Health Care IT —
Convergence or Chaos

A Discussion on the Current Challenges and Future Rewards of HIT in an Evolving Care Setting

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Few would argue that health care as we know it is undergoing an unprecedented revolution. Led by a government-driven multibillion dollar bet on health information technology (HIT), the nation is hoping to reign in the costs and inefficiencies associated with siloed, volume-driven, uncoordinated care. And while most of America agrees that technology is the answer to better, more cost-effective health care, the enormity of change that is upon us is historically incomparable.

Beyond Title XIII of the American Recovery and Reinvestment Act of 2009 (ARRA), also known as the Health Information Technology for Economic and Clinical Health (HITECH) Act, the nation is also faced with transitioning to ICD-10, an entirely new diagnosis and procedure coding system, as well as installing 5010, the updated Health Insurance Portability and Accountability Act (HIPAA) standard transaction (replacing 4010A1), which, by the way, is necessary to support ICD-10.

With all that is required and at stake to bring about the HIT benefits that the nation’s health care system so desperately needs, concerns now turn toward whether we are doing too much at the same time and whether there is enough time to get it right. This article will discuss the current challenges and future rewards of HIT within a dynamic regulatory landscape and evolving care setting.

The Regulations

At the forefront of change is HITECH. Broadly, HITECH seeks to drive the adoption of electronic health records (EHRs) as well as establish data standards, health infor-
formation exchanges (HIEs), and enhanced security and privacy controls (previously established under HIPAA).

Riding along side of HITECH is the national mandate to convert to ICD-10. ICD-10 replaces the existing 18,000 or so diagnosis and procedure codes of ICD-9 with approximately 155,000 new diagnosis and procedure codes. And, as most affected organizations will attest, there is little direct correlation between the coding systems, thus frustrating the many mapping and translation efforts occurring throughout the nation at this very moment.

According to the Centers for Medicare & Medicaid Services (CMS), ICD-10 codes must be used on all HIPAA transactions, including outpatient claims with dates of service and inpatient claims with dates of discharge on and after October 1, 2013. Claims and other transactions not coded as such will be rejected and invariably will result in reimbursement delays.

5010 is often mentioned in the same sentence as ICD-10 due to the fact that the current HIPAA standard transaction, 4010A1, cannot accommodate the new ICD-10 codes. Further, 5010 strives to mandate more of an adherence to the original intent of 4010, which was to establish a standardized data stream between covered entities (providers, payers, and clearinghouses) so that all parties could exchange patient/member and claim data in a universally acceptable format.

Despite best intentions, 4010 allows for variances in the data stream (i.e., “optional” data elements), which drives the use of multiple specifications, or “companion guides,” between covered entities. 5010 clamps down on 4010’s “variances” by making most of the data elements “required” and syntactically “specific.” As one can imagine, this is generating a tremendous amount of work (and in many cases, stress) at just about every covered entity organization.

Taken as a whole, these broad sweeping mandates are forcing a shift in models of care, care coordination, and accountability across the entire spectrum of care. This, in turn, is creating a need to implement quality assessment and reporting tools, interoperable systems, enhanced data privacy and security mandates, as well as new standards and certification frameworks. And while federal incentives are supporting investment in EHRs in the near term, in time (by 2015) this support will evolve into penalties for noncompliance.

**Evolving Care Models**

In order to address the disparate quality of care and confounding interplay between those who provide care and those who pay for it, new care models have recently come to the fore and are dependent upon the realization of the very meaningful use of HIT that HITECH calls for — baseline technology, standardized data, and privacy and security controls.

**Accountable Care Organizations**

Amongst the new care models is the concept of accountable care organizations (ACOs). ACOs focus on aligning incentives and accountability measures for providers across the continuum of care. Ideally, ACOs provide an integrated structure of care across various providers (physicians, nurses, specialists, and other clinicians) and settings (hospitals, clinics, skilled nursing facilities, and others), covering the entire continuum of care.

The Patient Protection and Affordable Care Act (PPACA) provides provisions for establishment of an ACO based on integrated medical groups or delivery systems where providers are part of an umbrella governance and legal structure that extends the boundary of accountability for quality and cost of care beyond the individual medical practice. ACOs can assume several different structures in order to fulfill the specifications for joint responsibility of care across providers and organizations. As an example, a specialty group may join efforts and integrate care delivery with a hospital to become an ACO.
To qualify as an organized ACO, the provider groups must fulfill a set of requirements as stipulated by the Secretary of Health and Human Services (HHS). For government-funded care, these requirements include accountability for the overall care (including quality and cost); implementation of legal, leadership, and management structures to support necessary treatment, payments, clinical processes, and administrative systems; adequate participation of primary care physicians to cover assigned beneficiaries; promotion of evidence-based medicine; performance reporting on quality and cost measures; coordination of care such as through the use of telehealth, remote patient monitoring, and other such enabling technologies; and demonstration of commitment to patient-centeredness and promotion of patient engagement. Although current regulations do not specify how much providers participating in ACOs will earn through the program, compensation for care is based on provider improvement of clinical performance and efficiency as seen through quality and cost control in care delivery.

In short, the payment model for ACOs advocates for quality and value through a gain-sharing calculation based on the standard Medicare fee-for-service model. In this program the provider is compensated on a yearly basis for successful spending management through bonuses. These bonuses are determined by cost savings as measured against prospectively established benchmarks of expected per capita expenditure. To qualify, the provider must comply with predetermined quality standards.

HIT plays a central role in the successful implementation of an ACO. For instance, one requirement for eligibility is to support processes that relate to quality and coordination of care and that leverage technologies such as telehealth and remote patient monitoring. Depending on the structure of an ACO, which can include one that is not physically or electronically integrated, a large part of an organization’s success likely will depend on the comprehensiveness of such things as its EHR implementation, the integration of ancillary systems, and adoption of data standards and appropriate reporting metrics, including reporting of quality of care.

**Patient-Centered Medical Home**

Another model of care is the patient-centered medical home (PCMH). The premise of PCMH is to provide comprehensive primary care throughout the lives of patients by establishing partnerships between providers who are involved in patients’ care delivery.

In this model, one provider coordinates the care of a given patient and can be

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<th>Inpatient Hospital</th>
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<td>Inpatient Rehabilitation</td>
<td>End-Stage Renal Disease</td>
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<td>Inpatient Psychiatric</td>
<td>Critical Access Hospital Outpatient</td>
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<td>Long-Term Care</td>
<td>Rural Health Clinic</td>
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<td>Skilled Nursing Inpatient</td>
<td>Federally Qualified Health Center</td>
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<td>Skilled Nursing Outpatient</td>
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Source: Centers for Medicare & Medicaid Services — National Meeting (10/29/2011)
viewed as the patient's medical home. With this structure in place, each patient has a personal physician who not only provides first contact but coordinates continuous and comprehensive care through collaboration among physician-led teams. This serves to align appropriate and enhanced patient care at every stage of a person's life and ensures quality and safety.

PPACA provides provisions for creation of a program to provide grants for training programs related to PCMH (Sec. 5301) and for establishment of community-based, interdisciplinary, interprofessional (i.e., medical specialists, nurses, pharmacists, and others) health teams that support development of medical homes. These health teams must support "safe and high-quality care through evidence-informed medicine, appropriate use of health information technology, and continuous quality improvements" (Sec. 3502).

As with ACOs, PCMHs rely heavily on data, data standards, and reporting metrics from EHRs to be successful. Additionally, as mentioned earlier, the ability to perform these functions will affect HITECH incentive payments and future reimbursement levels.

**Medicare and Medicaid**

Although not necessarily a new care model, CMS is significantly leveraging the implementation and convergence of HIT, ICD-10, and 5010 to enhance its programs as well. Starting on January 1, 2012, CMS will be requiring full encounter data submission through the new HIPAA standard 5010 transaction in order to measure health care utilization in Medicare Advantage (MA) organizations, calibrate MA-specific risk adjustment models, and calculate disproportionate share hospital (DSH) payments.

According to CMS, the data collection standard changes from five data elements to *all* data elements of the HIPAA standard 5010, and timing of required data submission changes from quarterly to monthly. Further, the type of data that will be collected is comprehensive and will be submitted for all types of service, including those seen in Figure 1.

**Health Information Exchange**

Perhaps one of the most significant HIT concepts being driven by the federal government through HITECH is the HIE. Central to nearly all new care models and health care payment reform is the exchange of clinical data between providers and payers in support of patient care. This could involve the exchange of a discharge summary between two different facilities or the exchange of patient history between a primary care physician and a consulting specialist.

These types of exchanges are the cornerstones of an HIE. As provided for through HITECH, HIE policies, implementation funds, and governance structures are supported by federal initiatives and developed and implemented by the state. Despite the challenges that many state and local governments are working to overcome — funding, adoption, legislative barriers, privacy and security, and others — some local communities are finding success in public-private partnerships. One such partnership is the Colorado Regional Health Information Organization (CORHIO).

CORHIO founded its community outreach and education program in 2008 and is focused on improving health care quality for Colorado residents and facilitating a statewide HIE that will allow care communities to securely share patient information throughout the region. As it currently stands, CORHIO’s capabilities include the ability to send patient data from one hospital to all of the participating hospitals and more than 200 health care providers. Ultimately, CORHIO seeks to expand its HIE’s capacity and capabilities as well as continue to build community-based coalitions.1

Another innovative initiative is leveraging the capabilities of some of the most notable HIT organizations in the nation — Kaiser Permanente, Mayo Clinic, Intermountain Healthcare, Geisinger Health Systems, and the Group Health Cooperative, collectively the Care Con-
connectivity Consortium. In contrast to setting up a closed HIE for their use, this initiative's goal is to create a model that hospitals of any size, in any part of the country, with limited resources, can implement for themselves.²

Realizing the benefits of current federal support, organizations may decide to leverage HIEs to achieve the data exchange needed by its care model strategies. Clearly, the use of an HIE will involve more than connecting an EHR to an exchange; it also will require providers to engage with regional and statewide HIE discussions and implementations to establish clear understanding around HIE agreements, data structure, rules, regulations, and processes for its exchange and intended use.

Although HITECH establishes federal standards for EHRs, their implementation, and ongoing governance, HIEs introduce new data privacy and security demands. For better or worse, HITECH contains new privacy and security requirements for EHRs and information exchange. As indicated by the results of the National eHealth Collaborative's (NeHC's) first-ever stakeholder survey, privacy and security represented the biggest concern among stakeholders surveyed. Clearly, the successful adoption of HIEs will not occur without a high level of accountability and ongoing diligence to protect individuals' protected health information (PHI).

**TECHNICAL ARCHITECTURE**

All regulations and care models discussed thus far center on the integration and interoperability of data and applications across multiple providers and health care entities. As we gaze across the spectrum of health care reform and HIT adoption, we realize that despite the frenetic pace of play currently taking place at all levels of the health care industry, we truly are setting the stage for HIT convergence.

Given that all common efforts assume the existence of an EHR and a given organization's ability to integrate its internal clinical systems, and with the adoption of 5010 and ICD-10, we are working toward a universal data "highway" to support standardized data, which, when done properly, will allow all HIT systems to produce the reports and metrics that not only achieve meaningful use and maximum reimbursement today but start providing the nation's health care systems with the data and support it needs to move toward a data-driven model for patient care and business office operations.

With all that said, the importance of data quality from EHRs, HIEs, and other areas is pivotal to the successful implementation of payment reform alternatives and new models of care. These fundamental components are only as good as the data they contain. And logically, the data is only as good as how well it reflects the care provided and the manner in which it was delivered.

The strategic importance of data, commonly underappreciated, will only become more significant as we implement payment changes and shift our definitions of care delivery. For example, if payment is based on conformance to chronic disease protocol, the organization must have data that illustrates how well it conforms to that protocol.

The need to implement accountability of care, the expansion of technology from hospital-centric to cross-jurisdictional integrated systems, and the growing necessity to capture longitudinal data pertaining to a patient have all led to an increase in data complexity. Poor quality data will not only limit the usefulness of the applications we have discussed but will hinder financial analysis, performance measurements, quality measurements, and claims processing.

**FROM NOW TO THEN**

So are we in for chaos or convergence in our journey through health care reform? It would seem that we have a bit of both on our hands at the moment. Certainly, as we move through the remaining “incentive” years of HITECH and realize both of the looming 5010 and ICD-10 deadlines, there will be the all-too-familiar pain of doing something different. And, as with all revo-
solutions, we will have freed ourselves from the status quo and will have even done something symbolic to boot.

When the dust settles, however, the success of these endeavors will depend on the continued adoption and expansion of HIT functionalities that lead to more collaboration amongst the health care community, more interoperability amongst HIT systems, and more adoption of EHRs by the nation, as a whole. Systems that support payment reform and new models of care will need to be flexible and evolve in response to changes that are yet to come, as there is still much to be learned, and we are just getting started.

Endnotes:
1. Healthcare IT News (May 2011) — CORHIO surpasses initial HIE goal.
2. Healthcare IT News (May 2011) — New models for health IT.