Health IT Time Out: Where is the US Healthcare System on Interoperability and a Quality Strategy?

By Lisa A. Eramo, MA

Think about what life would be like if we could occasionally hit pause, taking a "time out" of sorts to process information before acting. Unfortunately, we don't have that luxury—but that doesn't mean we shouldn't reflect on the past before moving forward. This article brings together several leading healthcare, health IT, and standards experts to discuss and provide a status check on health IT adoption and standardization efforts, and their impact (if any) on healthcare delivery.

What Went Right and Wrong in Meaningful Use

Consider the "meaningful use" Electronic Health Record (EHR) Incentive Program, the federally-funded initiative designed to spur EHR system adoption. Although we couldn't hit pause at various stages of the six-year program, the healthcare industry is now presented with an invaluable opportunity to reflect on lessons learned as the government phases out the meaningful use program as part of the Medicare Access and CHIP Reauthorization Act (MACRA). What did the industry achieve, and where might it head next? How far has it come in terms of solving monumental challenges like fostering interoperability or using health IT to improve the quality of care?

Depending on who you ask, the answers to these questions vary. However, everyone seems to agree that without widespread adoption of *interoperable* EHRs, it will be nearly impossible to achieve the type of low-cost, high-quality healthcare that value-based payment reform demands.

Experts agree that one of the most positive outcomes of the meaningful use program was the widespread adoption of EHRs. Ninety-six percent of hospitals and nearly 78 percent of office-based physicians now possess a certified EHR, according to the Office of the National Coordinator for Health IT (ONC).[1] In 2008, only nine percent of hospitals and 17 percent of physicians had a basic EHR.

"You could argue that no other industry has automated so quickly," says John D. Halamka, MD, MS, chief information officer at Beth Israel Deaconess Medical Center in Boston, MA.

The meaningful use program not only spurred EHR adoption, but it also digitized health information, enabling more comprehensive data collection for immunization registries, public health reporting, and syndromic surveillance, Halamka adds. It also provided physicians with access to advanced clinical decision support that simply wasn't possible in a paper-based environment.

However, even though many organizations are up and running with EHRs, they still lack the ability to easily and consistently exchange health information, says Jason C. Goldwater, senior director at the National Quality Forum (NQF) in Washington, DC.

"Even if it's the same vendor, very few installations of EMRs are similar. They're all customized and delivered in a way that matches the needs of the client," Goldwater says.

Although the meaningful use program established standards for the electronic transmission of patient care summaries across multiple settings, what it didn't do was create query/response interoperability—that is, the ability for providers using one EHR to easily query a different EHR (regardless of vendor) for specific information in real time, Halamka says.

Interoperability has always been part of the original meaningful use plan, starting with stage 2. But the expectation was that it wouldn't become broadly adopted until meaningful use stage 3, when value-based payment reform would also presumably be

well underway,[2] acting as a business case to motivate effective exchange, says Paul Tang, MD, vice president and chief health transformation officer at IBM Watson Health in San Francisco, CA. Tang was co-chair of the Department of Health and Human Services' Health IT Policy Committee and chair of the Meaningful Use Workgroup that developed the original meaningful use recommendations.

"The financial incentives have not moved along as fast as we would have wanted," Tang says. "If the financial incentives were there—meaning providers were receiving more than 30 percent of their revenue from risk-based contracts—then I think you would see more interoperability."

The meaningful use program also didn't address the necessary cultural shifts that needed to occur as EHRs were deployed, says Mark E. Frisse, MD, MS, MBA, professor in the department of biomedical informatics at Vanderbilt University Medical Center in Nashville, TN. For example, it didn't provide the time necessary to conduct workflow training or obtain buy-in from staff. "The [meaningful use] program was the most thoughtful national-scale technology implementation I could imagine," he says. "But like all great things, it has shortcomings. It simply takes time to assimilate new approaches. Money alone will not make cultural transformations happen as quickly as one may want."

Continuing to Prove the 'Business Case' for EHRs

An additional hurdle was the fact that the "business case" for EHR adoption was largely absent from the meaningful use program, says Nicole Miller, MS, RHIA, president of Miller and Miller Associates in Lockport, NY. Many physicians didn't—and still don't—fully understand why the transition from paper to an EHR is necessary.

Financial incentives under the meaningful use program initially compelled some providers to adopt EHRs, Frisse says. Another reason was the deluge of health plans created under the Affordable Care Act, each with its own complex requirements, that providers could track and manage more easily in an electronic environment. But regulations aside, has the technology proven its own return on investment (ROI)? Has it actually helped providers improve the quality of care? The answer is a resounding "yes"—particularly as interoperability continues to progress, Tang says. When EHRs are able to share information, physicians ultimately have access to additional information that they can use to make more accurate diagnoses.

Providers are also starting to see positive ROI as more data flows into the EHR from self-monitoring devices and other types of health IT, providing a richer context for understanding each patient's clinical presentation, Goldwater says. Data analytics helps providers quickly gain insights from this data that they can apply directly in the clinical setting, he adds.

The problem is that the industry hasn't consistently quantified the ROI in any formal and comprehensive way, Tang says. To do so, providers would need the ability to measure efficiencies and outcomes pre- and post-EHR implementation. This type of long-duration controlled study is difficult to conduct and certainly impossible to do retrospectively in the absence of baseline data from the days of paper records, Tang says.

However, many organizations continue to tout the EHR's ability to provide clinical decision support, says Katherine Lusk, MHSM, RHIA, FAHIMA, chief health information management and exchange officer at Children's Health in Dallas, TX. For example, the quality of care undoubtedly improves as EHRs alert providers of suspected conditions based on the presence of symptoms, she adds.

Although the internet is rife with EHR success stories, Miller says providers must continue to speak out about the benefits of EHRs. In the absence of formal studies, these anecdotal stories help prove the business case for the technology, she adds.

Redefining 'Successful' Health IT Adoption

Prior to the meaningful use program, successful health IT adoption meant simply increasing the number of providers using EHRs. Now that the industry has achieved this goal, many are starting to wonder what's next and how healthcare should redefine "success."

Experts agree that the health IT industry will reach the next phase of successful adoption only when providers begin to think of the EHR as a conduit for the valuable health information that's stored inside.

This view of the EHR reflects the fact that healthcare increasingly occurs beyond the four walls of a hospital or physician office. In addition, most patients don't stay within a single healthcare system throughout their lives, Frisse says.

"It's time to move away from the EHR as the center of the universe and focus on the broader system of care," Frisse says. "The central element is the information people need and the data that needs to be sent."

Interoperability will help achieve this goal, Lusk says, whose vision for successful health IT is one of true accessibility. "It's about going anywhere in the world and having my medical information available in real time for clinical care providers who have access to decision support and best practices that guide my care," she says.

Widely-adopted standards pave the way for interoperability because they allow different EHRs to exchange information in a trusted and consistent format, Lusk says. When providers trust the data they receive electronically, they're able to reduce administrative costs (i.e., costs associated with data entry and scanning), avoid duplicate tests, and make more precise diagnoses. Lusk provides the example of RxNorm, a medication data standard that assimilates various pharmacy vocabularies. RxNorm helps organizations share patient medication history, decrease data entry, and increase clinical accuracy.

Successful health IT also incorporates more advanced analytics capabilities, helping users immediately draw insights from raw data, including genomic data, socioeconomic data, and patient-generated data, Tang says. "Successful HIT would be if the computer provided insights and answers to the questions that I have about a patient," Tang says. "Artificial intelligence companies like IBM will want to partner with EHR vendors to help add this functionality to what they do."

Finally, vendors must continue to do the obvious—make and keep end users happy. This includes providers as well as patients, Tang says. "In defense of the vendors, they were asked to do something very quickly," he says, referring to meaningful use efforts. "Now is the time to work on improving usability. This would help contribute to successful [health IT] adoption."

Identifying a National Vision for Continued Health IT Progress

As the meaningful use program winds down, experts say there is no single national program in place to ensure continued health IT progress. However, various efforts are underway to keep providers focused on interoperability and using health IT to improve the quality of care.

For example, the 21st Century Cures Act enacted in December 2016 includes a section on health IT interoperability that not only calls for complete access to health information (including standards that allow EHR queries) but also prohibits information blocking. More specifically, the legislation says vendors cannot configure their products to "prevent or materially discourage the access, exchange, or use of electronic health information."[3]

The National Academy of Medicine (NAM) has also weighed in on creating a national vision for continued health IT implementation by publishing a series of discussion papers that include input from more than 150 leading researchers, scientists, and policymakers nationwide.

"They set forth a good overview of everything we need to do—where we are now and where we need to go," says Frisse, one of the contributing authors. "They're high-level, but I think that's what we need."

For example, in its March 2017 discussion paper titled "Vital Directions for Health and Health Care: Priorities from a National Academy of Medicine Initiative," experts advocate for the federal government to take various steps to improve interoperability.[4] These include:

- Create policies that encourage vendors to adopt data standards and facilitate data sharing.
- Design and promote value-based payments that de-incentivize unnecessary and duplicative services that contribute to avoidable waste and inefficiency.
- Develop incentives, clinical practice guidelines, and decision support tools that encourage physicians to engage each patient in clinical decisions.
- Support a voluntary national patient identifier that would facilitate patient data matching and overall data aggregation.
- Support end-to-end interoperability through federally facilitated or mandated efforts, or through direct federal action, that allow private and secure data transmission among EHRs and Food and Drug Administration-approved medical

devices.

Should the industry be concerned that there isn't more of a clear federal plan in place to continue forward momentum? Not necessarily, Halamka says. "There isn't going to be a top-down government-driven plan to do this," he says. "It's the industry recognizing there's an urgency for doing this. I actually think we're going to see the private sector blossom with innovation."

Halamka is referring to apps and other add-on solutions that will enable interoperability and enhance the user experience. When asked whether these apps and added functionality will increase the cost of EHRs, Halamka says it's not likely. That's because many EHRs are moving toward cloud platforms and a subscription-based pricing model, and will then layer apps on top of that. "Suddenly, the functionality is better—and the cost is lower. And the need for a fixed investment in hardware and software disappears," he explains.

Frisse agrees. "Sometimes you just need to let markets figure it out," he says. "Where new technologies are concerned, it can take several years for buyers and sellers to arrive at a value consensus and converge on a clear approach. Can you imagine if a government committee created the specifications for the first iPhone? First of all, it probably never would have worked. And second, we'd probably only still have the first-generation iPhone. I think in some instances, you've got to let the markets evolve."

When it comes to interoperability, regional health information exchanges (HIEs) and accountable care organizations (ACOs) are a good place to start, but the industry needs to move beyond that, Goldwater says. "I think we absolutely need to keep pushing forward and keep moving and keep understanding the barriers," he says. "True interoperability—being able to send patient data on call, on demand, whenever and wherever it's needed—will create a much more effective healthcare system. It would reduce errors, increase patient safety, and provide great insight into population health trends."

What Must Happen Next to Move Interoperability Forward

Experts agree that several pieces of the puzzle must fall into place to enable continued success with widespread adoption of interoperable health IT that improves the quality of care.

First, the industry must undergo payment reform that rewards quality and affordability above all else, Tang says. "As long as we continue to move toward value-based purchasing that is paying for outcomes rather than transactions, then it will be in everybody's best interest both clinically and financially to share data," Tang says.

Second, the industry needs more evolved standards for interoperability, Lusk says. "Standards lay the foundation for care delivery and payment model innovation," she says. "Data standards and information content standards normalize data across the continuum of healthcare and provide the framework for population management."

The Consolidated-Clinical Document Architecture (C-CDA) standard provides consistency for the exchange of patient summaries, but doesn't help providers achieve the goal of true care coordination, Lusk says. The C-CDA also has other problems—most notably that it yields a significant amount of extraneous information that isn't ultimately helpful to providers, Halamka says.

Fast Healthcare Interoperability Resources (FHIR) standards could be the wave of the future, but only if health IT vendors choose to adopt them, Halamka says. These standards (C-CDA and FHIR), which are built using HL7 Version 3, more easily facilitate connectivity between multiple systems, devices, and applications (i.e., reference information model (RIM)).

Recently, NQF developed an interoperability measure framework that creates a foundation for objectively assessing the current state of interoperability and its impact on quality processes and outcomes. As Goldwater points out, the framework uses measure concepts that cover areas such as the exchange of healthcare information, the usability and application of exchanged electronic health information, and the impact of interoperability.[5]

Third, the industry needs information governance, Miller says. Providers need to have confidence in the data so they feel comfortable using it to provide care and improve population health, she says.

Information governance not only addresses data integrity, but it also includes a nationwide strategy for patient matching as well as the ability to create a nationwide provider directory and assimilate heterogenous privacy laws that would enable information

to flow more freely across state lines, Halamka says.

Finally, experts agree that greater transparency into EHR products is critical. Ideally, ONC would require vendors to meet certain usability criteria as part of its certification process, Tang says. It would also be helpful if ONC required vendors to make recordings of product demonstrations performed to qualify for certification publicly available so users could easily compare features among various EHRs. Though this type of transparency might meet resistance among vendors trying to protect proprietary information, it would also drive necessary innovation, Tang says.

Without being able to assess usability with a standardized framework, Goldwater agrees that EHR innovation could plateau. However, he worries that EHR vendors may not support these assessments because they could mean that the vendors would need to significantly reengineer their products.

In some cases, reengineering is exactly what the industry needs, Miller says. The good news is that health information management professionals can work directly for EHR vendors to help them design solutions that address workflow challenges, Miller says. "I think we need to step back and figure out what the issues are before we move forward," she says. "Instead of trying to put a band-aid on the issues, let's take a step back and say these are the issues we've had in the past, how can we fix them?"

Notes

[1] Office of the National Coordinator for Health IT. "Health IT Dashboard: Quick Stats." August 3, 2017.

[2] Department of Health and Human Services. "EHR Incentives and Certification—How to Attain Meaningful Use." HealthIT.gov. January 15, 2013.

[3] Congress.gov. "H.R.6 - 21st Century Cures Act." July 10, 2015.

[4] Dzau, Victor J. et al. "Vital Directions for Health and Health Care: Priorities from a National Academy of Medicine Initiative." National Academy of Medicine. March 21, 2017.

[5] National Quality Forum. "Interoperability 2016—2017 Final Report." 2017.

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