A Roundtable Discussion on EHR Conversions: Experiences, Challenges and Solutions

Defining the Playing Field

The U.S. healthcare industry is heavily influenced by evolving and complex federal and state regulations. Recent federal legislation involving investment in healthcare information technology (HIT) incentivizes healthcare organizations to adopt technology with the goals of improvement in healthcare quality, patient safety and efficiency. Under the 2009 American Recovery and Reinvestment Act (ARRA) and the Healthcare Information Technology for Economic and Clinical Health Act (HITECH), hospitals and physicians satisfying “Meaningful Use” (MU) criteria of Electronic Healthcare Records (EHR) are eligible for incentive payments from Medicare and Medicaid.

While many healthcare organizations are diligently working to satisfy the EHR financial incentive criteria, the transition from a paper environment to an electronic system is much harder than many realize. Only 38 percent of hospitals, for example, have reached and surpassed Stage 4 of the Analytics Electronic Medical Record Adoption Model (EMRAM) developed by the Healthcare Information and Management Systems Society (HIMSS). EMRAM is a widely embraced structure for assessing EMR capabilities within acute care settings, and EMRAM Stage 4 is generally regarded as a proxy for the capabilities needed to meet initial criteria for achieving MU. The adoption of EHR technologies is costly and time consuming, and incentive payments are only received based on specific terms in the legislation. Currently less than half (43 percent) of integrated delivery systems or single hospital systems report having completed EHR implementation, while implementation efforts are still underway for 52 percent of healthcare systems.¹

Most organizations are currently being tested in “Phase One” of their implementation. According to government figures through February 2013, an estimated 219,257 hospitals, office-based physicians and other eligible professionals have shared just over $12.3 billion in federal EHR incentive payments under ARRA. Additionally, 3,757 hospitals, or 75 percent of the 5,011 U.S. hospitals eligible to receive federal funding under the program, have received an EHR incentive payment through February 2013.²

The figure below illustrates the Center for Disease Control’s (CDC) Meaningful Use Timeline³
Feedback from the Field

As part of its market research of the healthcare sector, DATAMARK, Inc. sponsored a roundtable discussion in May 2013 to better understand the EHR experience within healthcare organizations. DATAMARK is a provider of digital mailroom, data entry, document processing and other business process outsourcing services for a wide spectrum of industry verticals, including healthcare. The roundtable, which brought together several CIOs, physicians and other stakeholders from U.S.-based healthcare organizations, was hosted and moderated by Creative Healthcare, a provider of performance improvement solutions, including Six Sigma, Lean and ISO 9001.

The roundtable provided a forum for participants to discuss their experiences with EHRs, including implementation strategies, challenges and obstacles to successful deployment. The findings in this report summarize the participants’ feedback.
**Vendors:** In general, most of the participants reported using a single software solution for as much of the EHR as possible. For some of the participants, this meant rolling out a single solution for an entire health system or region. For others, it meant standardizing as much of a single hospital’s EHR environment as possible.

EHR vendors included Cerner, MEDITECH, Allscripts, Practice Fusion and Paragon. Some of the organizations chose these vendors because they had historical relationships with them, while others didn’t believe their legacy systems could meet the needs of EHR implementation. In these cases, they chose new vendors.

In all cases, despite an effort towards as much consistency as possible, participants needed to hire additional vendors to provide specialty applications. The most notable of these were scanned documents and others that weren’t exclusively comprised of discrete data points.

**Timelines:** The intensity of effort to deploy EMRs appears to be based on: (1) specialty groups or units requiring different strategies, (2) the need to provide add-on templates and applications, and (3) in-house resources available for roll-out. Even in organizations where multiple software solutions worked well together, it was reported that there seemed to be an exhaustive list of development and upgrade opportunities. A participating M.D. and CMIO of a large health system reported, “Functionally, it is working well, but the user experience isn’t. We’re trying to meet Stage 2 Meaningful Use and other criteria, but it’s difficult to stop while in process and do an overhaul of the system. We also sometimes struggle with Meaningful Use, and the deadlines have put a lot of stress on the vendors. I don’t know if they’re adequately prepared for that. We had more time in the past to do updates and get everything done, like testing, when updates came forward.”

When asked where the participants were in the process of EHR implementation, all had either met Stage 1 requirements and achieved Meaningful Use or were on target to do so. This meant that most were working toward Stage 2 requirements and, in some cases, were focusing on other supporting initiatives, such as implementation of bar coding as an aim for higher stages of achievement (i.e. Stages 6 and 7). Some organizations implemented their EHR systems years ago while others had initiated efforts directly following enactment of the federal government’s legislation.

Still, the participants shared that some had done the bare minimum to meet Stage 1 requirements. Another CIO from a health system in Northwest Illinois said that in his organization approximately 55 percent of the physicians use a full system, including messaging; data input for demographics and vital signs; and template-based progress notes. The remaining 45 percent of the physicians, though, were not fully implemented, but on some version of the EHR to meet Meaningful Use Phase 1 requirements. The organization did not bring them up fully on documentation but did fully implement e-prescribing and other needed elements. He said, “We call it ‘EMR(electronic medical record) lite’.”
**Approaches:** Most practices choose a hybrid or blended approach for converting paper medical charts to their new EHR systems. Critical data required to support remote clinical decisions or as prompts for care reminders and interaction warnings (e.g., immunization history, allergies, medications, chronic diagnoses, etc.), are abstracted and entered directly into EHR patient records. Those that typically include electronic conversion are the systems that are providing the practice interfaces with the implementation of the EHR (e.g. laboratory history). Other supporting documents or summaries are scanned and linked to the electronic patient record for viewing access.

These approaches varied greatly between outpatient clinic and acute care settings. Some organizations chose not to convert any historical data while others worked in a scheduled manner to review up to three years back of data. The greatest determining factor for both using a hybrid approach and “staging” was, again, related to the availability of functional technology or applications and resources available to handle the workload.

A hybrid approach was taken by a health system in Pennsylvania, which used Paragon for its inpatient system and Allscripts for its outpatient system. The CIO for this hospital said the hybrid approach causes some problems, especially when the two systems do not correlate. In fact, some physicians simply switch back to paper when the two systems don’t correlate. The back-and-forth from electronic to paper records stymies the hospital’s mission and continually sets the hospital’s agenda back, he said. Still, his organization is preparing for Stage 2 Meaningful Use.

**Effects:** The message was clear: tight timelines, vendor and/or application challenges and limited resources simply did not allow the organizations to rollout EHR conversions in a way that created end-user satisfaction. The CIO of a major healthcare system in Southern California said, “The biggest challenge healthcare leaders face is the aggressive Meaningful Use schedule. There’s a pretty heavy onus on all of us. A two-year implementation is pretty aggressive—we’re racing against our own deadlines.”

In spite of these challenges, the organizations were forging ahead with hopes of evolving their deliverables over time and in coordination with vendors that were listening to the users. The CIO reminded participants that “the ideal Stage 7 that HIMS propagates is that documents are scanned on the nursing floor almost contemporaneously with patient services.” Given the tight timeframes for growth that have been prescribed, organizations will need to accelerate their capabilities as soon as possible.

**Challenges:** Making the switch has not been easy for most healthcare organizations. One of the physician participants said that the transition to an electronic environment has been a major undertaking. With more than 1,500 caregivers, the health system implemented a full EHR across eight facilities in 2012. He said, “It’s a major transition for any healthcare organization to convert from paper. I call it a disruptive and transformative change for physicians.”

A Wisconsin health system information technology leader confirmed that as an organization that attested for Stage 1 and is preparing for Stage 2, “the EHR definitely affects workflow and takes away
from the overall process even though the hospital has used a MEDITECH system since the early ‘90s.” The MU requirements have added pressures to even existing systems so, in a sense, everyone is starting at the beginning and yet sometimes working with archaic systems or systems that don’t integrate well.

The remaining paper still archived in organizations, complicated by the lack of integration of systems, has spotlighted the issue of physician and other end-user dissatisfaction. Part of their dissatisfaction is associated with the toll these issues have on productivity in the clinical and medical settings. These issues have been well documented and, in an HIMSS Analytics Report from May of 2013⁴, it was noted that the conversion of paper records to electronic records had impacted the workflow of clinicians who need to be able to easily access information to provide safe, quality care to patients.

**Paper Records:** Most of the participants’ organizations had not digitized all of the medical records and some had chosen not to digitize any historical information. This creates a significant challenge, particularly in environments where stored data and paper charts have to be pulled specifically for review. A physician stated, “We have no concurrent scanning of documents during the acute-care hospitalization. We have a lot of paper, still. Physicians are accessing both the EHR and paper. I feel there are tremendous opportunities to optimize that process.”

A CIO seconded that statement by saying that “the back-and-forth from electronic to paper records stymies the hospital’s mission and continually sets the hospital’s agenda back.”

In a recent study conducted by Iron Mountain⁵, 49 percent of hospital respondents said that they had scanned what they needed and were within budget, but still had a backlog of records to scan.

**Lack of Integration:** Multiple vendors were reported to be a primary issue associated with a lack of integration efforts. An M.D. stated, “Our EHR product is MEDITECH and our scanning product is McKesson, so in a sense you’re looking in two different locations for patient information and also not seeing concurrent patient documents in patient folders. If I wanted to see what went on with a patient six months ago, I would need to go into a different system.” The roundtable participants also noted that the learning curve is challenging for physicians working in multiple facilities and using multiple EHR systems.

**Ease of Use:** When asked how the system worked for him, a physician from the Northwest Illinois health system responded, “Sometimes it’s easy. The documents may not be scanned in the order they came in, though. If I want to look at an audiogram from 5 years ago that came in the mail from California, it may have yesterday’s date on it and not be in the order the scans were actually done. We also have limited space to name these things, so giving them an inscription to find things makes it difficult, too. We can’t attach a scanned document to an encounter, so the scanned documents might be interwoven between encounters.”

Another physician added, “In general, the complaint that we hear from physicians is that it’s easy to find encounters, but if they’re searching for specific data within an encounter or for
specific data that may exist in multiple encounters, there may be some challenges in trying to find those documents.”

In a combined study between TEKsystems and HIMSS, end-user adoption is assumed to be a critical success factor to any EHR implementation effort. Nearly half of the healthcare organizations surveyed expected their end users to adopt to the new EHR system enhancements or upgrades within six to twelve months after the system was launched. However, more than half of healthcare professionals (64 percent) believe achieving adoption is a roadblock to successful EHR implementation. Once the new system is in place, only one-quarter (26 percent) of healthcare professionals are extremely confident that their end users will fully adapt to the new system.

**Productivity:** All participants were in agreement that productivity was slowed by the addition of EHRs, the emerging requirements associated with them, and end-user difficulties. A CIO stated, “part of it is the physicians’ lack of familiarity with the systems, but it’s also the amount of data they’re being asked to capture now. For example, with medication reconciliation, there may be three or more reconciliations when a patient presents in the ED and each of those medications needs to be coded. If they’re not coded, the reconciliation doesn’t get done and the orders don’t get into CPOE, and the process breaks down.”

A participant added, “If medicine was an assembly line, it would be so much easier. Every case is different though, and produces a variable in there.”

Still, in the same Iron Mountain survey noted earlier, a surprising 78 percent of hospitals expect to continue to treat patients using paper records for up to five more years, despite the financial incentive for meeting CMS requirements.

**Conclusion**

Although the ARRA legislation offers roughly $18 billion in net reimbursements for early adopters of EHR, there is a significant difference between planning for and realizing an electronic environment. The DATAMARK and Creative Healthcare roundtable feedback suggests that implementations are proving more difficult than anticipated, and the rate of adoption is often slower than projected.

Being pushed into an EHR through MU has led to a certain amount of displeasure among hospital caregivers and administrators, but the move toward technology is not turning all organizations off. On the contrary, at least one of the participating hospitals has embraced the move to electronic health records.

“We went live with Practice Fusion in 2009 and physicians didn’t want to go back, but are going forward, shutting off the paper,” said this hospital’s CIO.

Even so, an April 2011 survey released by the College of Healthcare Information Management Executives (CHIME) reveals that many CIOs are rethinking their original optimism on how quickly it
It would take to achieve MU Stage 1. The survey reported that 15 percent of CIOs claimed they would comply within the first year, down from 24 percent in a survey conducted in August 2010.

An April 2011 report from Medical Group Management Association (MGMA) reveals that while nearly 57 percent of practices that still use paper records anticipate insufficient return on investment (ROI), the bigger issue is physician productivity. More than 78 percent feared there would be a significant loss of provider productivity during implementation (e.g., long learning curves with extensive training), and more than 67 percent have similar concerns after the EHR transition period. This equates to lower patient throughput and represents a material effect on physicians’ earning potential.

To increase the success of EHR adoption, healthcare organizations must develop an effective plan for their transition. This plan must treat EHR adoption as a change-management effort that involves understanding and addressing the barriers to ease of use and productivity.

The following are areas of focus where solutions and leveraging of best practices are needed and provide opportunities for improvement.

**Involve physicians and other clinicians at the system development level:** This was said to be essential to the advancement of EHR efforts. While some vendors are beginning to incorporate this clinical expertise onto their teams, one of the physicians said, “More innovation is needed. Vendors need to improve the user interface. Our health IT vendors are slow to embrace new, emerging tech. I’d like to see them support clinical workflows, not just reporting. The vendor issues we face include not providing a seamless user experience.”

**Implementation of processes and tools:** Involving patients in the process of inputting electronic information could alleviate some stress from staff. A CIO suggested patient kiosks, stating, “This would take the pressure off the nurse and get the right answer into the EHR. There would be less issue with who entered it incorrectly, and, potentially, error rates would decline.” Anything that can be done to focus on the input into the process and offer physicians choices would be ideal. Options, such as Sky Wi-Fi Smart Pens, bubble forms and audio or speech devices served as possibilities that held the potential to encourage greater use, save time and lower error rates.

**Accelerate the process:** By accelerating their “staging” processes, organizations are forced to create greater capabilities and move more quickly through the initial stages of development. According to an article in *Health Affairs*, EHR benefits depended on the amount of viewable clinical data. The amount of initially viewable data depended on efforts to type in existing paper-based medical record data and to electronically import data from lab, billing and other systems. As patient data accumulated over time, financial savings accrued from less staff time spent finding, pulling and filing charts, and less physician time spent locating information.

**How to Proceed**

Many providers are struggling with their new environments of paper and electronic records. Organizations know that they can’t afford to spend millions of dollars upgrading an IT infrastructure to
support an electronic environment only to have the effort derailed due to lack of clinician adoption. Providers that transition to an EHR with more positive experiences will be those that best manage challenges that may come up in the hybrid environment.

With the increase in EHR use over the last decade, organizations such as the American Health Information Management Association (AHIMA) have analyzed the potential impact this shift is having on HIM departments. The Journal of AHIMA\textsuperscript{11} provided the following guidance on the HIM function:

“While the HIM department and its functions will certainly change, the reality is that maintenance of the EHR and its by-products will require the expertise of HIM professionals... Attention to detail; ability to compare competing data sources and reach a conclusion about data accuracy; project management; creative problem solving; categorization of data; data reporting; evaluating, understanding, and interpreting regulatory standards; and the many other skills that HIM professionals possess will be critical to maintaining an accurate and functional electronic medical record.”

Healthcare organizations need to understand and regularly evaluate the evolving role of the HIM staff and technology while developing their EHR adoption strategy. According to the Bureau of Labor Statistics, employment rates for medical records and health information technicians are expected to increase by 20 percent, much faster than for all occupations, through 2018. Hospitals can accelerate their transitions to the EHR by improving how they prepare for the transition.

As one participant stated, “It’s hard work, but anything truly worthwhile and disruptive is going to be difficult. But the rewards will materialize for organizations that persevere through the uncertainty.”

**Resources**

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Notes


3. www.cdc.gov/ehrmeaningfuluse/timeline.html


8. “Healthcare CIOs Still Optimistic About Stage 1, But Majority Won’t Get EHR Incentive Funding Early,” College of Health Information Management Executives, April 2011.

