



2011 HIMSS Analytics Report on Health Information Exchange, Patient-Centered Medical Home and Accountable Care

Opportunities for Engagement and Transformation through Emerging Care Delivery Models

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Background

Information technology (IT) is widely viewed as a tool that can be used to both reduce medical errors and improve the overall quality of care. In order to promote the use of IT in healthcare, the U.S. government has taken a number of steps over the past decade.

In 2004, the Office of the National Coordinator for Health Information Technology (ONC) was created by Executive Order from President George W. Bush. In that same year, the Agency for Healthcare Research and Quality (AHRQ)¹ established a National Resource Center for Health IT to assist healthcare providers move closer to a fully operational health IT system in support of improved quality, safety, and continuity of care.

The most significant legislative promotion of the use of electronic health records (EHRs) occurred with the passage of the American Recovery and Reinvestment Act (ARRA) in 2009. Title XIII of this Act, called the Health IT for Economic Clinical Health Act (or HITECH), allocated more than \$19.2 billion in federal funding to subsidize the purchase of EHRs by physicians and hospitals. The meaningful use requirements of this act, the first stage of which was finalized in July Of 2010, set forth an outline of the requirements that healthcare providers must achieve in order to qualify for these incentives².

But federal policymakers clearly realize that the real value of health IT is not merely in the digitization of patient records, but rather the ability to share that information between and among providers. So in addition to the EHR adoption incentives, HITECH's provisions also include funding vehicles to promote the use of IT to share patient information. Between February and March 2010, ONC announced more than \$500 million in State Health Information Exchange Cooperative Agreement Program awards³. These awards were distributed to grantees in all 50 states, the District of Columbia and U.S. territories (including Puerto Rico and the Virgin Islands) to fund efforts at the state level to build the capacity for health information exchange both within and across state lines. In 2010, ONC also announced more than \$250 million in Beacon Award grants to 17 healthcare organizations and consortia that will use health information exchange technologies to foster improved care and disease management processes in their local communities⁴. An additional \$16 million was made available in January 2011 through ONC's Challenge Grants program. Ten awardees were granted awards of \$1 to \$2 million in this program.

Additionally, in an effort to introduce payment reforms, the Patient Protection and Affordable Care Act (PPACA), was signed into law in March 2010. The PPACA stipulates that the Secretary of Health and Human Services direct the Centers for Medicare & Medicaid Services (CMS) to establish shared savings programs by January 2012⁵ that foster the creation of Accountable Care Organizations (ACO). This month CMS

¹ AHRQ Website <http://www.ahrq.gov/qual/advptsafety.htm> Accessed February 2011

² HIMSS Meaningful Use OneSource http://www.himss.org/ASP/topics_FocusDynamic.asp?faid=402 Accessed February 2011

³ ONC Website http://healthit.hhs.gov/portal/server.pt?open=512&objID=1488&parentname=CommunityPage&parentid=58&mode=2&in_hi_userid=11113&cached=true Accessed February 2011

⁴ ONC Website, Beacon Community Program. <http://healthit.hhs.gov/portal/server.pt?open=512&mode=2&objID=1933> Accessed February 2011

⁵ HIMSS Accountable Care Organization Frequently Asked Questions.

<http://www.himss.org/content/output/3A20EE030F2146629C6695D989BD7C55.pdf> June 2010.

<http://www.himss.org/content/output/48782971023B4D218A7519A1EE93FD2B.pdf> Accessed February 2011

transmitted to the Office of Management and Budget a final rule to implement the Medicare Shared Savings Program, a form of ACO authorized under the health reform law⁶. These programs will also reward such organizations that take responsibility for managing costs and improving quality of care.

In this environment, healthcare IT in the U.S. has flourished. In 2006, only 22 percent of hospitals in the U.S. had achieved Stage Three on the HIMSS Analytics Electronic Medical Record Model (EMRAM). By the end of 2010, two-thirds of U.S. hospitals could claim that they had reached a minimum of Stage Three on this model⁷.

Study Population and Approach

This study was designed to understand the perceptions and attitudes of senior IT executives with regard to key issues impacting healthcare delivery in the U.S. today. Issues addressed in this study included interoperability, clinical integration, data sharing arrangements developed between healthcare organizations in a regional, state and national context, participation in health information exchanges (HIEs), and participants' perceptions of two emerging care delivery models: patient-centered medical homes (PCMH) and accountable care organizations (ACOs).

In order to achieve the research goals, senior IT executives from both hospital and ambulatory environments were invited to participate in one of two focus groups hosted in early February 2011. One group included respondents from hospital settings; the other group included respondents from ambulatory settings. The focus groups were hosted via conference calls that lasted one hour. Individuals in both groups were asked the same core set of questions. By study design, all respondents working for a hospital organization represented a healthcare organization that had a minimum of 50 licensed beds. Ambulatory respondents were required to work for a medical practice that had a minimum of five physicians on staff.

The respondents from hospital organizations represented a variety of hospitals, from a 50-bed hospital to a 477-bed integrated delivery system. The respondents working for ambulatory facilities ranged from a six-physician behavioral health practice to a senior IT executive representing more than 200 locations nationally. A variety of ambulatory specialties were also represented in this research, including surgery centers, orthopedics, mental/behavioral health, hospital-owned facilities, and ophthalmology. A total of 17 senior IT executives participated in this research.

All focus groups were facilitated by HIMSS Analytics. The focus group discussion guide was jointly developed by HIMSS Analytics and executives from the sponsoring organization, NextGen Healthcare.

It should be stated that while this small sample size is not meant to be representative of the market as a whole, the sample population does provide an excellent point for generating discussion around this topic.

⁶ Health Data Management: Medicare Readies ACO Rule <http://www.healthdatamanagement.com/news/Medicare-Readies-ACO-Rule-reform-41925-1.html> Accessed February 2011

⁷ HIMSS Analytics EMRAM Model http://www.himssanalytics.org/hc_providers/emr_adoption.asp Accessed February 2011

Findings

Clinical Integration and Interoperability

Respondents were asked to provide their own definition of two terms – interoperability and clinical integration. While there was initial discussion that identified interoperability as the ability for users to navigate through data across multiple systems seamlessly, that position was clarified by others in the group. In general, respondents referred to interoperability as the technical aspect, or the “nuts and bolts” of enabling data to be shared between technology platforms and different software systems. This includes ensuring that appropriate standards and protocols are in place.

Clinical integration was defined by several respondents as the ability to use the data sharing that was established with interoperability to ensure seamless exchange of information to end users across the continuum of care. In addition, this seamless exchange of data should enable the use of data in a meaningful way. Clinical integration was also defined as the ability to integrate the data from devices (such as an electronic stethoscope or vital signs monitor) into the clinical record. In other words, a consensus definition emerged that interoperability was the technical aspect of a seamless flow of information, whereas clinical integration related to the process or workflow-related aspects of data exchange.

Information Sharing

In this context, focus group participants were asked to identify how they were using interoperability to share data with other organizations. To level set the conversation, respondents were asked to think more broadly than HL7 interfaces to distribute and receive data. In general, respondents indicated that most of the data sharing taking place in their local service area was either with other healthcare organizations in their local region or at the state level. Respondents were unlikely to report that they were sharing information at the national level. In fact, several respondents noted that their expectation was that they would share information at the regional and state level and it was up to organizations such as state HIEs to facilitate data sharing at the national level.

Reasons for sharing data

Universally, the respondents stated that the goal of data sharing by healthcare organizations is to enhance the quality of care received by patients. Respondents did, however, note a variety of different ways in which this goal could be achieved. For instance, respondents felt that data sharing facilitates a higher level of care quality across the continuum of care by making a more complete record of a patient’s healthcare history available to each of the healthcare professionals providing treatment. As such, it provides a healthcare professional with a complete record that was accurately documented by other healthcare professionals and was not impacted by a patient’s lay understanding of medical terms, conditions, and medication names, language barriers or information drawn from the patient’s memory. This type of sharing, when done correctly, also can speak for a patient who doesn’t have the opportunity or ability to speak for him or herself.

Types of data being shared

Nearly all of the respondents in this study reported sharing clinical information with other healthcare organizations, but the current nature of the sharing was still rather limited. One respondent in the ambulatory group reported that the only information they shared was data required by the state. Other respondents reported sharing a wider variety of data with other healthcare organizations in their geographic area. The types of data most frequently shared included laboratory and radiology results and information collected in patient history and physical examinations (such as medication lists or allergies).

Some respondents noted that they were sharing only data that was captured as discrete data elements and other respondents noted that they were sharing information captured as images. Despite its potential to facilitate standardized data exchange, none of the respondents reported sharing data using a Continuity of Care Document (CCD) format, which summarizes a patient's medical status for the purpose of information exchange in an industry-standard, prescribed, interoperable format. Content typically found in these documents includes both administrative and clinical information⁸.

Means for data sharing

The manner in which data is currently shared between healthcare organizations varied widely and can be grouped into four broad categories. First, data sharing remains largely manual. Second, data sharing can be done via an electronic means that is designed and maintained at and by the healthcare organization. Third, data is made available to a wide variety of care delivery organizations through a formal data sharing arrangement such as a health information exchange (HIE). Finally, the responsibility for data sharing might be given to the patient, who then has responsibility for getting the information to his/her physician.

At the most basic level, respondents reported sharing information via faxes or encrypted e-mails with other organizations. This often happens when an organization is attempting to share information with a second location but cannot provide, or the receiving organization cannot accept, direct electronic data sharing.

Another means of sharing identified by a number of respondents from both hospitals and ambulatory organizations is the use of a web portal, developed to allow physicians access medical record information from multiple locations, including physician and home-based offices. A respondent working for an ambulatory facility reported that they used a similar concept in which they had a VPN connection to a hospital in their area so that data could be viewed.

Several respondents noted that data sharing is also facilitated through HIEs. This model of data sharing was noted somewhat more frequently among respondents who worked for hospital organizations. About half of the individuals in the focus group reported participation in an HIE. To put this use of HIEs into context, according to the HIMSS Analytics™ Database, 20 percent of all U.S. hospitals and 23 percent of all U.S. hospitals with 50 or more licensed beds participate in an HIE⁹. HIMSS Analytics does not capture

⁸ Data from the HITSP website, http://www.hitsp.org/ConstructSet_Details.aspx?PrefixAlpha=4&PrefixNumeric=32. Accessed February 2011

⁹ www.himssanalytics.org HIMSS Analytics Accessed February 2011

information on the use of HIEs in the ambulatory market and in this sample, only one ambulatory care respondent noted that their practice participated in an HIE. One of the key barriers to participation in an HIE was the lack of a presence of this type of organization in the respondent's region.

In the final example of data sharing, patients are given the responsibility for providing their data to providers in multiple healthcare settings. In some instances, this involved the physician's office providing the patient with an encrypted thumb drive that they could carry from provider to provider, thus making their data available. This was an option identified only by those respondents who worked for an ambulatory organization.

Takeaway: Information sharing between healthcare organizations allows clinicians to have a comprehensive view of their patient's medical history. Organizations need to evaluate not only the technical components required for participating in HIEs and other data sharing agreements, but also understand the workflow and staffing changes required to take full advantage of these arrangements.

Patient-Centered Medical Home

In order to ensure that all respondents were using the same framework to answer questions about patient-centered medical homes, respondents were given a definition for guidance. For the purposes of this research, patient-centered medical home was defined as a model of care under which patients have a direct relationship with a provider who coordinates a cooperative team of healthcare professionals, takes collective responsibility for the care provided to the patient and arranges for appropriate care with other qualified professionals as needed¹⁰.

All of the respondents in these focus groups were familiar with the concept of a patient-centered medical home. The initial reaction to a patient-centered medical home was positive, particularly among the respondents from the ambulatory organizations. Patient-centered medical homes were perceived to have value for coordination of patient care across multiple care settings and for allowing for a greater quality of care for patients. In fact, several respondents noted that they were already participating in organizations similar in concept to a patient-centered medical home, such as a state Medicaid program or an environment in which data was shared between ambulatory physicians in a geographic region whereby all physicians were employed by the hospital. While respondents acknowledged that these were not patient-centered medical homes, they might provide guidelines useful for modeling a patient-centered medical home.

However, there was skepticism raised in a number of areas. First, there were concerns about the ability of healthcare providers to truly work together to put the patient's best interest to the forefront. Several respondents also noted concern about patients' reactions to this type of model, noting that patients had reservations about a model which might be perceived as restricting access to healthcare. An additional concern raised about patient-centered medical home was the impact of financial considerations, particularly with respect to how reimbursement would be divided among the providers

¹⁰ Definition modified from that posted on the HIMSS website.
http://www.himss.org/content/files/factsheet_ambul_quality2010.pdf Accessed January 2011

involved in the patient-centered medical home, as well as restrictions in service that might be placed on care by payer organizations.

Lastly, many of the respondents felt that patient-centered medical homes would play a very close role with ACOs and be one means for delivering service within the ACO model. One of the key differences seen between patient-centered medical homes and ACOs was that patient-centered medical homes are seen to be driven by the primary care physician, whereas ACOs are seen as driven from the hospital or health system perspective.

Takeaway: Patient-centered medical homes are seen as forming the basis for an ACO. Patient-centered medical homes allow for the coordination of patient care across the continuum of care and as such should be considered as part of a healthcare organization's care delivery strategy.

Accountable Care Organizations (ACOs)

To ensure that all respondents were of the same mindset when discussing ACOs, they were given a definition for guidance. The definition offered in this study was that ACOs are provider groups that accept responsibility and financial risk for the cost and quality of care delivered to a specific population of patients cared for by the groups' clinicians. Many ACOs will include hospitals, home health agencies, nursing homes and other care delivery organizations. Respondents were also reminded that there are numerous types of practice arrangements that can serve as ACOs¹¹. Most of the respondents agreed with this assessment. As with patient-centered medical home, all respondents in these focus groups were aware of the concept of ACOs.

Respondents believed that ACOs as a concept are still in their infancy and lack clear definition. This has resulted in an uncertain picture about the future of ACOs for these respondents. Two of the key considerations for determining the long term viability of ACOs will be financial implications and the political environment. Respondents felt that while ACOs could benefit the industry, both of these could derail the ACO concept if not well conceived.

The key financial consideration raised by nearly all of the respondents was that the terms for sharing revenue between healthcare providers are not clearly defined. Respondents reported that their healthcare organizations are very concerned about committing to an ACO model without understanding what their share of the revenue (and risk) will be and who will be responsible for making decisions about the distribution of payment for services. This was particularly the case for respondents representing the ambulatory market, who indicated that their organizations were already operating on very tight margins and were concerned that participating in an ACO could reduce margins even further. Some of the respondents also noted that ACOs invoke images of the capitated HMO models of the 1990s, which were largely viewed as unsuccessful. Concerns about a lack of a well-defined payment structure is compounded by the potential investments in technology that respondents felt they would have to make up front just to participate in an ACO.

The political environment was also seen as playing a key role in determining whether or not ACOs would be successful in the future. At present, organizations are not mandated

¹¹ Definition modified from that posted on the Physicians for a National Health Program website. <http://pnhp.org/blog/2010/07/09what-is-an-accountable-care-organization/> Accessed January 2011

to participate in an ACO. Respondents indicated that the only way in which to guarantee the success of ACOs in the future was for the government to either make them mandatory or offer powerful financial incentives for participation by healthcare organizations.

While none of the respondents in this study were a part of an ACO at the time, both hospital and ambulatory respondents noted that their organizations were having preliminary conversations with other stakeholders about the creation of an ACO. One of the key reasons identified by respondents for participating in an ACO was to retain their competitive advantage in their healthcare market. A second benefit to participating in an ACO at an early stage was to be able to provide a voice at the table and be instrumental in the formation of the ACO on their terms. There was considerable concern among these respondents that they would be at a disadvantage if they participated in an ACO they did not help develop.

Despite interest in ACOs from a number of respondents, there are additional barriers causing organizations to proceed with caution. A number of the ambulatory care-based respondents noted that there is resistance to participate in this type of model, particularly among specialists who are comfortable with the way in which they are currently reimbursed. These respondents also noted concerns about the technology investment required to participate in an ACO, including security issues and a lack of standards. One responded that his organization was not even going to consider participating in an ACO at this time because of a focus on other priorities, such as meaningful use.

Takeaway: Healthcare organizations need to begin conversations about participation in ACOs now. Delaying these conversations could result in a scenario where healthcare organizations are participating in an ACO where the rules were established by someone else.

Summary and Conclusion

Patients requiring treatment are seen in a wide variety of healthcare settings, including hospitals, ambulatory care facilities, long term care facilities and their own homes. The current structure of healthcare is one in which patients are responsible for coordinating their own care as they navigate from one type of healthcare organization to another. This approach creates an environment in which it is difficult for multiple healthcare providers to have a complete view of the patient's medical history and needs.

A lack of care coordination can create a number of problems. First, potential exists for overuse of resources, in which a physician may order the same diagnostic tests ordered by another clinician simply because they did not have access to the original test results. Second, lack of coordination in care can result in missed opportunities for timely interventions or might result in potential harm. For example, when a physician may order a prescription without understanding the full spectrum of medications the patient has been previously prescribed by another care provider. Data sharing between healthcare organizations of all types can be a powerful tool for addressing these problems and delivering higher quality, more cost-effective care.

Indeed, most of the respondents in this study reported that they have created a means to share data with other care providers in their region or their state. However, at this time,

the means for sharing information across the continuum of care are diverse, often using manual processes. The methods used for exchange of information range from fax or encrypted e-mail to web-portals and encrypted devices given directly to patients. Another way in which organizations are presently sharing information is through unique and direct point-to-point interfaces with other healthcare organizations.

Sharing information through these methods addresses the basic premise of ensuring a patient's medical information is available across the continuum of care, regardless of provider and setting. Organizations that choose them, however, need to be aware they can raise a series of issues that must be addressed in order to make the data sharing arrangement successful.

One issue to consider is the time it takes staff to manage them. For instance, a point-to-point interface adds layers of work for the IT staff, who must cater to the unique systems and configurations in place at each organization with which data is shared. A change in configuration or vendor by any of the parties involved needs to be addressed individually, potentially requiring healthcare organizations to establish solutions that are unique to that environment. For an organization that is managing data exchange with multiple healthcare organizations, that equates to a number of individualized solutions. Data sharing can also be compromised because standards do not exist, making it more complicated for healthcare organizations to correctly map information from their own systems to those with which they are sharing data.

Respondents also identified several other barriers to consider when establishing data sharing relationships. Being able to keep a patient's data secure was a key issue mentioned in this research. The more types of data sharing relationships that a healthcare organization has to establish and maintain, the greater the possibility for a misstep or compromised patient data. Issues also exist with regard to the lack of a unique patient identifier, which could be used to ensure that the right data is always associated with the right patient. A unique patient identifier would eliminate any confusion that might exist if, for example, a healthcare organization has five patients named John Smith.

HIEs have the ability to eliminate some of those issues, as they provide a single platform for positive patient identification and data sharing between healthcare organizations in a local environment. This not only offers healthcare providers a huge advantage in having a complete record on the patients they serve, it enables providers to treat patients knowing they have access to the most comprehensive information possible. It also eliminates the requirement to upgrade an interface every time a healthcare organization upgrades its IT environment. Thus, while not every healthcare organization has the ability to join an HIE because one might not exist in their area, they should explore participating in an HIE if one is present.

Patient-centered medical homes and ACOs will be responsible for overseeing and coordinating care, with a particular emphasis on the relationship between an individual patient and his or her primary care provider and participating in an HIE is a precursor to participating in these models. Among the focus group respondents, patient-centered medical homes appear to be well understood and supported as valuable for care coordination across multiple setting. As ACOs are relatively newer organizations, there is some hesitation in the industry with regard to how they will ultimately be configured.

Several models have been identified as having the potential to become ACOs. These include¹²:

- IDS models driven by a system that owns hospitals and physician practices
- Multispecialty group practice models that have strong affiliations with a hospital
- Physician-hospital organizations that have a non-employee medical staff
- Independent practice associations that jointly contract with health plans
- Virtual physician organizations comprised of small, independent physician practices

Participation in an HIE is a precursor to effectively engaging in the PCMH and ACO models. This level of data sharing requires that the data can be seamlessly and securely be integrated across the continuum of care. As such, healthcare organizations need to have a sophisticated technology platform that includes an EHR to allow for the full capture of patient information by each participant, as well as provides comprehensive clinical decision support, and business and clinical analytics capabilities.

Done correctly, respondents felt that patient-centered medical homes and ACOs are vehicles that could result in better coordinated care at a reduced cost. For instance, a more complete medical record will enable providers to eliminate unnecessary duplicate testing. There are, however, concerns in the market about the viability of these solutions. Healthcare organizations are deeply entrenched in current payment models. Uncertainty around the payment agreements that hospitals, physicians and other providers would enter into if they were to agree to participate in an ACO could derail the formation of these organizations. Representatives from all impacted organizations need to be brought to the table during negotiations.

Some organizations have chosen not to wait until ACOs are fully formulated to explore this concept. Several participants noted that their organizations are beginning to explore the development of an ACO with Premier, which has created two collaboratives¹³. The ACO Readiness Collaborative will help organizations that still need to make some preparations before launching ACOs. The ACO Implementation Collaborative is designed for healthcare organizations that are ready to implement an ACO at this time. Other organizations are also offering collaboratives. In April 2010, the American Medical Group Association (AMGA) announced that it was offering two collaboratives designed to create a forum in which healthcare organizations can learn from each other as they begin to explore the viability of an ACO for their organization¹⁴.

The healthcare organizations in this study that are already participating in ACO discussions with other stakeholders are doing so because it gives them a voice to help define Accountable Care in their region. Not only does this help ensure their interests will be protected, but it also provides them with the opportunity to share ideas and best practices with each other. Even if the establishment of an ACO is not the result of these conversations, healthcare organizations will have the opportunity to explore and prepare

¹² Health Affairs Health Policy Brief: Accountable Care Organizations. <http://www.rwjf.org/files/research/66449.pdf> Accessed February 2011

¹³ Premier ACO Collaboratives – Frequently Asked Questions. <http://www.premierinc.com/about/news/10-may/aco-faqs.pdf> Accessed February 2011.

¹⁴ AMGA. American Medical Group Association Launches Accountable Care Organization (ACO) Learning Collaboratives <http://www.newswise.com/articles/view/563807/> Accessed February 2011.

for the issues they will be required to address in the future, such as discovering better ways to improve care and become more patient-centric. Healthcare organizations that choose not to participate in discussions about Accountable Care at this time risk having to join an existing ACO, without the chance to offer any input on its development.

HIEs, patient-centered medical homes and ACOs have the opportunity to play a significant role in changing the way healthcare is delivered in the U.S. Successful participation in any of these initiatives requires healthcare organizations to begin revamping their vision for care delivery if healthcare of the future is to indeed be different than healthcare of the past.

These new care delivery models are seen as vital for healthcare system reform, as we seek to move from volume-based, fee-for-service payment systems to value-based, pay-for-quality systems. Healthcare organizations need to engage their peers and colleagues in conversation now in order to understand what HIE, patient-centered medical home and ACO opportunities are available in their area, and how to maximize the impact on their patients and their practices. Prototypes of these care models are being developed today that can be used to guide newly forming organizations through the technology and workflow changes needed to make such initiatives a success. Understanding interoperability strategies and gaining a voice at the table during the early development stages of PCMH and ACO will help practices and hospitals alike more effectively approach the end goal of transforming healthcare delivery.