

Employing Health Information Technology in the Real World to Transform Delivery

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The fiscal stress of the past decade has led to a growing interest in maximizing the value of the nation's healthcare spending. Accordingly, policy makers are seeking ways to transform healthcare delivery and payment to make care more efficient and effective.¹ The Patient Protection and Affordable Care Act of 2010 supports this transformation, which is especially critical for patients with diverse and complex healthcare needs. Prominent examples of transformation initiatives include patient-centered medical homes, accountable care organizations, and bundled payments based on episodes of care (such as, hospitalizations and post discharge care).

Research suggests that strong leadership and a supportive culture are critical to effective organizational transformation, but organizations pursuing change also need the infrastructure and tools to do so effectively.²⁻⁴ The Health Information Technology for Economic and Clinical Health (HITECH) provisions of the American Recovery and Reinvestment Act, which promote the use and exchange of health information in practices across the nation, were intended to help build some of that infrastructure.⁵ This analysis examines the link between health information technology (HIT) and healthcare transformation.

The analysis was funded by the Office of the National Coordinator for Health Information Technology (ONC) as one component of a global assessment of the HITECH Act. The analysis uses qualitative methods to gain practical insight into how policy makers and health system leaders view the connections between HIT and changing healthcare delivery. The main data source involves semi-structured telephone interviews conducted with leaders at 7 diverse health delivery systems and with 4 senior staff at HHS with delivery reform responsibilities in several US Department of Health and Human Services (HHS) agencies (Table). An analyst took detailed notes of each interview so that key themes could be identified. (Due to the fact that the number of interviews was small, we did not use formal coding, relying directly on the detailed notes to identify key themes.) We worked with ONC staff to identify diverse delivery systems engaged in change to interview. We also reviewed several recent reports and guides to delivery reform from an operational perspective; they were particularly valuable in identifying

particular functionalities associated with reform and where HIT can support them. From these sources we identified 5 general points for policy maker attention that seemed

Objectives: Strong leadership and a supportive culture are critical to effective organizational transformation, but organizations pursuing change also need the infrastructure and tools to do so effectively. As policy makers seek to transform healthcare systems—specifically the delivery of care—we explore the real-world connection between health information technology (HIT) and the transformation of care delivery.

Study Design and Methods: This study is based on interviews with diverse federal and health system leaders and federal officials. The work was funded by the Office of the National Coordinator for Health Information Technology as part of a global assessment of the Health Information Technology for Economic and Clinical Health Act.

Results: The functionalities supported by HIT are integral to creating the information flow required for innovations such as medical homes, accountable care organizations, and bundled payment. However, such functionalities require much more than the presence of electronic health records; the data must also be liquid, integrated into the work flow, and used for analysis. Even in advanced systems, it takes years to create HIT infrastructure. Building this infrastructure and transforming delivery simultaneously is difficult, although probably unavoidable, for most providers. Progress will likely be slow and will require creative strategies that take into account the real-world environment of organizations and communities.

Conclusions: While the rapid transformation of delivery and infrastructure is appealing, both types of change will take time and will progress unevenly across the nation. Policy makers serious about transforming the delivery of healthcare can benefit by recognizing these realities and developing practical strategies to deal with them over a relatively long period of time.

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Take-Away Points

Organizations pursuing change need the infrastructure and tools to do so. Health information technology (HIT) can be valuable to organizations seeking to change, although it is challenging to build HIT and transform delivery simultaneously. This article provides:

- Analysis of the information flow that delivery reform needs and HIT can provide.
- Examples of strategies used to develop IT infrastructure to support change in delivery by organizations at different stages of development.
- A note of caution on the speed with which both HIT and delivery reform can be developed nationwide.

to emerge from the evolving experience as reflected in interviews and the “grey literature.” We discuss each point below.

KEY POINTS

Information Flow Is Critical to Change in Healthcare Delivery

Delivery reform requires changes in processes of care. HIT is an important part of creating the infrastructure to make that happen. As one interviewee noted, “IT has been an enabler for us. Without it...we can’t align data to incentivize providers. Also, we can’t analyze opportunities for improvement.”

Although each transformation model varies in the changes it requires to the delivery process, each change needs a corresponding information flow to support it.⁶ A strong HIT system can help make sure relevant information is available where and when it is needed to support providers in transforming the way they deliver care. Patient-centered medical homes, for example, encourage practices to assume responsibility for the population they treat. Assuming this responsibility requires information that links patients to practices (empanelment) as well as ways to analyze data to identify and understand patient subgroups, monitor referrals and test results, create patient-specific educational materials and reminders, and develop action reports to guide appropriate care management.⁷ Practitioners need systems that allow them to “query and pull” laboratory tests, medication lists, and other data in real time. Such systems should allow the storage and exchange of information, communication between members of the care team, performance monitoring, and decision support for providers.⁸ Robust electronic health records (EHRs) can support such information flows and functionalities.⁹

More broad-based reform of delivery that builds on medical homes and neighborhoods to support accountable care organizations (ACOs), and bundled care models create financial incentives to encourage providers to take responsibility for the care of patients, regardless of where the patients seek care. Providers in ACOs have to be able to track patients wherever they obtain care. Tracking patients may necessitate capabilities such as cross-continuum medical management,

medical engagement, clinical information exchange, quality and performance reporting, predictive modeling and analytics, and administrative and financial management systems.¹⁰ These capabilities require an infrastructure that moves beyond “point of care” and “encounter-based” functionalities and supports more robust information exchanges across settings, as well as more

rigorous population-based analytics. With integrated systems, providers may be able to leverage internal systems to achieve these ends. Where such systems are not present (as in most of the country and some of our interviewees), providers will likely need new mechanisms for health information exchange that work across practices and settings and providers willing to use them.

HIT Involves More Than EHRs

To be useful, HIT needs to be viewed as more than EHRs. As one interviewee expressed it, “Data must be liquid, integrated into work flow, and used for analytics.” This requires practices to have an infrastructure that is sufficiently robust. For example, to judge the readiness of the infrastructure in practices seeking to join the Comprehensive Primary Care initiative, policy makers from the Centers for Medicare & Medicaid Services (CMS) examined their ability to meet the stage 1 “meaningful use” requirements under HITECH. The agency saw this as the best metric for assessing the integration of EHRs into the practices’ work flow. The Health Resources and Services Administration, likewise, generally expects that federally qualified health centers will become primary care medical homes and adopt EHRs. But agency officials say EHRs are the means, not the end, to work flow changes needed to support quality improvement.

Information exchange is particularly important to the accountable care and episode-based models because these models require the ability to pool data across providers and care settings. These pooled data are critical for managing population care, stratifying populations by need and risk, and monitoring costs and outcomes. ACOs require ways of linking data that go beyond the stage 1 “meaningful use” requirements to create additional means for information exchange. Providers participating in some form of information exchange in 2010 were more than twice as likely to participate in an ACO compared with those that were not sharing information.¹⁰ But such exchanges are still in their infancy in most markets, particularly outside of highly integrated settings that can rely heavily on information exchange based on their closely affiliated providers.

■ Table. Interviewees by Type

Executives From Innovating Delivery Organizations of Diverse Types

- Major national insurer, multiple lines of business
- Large integrated delivery system (Midwest)
- Regionally based IPA/Health Insuring Organization (Northeast)
- Statewide PCMH support organization for networks (Southeast)
- Physician group IPA (ACO Pioneer, South Central)
- Small physician practice (Medicare shared savings program, advance payment) (South)
- Large integrated delivery system with Beacon grant to work in Community (Northeast)

HHS Senior Program Staff With Delivery Reform Responsibilities

- Center for Medicare & Medicaid Innovation
- Health Services and Resources Administration
- Office of National Coordinator for HIT

ACO indicates accountable care organization; HHS, US Department of Health and Human Services; HIT, health information technology; IPA, independent practice association; PCMH, patient-centered medical home.

Building Infrastructure Takes Time

In an ideal world, one would have time to create infrastructure before needing to employ it. But without a strong push from policy makers to transform care, interest in and support for building such infrastructure may be lacking. Regardless, policy makers have determined that there is not time to wait. The resulting tension between ideals and reality creates complications, but it is hard to see how such tensions can be avoided.

Implementing major system change takes time. The staff of one large physician-owned system we spoke with said they began integrating their clinical systems in 1999 and adopted an Epic-based EHR system in 2002. More than 10 years later, ambulatory and hospital data are now integrated, which means they can collect and align data to analyze opportunities to introduce process improvements in care. Executives of the system say that they find the inclusion of clinical data adds richness, a description absent from claims that are more aggregated and focused on procedures versus care involved in outcomes.

Still, it took this premier system years to evolve to where it is now. The staff said starting from scratch would have doubled their work, requiring workarounds that would have to be replaced later. But that is the situation in which most providers now find themselves, even if they are at the forefront of change. For example, case studies of 4 ACOs participating in a pilot supported by Brookings-Dartmouth revealed that none had full EHR operability when studied.¹¹ Investment in HIT and care management capabilities were among the factors that helped them address this challenge.

Providers Should Build on Their Current Infrastructure

Providers have found that they need to assess their starting point and build from there in ways that are strategic and fit

their priorities. The path forward will not be the same for everyone. For example, one regional organization we interviewed is composed of many independent practices. The staff said they were a “typical independent practice association” focused on payment discounts in 2000 when they decided to shift their focus to quality improvement. They studied integrated systems like Kaiser and Geisinger to identify key factors driving their success. They identified leadership and infrastructure as vital and tried to introduce these features in ways appropriate to their nonintegrated system. To enhance leadership, they created a new organization to serve as an executive committee. To build infrastructure, they created a health information system provider to help their physicians adopt EHRs.

Most of their physicians are now using EHRs, they say, with e-prescribing and good documentation at the point of care. This success has allowed staff to take the next step, which is to focus on information support for integrated care transitions, enhancing the exchange of health information through ONC’s public DIRECT specifications. Their goals are 1) to reduce from 50% to 0% the patients who receive care after a hospitalization without appropriate information available, and 2) to support comprehensive reconciliation of medical records by the care manager at discharge to prevent readmissions. To help them achieve those goals, they created specifications their EHR vendors were required to use to support the changes necessary for information flow. They are also using billing data to analyze costs. They say stage 1 “meaningful use” requirements drove vendors to improve their clinical care systems, and they hope stage 2 will also motivate vendors to create common interfaces to better support the exchange of information.

In another community with many independent providers and a history of supporting primary care at the local level, the initial focus for building infrastructure began with the need

to enhance support for primary care in Medicaid. A single statewide organization was created to provide real-time data in order to drive performance through analytics, using a combination of claims and clinical data shared by providers. The organization serves as a “neutral broker” that providers trust and use to support various regional reforms. As in the previous example, the organization is beginning to focus on care transitions, serving as a central resource of real-time admissions data from hospitals that are then shared with associated practices. This common platform has been valuable in creating economies of scale and provider trust. However, there are new tensions as more competitive ACO models emerge, creating concern that support for community-based (vs system-based) information sharing will erode.

In yet another example, an organization sponsoring capitated managed care used the infrastructure it had developed to work with its providers and others to start a CMS approved “Pioneer ACO” serving fee-for-service Medicare patients. The organization requires independent practices that wish to be paid as preferred providers to access data in the warehouse for 80% of their patients. If the practice accepts the free EHRs, they must contribute data to the warehouse. Hospitals participate because physicians expect them to be connected, and the hospitals want their business.

This organization says data analytics are its lifeblood, with a “sweet spot” that emerges from combining claims and clinical data. The organization says that HITeCH legitimized its efforts around HIT, although it will not be sufficient to “get people to do what they don’t want to do.” Although the staff made their system work, they hoped that provider support would grow for a community-based health information exchange that would serve as a public “middleware” to move data and lessen the burden on their organization to do so alone.

Progress Comes in Small Steps

In many parts of the United States, delivery systems are highly fragmented and slow to change. In such communities, both HIT and delivery reform will progress incrementally. As part of the HITeCH Beacon program, for example, one large integrated delivery system we interviewed is working with community-based independent providers to better coordinate care using virtual care teams. Participants were able to agree on some core evidence-based care processes for congestive heart failure and chronic obstructive pulmonary disease. Each practice provides the Beacon grantee with a flat-file data set similar to the one they create for billing. The files flow into a warehouse, which generates alerts and performance reports on a standard dashboard that even providers without EHRs can use. The delivery system staffers believe they are improv-

ing the processes of care, even as they worry about whether additional resources will be there to support future progress.

IMPLICATIONS

Although rapid change may be appealing, the reality is that the transformation of delivery systems—and the development of infrastructure to support them—will take substantial time and will progress unevenly across the nation.

This has implications for the strategy payers use to encourage change. For example, a major national health insurance company we interviewed varies its strategy to accommodate the current status of the delivery systems with which it contracts. Its general goal is to shift from “fee-for-service” to “fee-for-value” because it believes the best care and cost controls come from thoughtful, mature providers with solid clinical tools and analytical intelligence, supported by robust EHRs and evidence-based protocols. To facilitate this shift, the company is using diverse payment and support strategies that work in markets with different types of leadership and infrastructure. It is reserving its most intensive work for a few practices or systems that already have advanced HIT. However, that leaves the issue of how best to move the entire healthcare system forward, especially segments that are less advanced users of HIT or less committed to delivery reform.

If policy makers are serious about transforming the delivery of healthcare across the nation, they need to recognize these realities and develop practical strategies to deal with them over a relatively long time horizon.

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