe, fluid sharing of patient data.

The tool for reaching this goal is known as the health information exchange (HIE) — a system that lets providers and facilities anywhere in the country share patient data instantaneously through an electronic network. The hope, upon full implementation, is patients will be able to walk into any healthcare facility in the United States, and providers will have immediate access to their medical records, vastly enhancing the ability to treat the patient.

As with almost every other aspect of the healthcare reform process, however, progress toward widespread HIE functionality has been slow and uneven, said Jonathan Berlin, MD, a radiologist at NorthShore University HealthSystem and clinical professor of radiology at the University of Chicago. He is also a faculty member in the American College of Radiology’s Radiology Leadership Institute.

“Health information exchanges are still in their infancy, just as a lot of the Affordable Care Act is,” he said. “This is certainly going to happen, but the pace is, at yet, unknown. Providers need to stay aware of its progress.”

Being informed is particularly important for radiologists, he said, because fully-functional HIEs will directly impact the way radiology communicates with other specialties, as well as affect the way providers report their interpretations and findings.

**HIE Status**

Individual states are responsible for launching their own HIEs, and there’s variation in how far they’ve advanced toward HIE capability. But they are all, at least, on the same road, working for national interoperability. Under the U.S. Department of Health and Human Services (HHS) State Health Information Exchange Cooperative Agreement Program, a federal-state partnership initiative, 56 U.S. states and territories have received $564 million in grants to support their HIE creation and implementation efforts while meeting requirements under the federal government’s meaningful use program for the adoption of electronic health records. These funds, which will wind down this year, are either awarded to state governments or other state-designated entity, such as a health department.

Based on current HHS-maintained, self-reported state data, 35 states have completed all the steps required for full HIE enactment. Thirteen others are still actively working toward this goal. Only Nevada and Connecticut have yet to self-report any information about their HIE employment status.

In June, the ACR submitted recommendations for HHS to consider as HIE work continues. The college suggested exchanges be required to allow bidirectional information exchange between providers and other physicians, including patient demographic data and any germane medical history, as well as facilitate computerized physician order entry for imaging studies. In addition, providers should be able to share information outside their own health systems, and imaging leaders and vendors should be included in any task force charged with creating interoperability guidelines. Lastly, the ACR supported the creation of HIE educational and training programs along with ways for providers to contact CMS or HHS with any questions.

**Impact on Radiology**
Without question, Berlin said, the biggest benefit HIEs offer to radiology is also one of the biggest benefits these systems offer to healthcare as a whole: a decrease in duplicated imaging studies. He called this change the “low hanging fruit of HIE cost containment.”

“Through interconnected HIEs, if a patient has had an imaging study done within a reasonable amount of time, there will be no reason for that person to undergo the test again,” he said. “Through greater communication between providers, unnecessary scans that have been considered necessary will no longer be as such.”

HIEs also open the door for radiologists to proactively craft standard protocols and treatment plans that will help practices and patients save money. The idea behind this move, Berlin said, is that radiology will soon be asked to — and will be able to — move from being a volume-driven specialty to one grounded in value. Information from HIEs will help inform decisions about the most appropriate imaging studies, Berlin said. The result will be highly valuable: tests that have a greater chance of predicting a patient outcome.

One way to create that value is through mining the data HIEs hold. In a 2011 Applied Radiology article, Rasu Shrestha, MD, vice president of medical information technology at the University of Pittsburgh Medical Center, wrote that using HIEs or similar cloud-based technologies would improve the connectivity between PACS and RIS, making it easier to identify the best way to treat patients. “Cloud technologies play an important role in fostering better models for image and information exchange whether within a healthcare system or across a health information exchange,” Shrestha wrote in the article. Shrestha, who is the medical director of interoperability and imaging informatics in Pittsburgh, also pointed out that it’s this ability to data mine treatments and patient outcomes that help radiology continue to identify its best practices and improve the industry’s ability to properly advise referring physicians about the appropriateness of any ordered scans.

There is evidence, however, that HIEs won’t affect image utilization at all. A study published in the May 2013 Journal of the American Medical Informatics Association analyzed claims data from Colorado matched with provider-level HIE-adoption data from 2005 to 2010 to assess how HIE implementation directly impacted healthcare usage. Based on claims from primary and specialty from more than 300 providers of nearly 35,000 patients, researchers determined HIE adoption didn’t result in significant changes in the quantity or cost of ordered advanced imaging studies.

The Challenge Ahead

Implementing HIEs in ways that help radiologists standardize how they read, interpret, and advise on imaging studies could be a stumbling block. According to Berlin, radiologists will need to actively review how other providers approach the same cases to determine the best protocols for treatment. It won’t be easy, though, because patients and medical conditions are full of variables. “It would be a lot easier to standardize care if we were talking about airplanes within a particular model. They have the same parts, metal, and bolts,” Berlin said. “But, people aren’t interchangeable. Everyone has their unique genetic make-up. They lead different lives, have different exercise habits, eat differently, smoke, sleep, and handle stress differently.”

Designing those protocols is critical, he said, because they will be radiology’s contribution to fulfilling the goal of improved communication under healthcare reform. Providers cannot afford to let outside specialties design radiology’s standard-of-care protocols. In these situations, practices and facilities in urban locations have an advantage over rural ones — they simply have more access to and more money to invest in the infrastructure and equipment needed for a functional HIE.

Still, HIE adoption and deployment has been slow. The main reason has been the need to ensure proper security and privacy. “HIE implementation has been slow because patient data is protected health information, and its confidentiality needs to be assured for HIEs to be sustainable,” Berlin said. “Vendors are working on the transmission of protected medical information in a confidential manner, however, and this issue will continue to be address.”
There are also questions around HIE’s sustainability over time. A new report sponsored by the Robert Wood Johnson Foundation points to questionable financial stability as a factor that is holding HIEs back. To date, providers have been unwilling to put money toward HIEs, and insurers have also exhibited lukewarm support for these systems. The study, with research conducted by the Harvard University School of Public Health and Mathematica Policy Research, called for stronger business plans that make HIEs more attractive to the healthcare industry, including those that incorporate funding from the private sector.

**Systems That Work**

There are a handful of states that have well-oiled HIE systems in place for radiology. For example, Keystone Health Information Exchange (KeyHIE) in Pennsylvania has connected more than 280 healthcare facilities and their records in more than 30 counties statewide. Starting with connecting emergency department data, KeyHIE created a scalable solution with interoperability guidelines that have already positively impacted radiology.

According to KeyHIE data, 20 percent of imaging studies in Pennsylvania have historically been duplicates. Early analyses of the system revealed that sharing patient information sliced repeat studies in half and has saved the state’s healthcare system and patients $5 million annually. Wisconsin radiologists have also had a significant effect by accessing information through the state’s four-year-old HIE. Each time a provider reviews a patient’s record, there’s an opportunity to avoid overutilization and save money, said John Whitcomb, MD, medical director of patient access at Aurora Health Care in Milwaukee.

“Every time we look at data from another source,” Whitcomb said, referring to imaging studies. “We save $400 because we are not duplicating what has been done.”

The savings can be significant when providers face patients who seek out imaging studies, he said. For instance, one of his previous patients visited several emergency rooms and underwent seven CT scans and five ultrasounds. The total cost – roughly $34,500 – could’ve been avoided with better information exchange.

Other states have taken HIEs a step farther, dedicating a part of their system specifically to radiology by partnering with companies that offer cloud-based and electronic radiology solutions. Indiana took this route when it launched ImageZone, a universal Web application that allows providers and facilities to instantly share imaging studies, by partnering with radiology-virtualization company Accelerad and using its medical image exchange web site SeeMyRadiology.com. This cloud-based system enables access to trauma transfers, referrals, sub-specialty radiology consultations, and referring physician communications.

Although several states have not yet finalized their HIE systems, the potential is there for improved communication and data-sharing methods to have a large, long-term effect on health nationwide, Berlin said.

“If you can facilitate communication of radiology results across multiple centers, then you have the potential to look at population health management,” he said. “Healthcare entities will increasingly be charged with caring for entire populations, and one of the best ways to do that is to look at various conditions or responses to therapy radio-graphically. With that data, radiology can contribute significantly to public health decisions.”

**Source URL:**

**Links:**