

# **A Shared Roadmap and Vision for Health IT**

John Halamka, Mark Leavitt, John Tooker

## **Introduction**

Today's economic crisis has highlighted our need for breakthrough improvements in the quality, safety and efficiency of healthcare. The nation's business competitiveness is threatened by growing healthcare costs, while at the same time our citizens risk losing access to care because of unemployment and the decreasing affordability of coverage. Meanwhile, the quality variations and safety shortfalls in our care system have been well documented.

Health IT is not a panacea for all of these challenges, but it is a critical first step toward addressing many of them. Before we can restructure payment systems to reward quality, we need reliable, near real time data on outcomes. Before we can reward teamwork and collaboration that re-integrates care, we need applications that let clinicians communicate patient information instantly and securely. And in order to reverse the growing burden of chronic diseases, we need online connections that engage individuals in their care and motivate them to make healthier lifestyle choices.

Our current, paper-based health information process wastes hundreds of billions of dollars annually. Transforming this into a streamlined 21<sup>st</sup> century electronic system will require many components: a conversion to interoperable electronic health records (EHRs) at healthcare facilities, the adoption of online personal health records (PHRs) for individuals, health information organizations that support and connect these systems to allow information sharing, and finally a national health information network that allows instantaneous secure access – always with appropriate consent from the individual -- wherever and whenever their records are needed.

## **Where we stand today**

There are hundreds of stakeholders in the development and adoption of interoperable healthcare information technology including consumers, providers, patients, payers, employers, researchers, government agencies, vendors, and standards development organizations. Over the past 20 years, these groups have worked together informally, but until recently there has not been a process to create a single list of priorities or a coordinated project plan. This fragmented approach in many ways mimics the fragmented healthcare delivery system within the US.

In 2004, the Office of the National Coordinator (ONC) within the Department of Health and Human Services (HHS) was established and charged with creating a single strategic plan for all these stakeholders to work together to harmonize healthcare data standards, create architectures for data exchange, document privacy principles, and certify compliant systems which adhere to best practices. Under ONC/HHS guidance, several groups have successfully implemented this work, leading to demonstrable progress in integrating some aspects of healthcare delivery.

An HHS advisory committee, the American Health Information Community (AHIC), prioritized needs and developed harmonized health IT standards for the country based on multi-stakeholder collaboration around a tool known as a "use case." It produced 3 use cases in 2006, 4 use cases in 2007, 6 use cases in 2008, and a prioritized list of standards gaps to fill in 2009. The successor to AHIC, the National

eHealth Collaborative, is a voluntary consensus standards body that extends the strengths of AHIC by enabling broader private sector and consumer representation. It will continue this work by developing and prioritizing initiatives to solve real implementation challenges in the field.

The Healthcare Information Technology Standards Panel (HITSP), a voluntary group of standards experts, received 13 use cases plus a privacy/security standardization request from AHIC. All of these use cases led to unambiguous interoperability specifications that were delivered within 9 months of receiving the request. The standards were chosen by consensus in an open transparent manner with many controversies resolved along the way. At this point, standards for personal health record exchange, laboratories, biosurveillance, medications, quality, emergency first responder access to clinical summary data, home health device monitoring, immunizations, genomic data, hospital to hospital transfers of records including imaging data, public health reporting and patient-provider secure messaging are finished. Consequently, standards are no longer a rate limiting step to data exchange in these cases.

The Certification Commission for Healthcare Information Technology (CCHIT) has certified over 160 electronic health record products based on detailed functional and standards conformance criteria. It has achieved broad industry recognition as the place to develop a roadmap for the features and interoperability requirements to include in the yearly revisions of health care IT products.

Using the harmonized standards, the Nationwide Health Information Network, a pilot initiative of HHS, demonstrated a successful architecture for pushing data between stakeholders, for query/response to pull data, and appropriate security protections. Many of these pilots have become production systems in their localities.

Working together, thousands of volunteer hours in these organizations have led to policy and technology frameworks that have been embraced by several live healthcare exchanges including those at the Social Security Administration, eHealth Connecticut, Keystone Health Information Exchange, Boston Medical Center Ambulatory EMR, Vermont Information Technology Leaders, Inc. (VITL), MA-Share (a statewide data exchange), and Beth Israel Deaconess Medical Center.

### **New Framework for Collaboration**

While much has been accomplished, much remains to be done to accelerate adoption and interoperability of health IT. After an 18 month process involving hundreds of stakeholders, the National eHealth Collaborative (NeHC) was created to carry forward this work. NeHC is structured as a voluntary consensus standards body to bring together consumers, the public health community, health care professionals, government, and industry to accelerate health IT adoption by providing a credible and transparent forum to help establish priorities and leverage the value of both the public and private sectors. As a public private partnership, it is able to reach broadly into all sectors of health care, including health professionals, government agencies, health systems, academic medicine, patient advocates, major employers, non-profits, technology providers, and others.

This balancing of interests and expertise is critical to accelerating adoption and would be difficult to replicate in a purely public or purely private sector setting. Past competing interests and priorities within each sector have contributed to the historically low creation and adoption of compatible enabling technologies. By expanding the role of the private sector beyond what was available through a public-driven forum, NeHC can leverage industry resources and best practices—at the same time, assured public sector and consumer participation engenders activities that are transparent and supportive of high-quality, patient-centric coordinated care. The National eHealth Collaborative has refined and expanded

the process for establishing priorities developed under AHIC. The National eHealth Collaborative's goals for the prioritization process are to:

- Identify **breakthrough strategies** to increase interoperability by prioritizing stakeholder-initiated value cases for national action
- Provide **broader stakeholder input** into which value cases and interoperability initiatives are pursued
- Place **more emphasis on the value proposition** of each proposed set of interoperability initiatives.

Building on experiences with use cases, NeHC has developed the "value case," a new tool for setting national priorities which describes the utility and projected benefits of an initiative addressing a specific obstacle to achieving interoperability. Value cases may focus on standards harmonization, but may also address other breakthrough strategies for driving interoperability, including model processes (such as a model of the "ideal" care coordination process); best practices (such as incorporation of ePrescribing into provider workflow or managing the communication of results out to the referring physician); and frameworks (such as a service oriented architecture for health information exchange). Each value case includes an assessment of the feasibility of implementing the proposed standard or other construct and the extent of stakeholder commitment required to ensure widespread adoption.

The processes and criteria to efficiently move the value case process forward begins with a national strategy and national call for submission of cases, both from government and the private sector. High level government participation plays a key role in guiding the value case process. As value cases are developed, NeHC will facilitate the appropriate action. If standards harmonization is required, HITSP will be consulted to develop use cases and recommend standards for adoption, or expert panels may be convened to address architectures, best practices, terminologies, or other issues. Once approved by the NeHC Board, outputs will be provided to CCHIT for potential incorporation into certification criteria and as a signal to developers for their product modifications.

## Roadmap

Given the resources of the proposed stimulus package, our country is poised for great success in healthcare IT. As a nation, we will work together to ensure every patient has a secure, interoperable electronic health record. But what does this mean for patient care?

- We will improve the quality of care by coordinating handoffs between providers. No longer will you be asked to fill out the clipboard with the basics of who you are, what medications you take and your existing medical conditions.
- Medications will be checked for interactions as they are prescribed. Caregivers will be electronically notified of critical values in lab results and important results on x-rays.
- Patients will be able to access their medical records electronically, communicate with their doctors, and use home monitoring devices to coordinate care without a visit to the doctor's office.
- Beyond these improvements in quality, safety, and convenience, the coordination of care will result in better value for our healthcare dollar by minimizing redundancy and waste.

## A Shared Roadmap and Vision for Health IT

The roadmap for standards harmonization, certification of healthcare IT products, and secure data sharing of medication, laboratory, and clinical summary information is clear. Completing this work is a journey and all our organizations, NeHC, HITSP and CCHIT, are unified to walk that road together.

The momentum created by the close collaboration of all these groups is based on trust, established working relationships and clearly defined roles/responsibilities. Together, they constitute a healthy ecosystem of organizations, each with clear accountability, transparency, and governance to ensure they are all aligned. We are committed to working together to meet the expectations of consumers and other healthcare stakeholders in the future.

### **Vision**

The past four years have seen significant accomplishments, despite the limited funding made available. Beyond the complex mechanics of setting up these activities, what is probably more important has been the development of engagement and trust from stakeholders throughout the health care sector, something that can not be rushed. With the increased funding available in the economic stimulus legislation, we will build on the momentum, trust, and leadership that has already been painstakingly established.

Our vision is one of a 21st century health system in which all health information is electronic, delivered instantly and securely to individuals and their care providers when needed, and capable of analysis for constant improvement and research. With better information upon which to base decisions, the challenging process of health reform can successfully proceed – measuring quality, rewarding value, engaging individuals -- and lead the way to better health for all Americans.

*John D. Halamka, MD, MS, is Chief Information Officer of Beth Israel Deaconess Medical Center, Chief Information Officer of Harvard Medical School, Chairman of the New England Health Electronic Data Interchange Network (NEHEN), CEO of MA-SHARE (the Regional Health Information Organization), Chair of the US Healthcare Information Technology Standards Panel (HITSP), and a practicing Emergency Physician.*

*Mark Leavitt, MD, PhD, is Chair of the Certification Commission for Healthcare Information Technology (CCHIT).*

*John Tooker, MD, MBA, FACP is the Executive Vice President and Chief Executive Officer of the American College of Physicians (ACP), Chair of the board for the National Committee for Quality Assurance (NCQA), and Chair of the board of the National eHealth Collaborative (NeHC).*