Information Infrastructure Promises Better Healthcare, Lower Costs

Save to myBoK

by Janet M. Marchibroda and Ticia Gerber

What forces have propelled the need for a national health information infrastructure (NHII) into the spotlight? In the article, take a closer look at the origins of the NHII, the benefits it will yield, and the initiatives providing the strongest support.

The healthcare system in the US has no shortage of challenges these days, thanks to the vexing issues of rising costs, patient safety and healthcare quality challenges, and increased consumer demand for control over medical choices. In their search for new and effective solutions to these long-standing problems, government and private sector leaders are increasingly turning their attention to creating a national health information infrastructure (NHII) to standardize clinical data and ensure interoperability in health information technology. The absence of interconnectivity, clinical data standardization, and interoperability in the healthcare system has caused:

- healthcare that is not informed by the longitudinal, cross-provider experience of the patient
- patients lacking a comprehensive picture of their healthcare delivery experience
- public health information deficiencies in terms of identifying, tracking, and responding to health threats
- healthcare researchers lacking ready access to data that is required to perform research to define practices that result in better outcomes
- health systems and hospitals struggling with multiple systems that do not “talk to each other”
- employers, payers, and ultimately consumers bearing the cost of inefficiencies and redundant investments across providers that are designed to deal with interoperability issues, as well as the medical errors as a result of incomplete patient health information

This article examines the recent steps toward the NHII and its significant, long-term effect on the health system as a whole, including the practice of HIM.

NCVHS Gets the Ball Rolling

The NHII was first mentioned by the Institute of Medicine (IOM) in a report on computer-based patient records in 1991. The NHII gained greater awareness in November 2001 when the National Committee on Vital and Health Statistics (NCVHS) published “Information for Health: A Strategy for Building the National Health Information Infrastructure (NHII).”[1]

The report was the culmination of 18 months of hearings and consultations with leading healthcare, information technology, and consumer experts. “Information for Health” defines the NHII as “a comprehensive, knowledge-based system capable of providing information to all who need it to make sound decisions about health....NHII includes not just technologies but more importantly, values, standards, systems, and applications that support all facets of individual health, healthcare, and public health. It encompasses tools such as clinical practice guidelines, educational resources for the public and health professionals, geographic information systems, health statistics at all levels of government, and many forms of communication among users.”

NCVHS categorizes this new information highway into three distinct dimensions: personal health, healthcare providers, and population health. The committee also points to the need for federal leadership, calling it “is the most important missing ingredient which could accelerate and coordinate the progress on the NHII.” This leadership could include a new senior NHII position at US Department of Health and Human Services (HHS) with sufficient resources to coordinate all public and private NHII efforts.

National informatics, data, and health technology experts have struggled for years to identify workable solutions to issues surrounding the NHII, but consensus and funding to address the problem have been elusive. The NCVHS report reenergized infrastructure champions and served as an important impetus to renewed standardization and interoperability efforts. Federal NHII funding efforts finally have momentum. The committee's work has been strengthened further by subsequent administration and congressional efforts in 2002 to address the interoperability, clinical data standardization, and electronic infrastructure challenges inherent in our healthcare system.

Public, Private Sector Alliance Lays Foundation

The NCVHS report notes that "the federal government has a key role to play in these (NHII) developments but it can not do so alone. A dynamic, nationwide, collaborative venture is needed for this purpose...the developmental process must engage a broad range of stakeholders." Clamor for both public and private sector efforts to create an interconnected, interoperable electronic health information infrastructure grew louder following last year's anthrax attacks, when the need for enhanced public health surveillance and response became more visible and immediate.

To address this need, the Public-Private Sector Collaboration for Public Health was formed by the eHealth Initiative in November 2001. The collaboration includes members from the Centers for Disease Control and Prevention, the Centers for Medicare & Medicaid Services, public health partners at the state and local level, providers, national standards organizations, and healthcare IT suppliers that represent 80 percent of America's healthcare systems and manage more than 25 percent of the nation's pharmacy information. AHIMA has been an active partner in this collaboration.

The goal of this partnership is the development and implementation of strategies to rapidly, securely, and effectively transmit important public health data from healthcare providers and other key healthcare data sources to public health agencies in electronic formats using clinical data standards. These data include lab results, microbiology results, orders, and chief complaint information. Further, the collaboration aims to leverage current healthcare information systems and other existing electronic healthcare data sources to enhance public health surveillance processes like collection, organization, analysis, and dissemination.

This work represents significant progress in the improvement of our nation's public health surveillance capability and lays the foundation for an interconnected electronic health information infrastructure. The collaboration has been successful because of its focus on specific, well-defined, highly visible data needs, dynamic project leadership, and the involvement of stakeholders from every level of data collection and analysis. Project participants have produced numerous resources helpful to federal, state, and local public health officials, including new conceptual frameworks for results reporting and implementation guides for laboratory-based reporting of public health information.

Non-profit "Connections" Support Standards, Interoperability

The Markle Foundation, a private, non-profit national philanthropy that works to accelerate the use of communications media and information technology to address critical public needs, used the collaboration as a springboard for a broader nine-month initiative called Connecting for Health...a Public-Private Collaborative. Launched in June 2002, this project aims to clear the way for an interconnected, electronic health information infrastructure. The goals of Connecting for Health are:

- accelerating the rate of adoption of clinical data standards throughout the nation's healthcare system to facilitate interoperability
- identifying practical strategies and solutions for developing an interconnected electronic infrastructure that will ensure the secure and private transmission of medical information and support the continuity of personal health information across plans and providers
- actively working to understand what consumers will need and expect from an interconnected health information system and identifying key steps for meeting their needs[2]

Project leadership and participants, including members and staff of the eHealth Initiative and its foundation, represent leaders in the healthcare and technology fields. Stakeholders, including providers, third-party payers, employers, federal and state government organizations, healthcare information technology organizations, academic and research institutions, national standards groups, and consumer groups, participate in the project's steering committee and its three working groups: data standardization, privacy and security, and personal health.

This clinical data standardization and interoperability project holds tremendous promise for every stakeholder in healthcare. For example:

- health systems can reduce technical costs due to lack of interoperability and reporting burden and improve the quality of care delivered
- practicing clinicians can enhance clinical decision-making by obtaining better access to information across the continuum of care
- patients will benefit from better quality care and outcomes, a reduction in errors, and an ability to more fully engage in addressing their own healthcare needs
- payers can reap rewards by decreasing costs and by improving their ability to evaluate and manage effectiveness and quality of care
- quality improvement and accrediting organizations can reduce their data collection costs and improve the ability to measure quality
- public health agencies can enhance their ability to identify, analyze, and respond to public-health related challenges
- researchers can trim down the cost of collecting the data and boost research capabilities[3]

Leaders in the Connecting for Health project are determined to make this vision a reality in an environment that is ripe for change. Project partners want to work collaboratively with other related initiatives and focus on practical solutions and tangible results.

The IOM has also put a significant spotlight on this issue through its Committee on Guidance for Patient Safety Standards, launched in 2002, and the release of its November 2002 report to the secretary of HHS, “Fostering Rapid Advances in Healthcare: Learning from Systems Demonstrations.” The report calls for demonstration projects in information and communications technology infrastructure in a state, community, or a multi-state region that is accessible to all providers and all consumers.[4]

Congress, Administration Actions Signal Change

Clinical data standardization and the interoperability of healthcare technology were central to the 2002 congressional and administration healthcare agenda. Key legislators and regulators increasingly believe that addressing these issues will offer new solutions in a healthcare system burdened by the challenges of an increasingly complex medical practice and knowledge management, quality of care and safety shortfalls, looming public health threats, and rising patient and consumer demand.

Rep. Nancy Johnson (R-CT), chair of the House Ways and Means Health Subcommittee, launched the NHII discussion early in the 2002 congressional session with the announcement of her desire to pass and sign into law bipartisan clinical data standardization and interoperability this year. “We want to be ahead of the curve on this,” Johnson said.[5] Proposals addressing health information technology standards and interoperability represent “phase II in bringing the health system into the 21st century,” Johnson noted. “HIPAA was about standardizing data. This proposal is about using data to improve quality. It is the next stage.” And at the House Ways and Means Committee Hearing on Legislation to Reduce Medical Errors, she argued, “We can not afford to establish broad information systems that do not talk to each other. Patient safety is too important.”[6]

Six key pieces of legislation were introduced in the House and Senate in 2002 related to the funding and infrastructure needed to support safer, higher-quality, cost-effective healthcare through clinical data standards adoption, interoperability, and an electronic health information infrastructure. The bills are:

- The Patient Safety Improvement Act (HR 4889). Key sponsors: Reps. Bill Thomas (R-CA) and Nancy Johnson (R-CT)
- The Patient Safety Improvement and Medical Injury Reduction Act (S 3029). Key sponsors: Sens. Bill Frist (R-TN), Judd Gregg (R-NH), Jim Jeffords (I-VT), and John Breaux (D-LA)
- The Patient Safety and Quality Improvement Act (S 2590). Key sponsor: Sen. Ted Kennedy (D-MA)
- Medicare Modernization and Prescription Drug Act of 2002 (HR 4954). Key sponsors: Reps. Bill Thomas (R-CA), Nancy Johnson, Billy Tauzin (R-LA), and Michael Bilirakis (R-FL)
- Medicare Reform Act (S 1135). Key sponsors: Sens. Bob Graham (D-FL) and Jay Rockefeller (D-VA)
- The Efficiency in Health Care (eHealth) Act (S 2638). Key sponsor: Sen. Ted Kennedy (D-MA)

Only two of these bills progressed in the legislative process this year, and neither was signed into law. (For more information on these bills, see "Despite Disappointments, Bills Generate Interest,"below.)

Any proposal that wins congressional approval will have to be compatible with the Bush administration's own Consolidated Health Informatics Initiative (CHI). Managed by HHS, this project will "provide the basis for a simplified and unified system for sharing and revising medical information among government agencies and their private healthcare providers and insurers...and enable a single mechanism for making records accessible."[7] CHI includes approximately 20 partnering federal agencies and is one of 24 projects launched as part of the president's E-Government initiative, which aims to improve government efficiency, effectiveness, and responsiveness to citizens, while making it easier for citizens to obtain services and interact with the federal government.

The Promise of Progress

Taken collectively, the actions by interoperability and clinical data standardization collaboratives, Congress, the administration, and private sector stakeholders willing to facilitate these broad changes represent significant steps toward an NHII. With such diverse and widespread support, this effort is rapidly gaining momentum and holds tremendous promise to improve America's beleaguered health system.

Notes

1. National Committee on Vital and Health Statistics. "Information for Health: A Strategy for Building the National Health Information Infrastructure." Washington, DC. November 15, 2001. Available online at www.ncvhs.hhs.gov/nhiilayo.pdf.

2. Markle Foundation. "Overview of Connecting for Health." June 2002. Available online at www.connectingforhealth.org.

3. Markle Foundation. "Connecting for Health…Data Standards, Implementation, and Dissemination Strategy." October 2002.

4. The Institute of Medicine. "Fostering Rapid Advances in Healthcare: Learning from Systems Demonstrations." Washington, DC, November 19, 2002.

5. "The Internet Check-Up: Funding a New Wave of Medical Innovation." eHealth Initiative News 1, no. 3 (2002). Available online at www.ehealthinitiative.org.

6. Johnson, Nancy. Opening Statement at House Ways and Means Health Subcommittee Hearing on Legislation to Reduce Medical Errors. Washington, DC. September 10, 2002. Available online at http://waysandmeans.house.gov/ health/107cong/9-10-02/9-10john.htm.

7. Office of Management and Budget. "Implementing the President's Management Agenda for E-Government; E-Government Strategy." Washington, DC. February 27, 2001. Available online at www.whitehouse.gov/omb/inforeg/egovstrategy.pdf.

Janet Marchibroda *(janet.marchibroda@ehealthinitiative.org) is the chief executive officer of the Washington, DC-based eHealth Initiative, a non-profit consortium with more than 100 leading organizations whose mission is to drive improvement in the quality, safety, and cost-effectiveness of healthcare through information technology.* ***Ticia Gerber*** *is director of public affairs at the eHealth Initiative.*

Despite Disappointments, Bills Generate Interest

While the unveiling of the six pieces of legislation related to standards, interoperability, and the NHII coupled with multiple congressional hearings brought new visibility to these issues, only two of these bills progressed in the legislative process this year. Neither was signed into law. HR 4954, the Medicare proposal, was passed in the House after committee approval by a vote of 221-208 on June 27. This bill includes a number of clinical data standardization and interoperability provision such as:

- requiring that a prescription drug program sponsor shall have in place, with respect to outpatient drugs, an electronic prescription drug program by 2006

- providing for national electronic prescription drug standards developed by the Centers for Medicare & Medicaid administrator in consultation with a new advisory task force
- requiring advisory task force recommendations and insight by January 2004 on a broad range of issues including computerized prescribing software, hardware, and common platform landscape across care settings

S 1135, a Medicare reform bill which failed on the Senate floor, also contained these provisions.

The second active bill, an amended version of the Patient Safety Improvement Act (HR 4889), was approved by the House Ways and Means Committee and the House Energy and Commerce Committee in late September 2002. HR 4889 is notable because it instructs the HHS secretary to develop or adopt voluntary, national standards for promoting the interoperability of healthcare information technology systems across all settings in a maximum time frame of two years after the bill's enactment. In doing so, the HHS Secretary is to consider the recommendations of the NCVHS and a new 17-member Medical Information Technology Advisory Board (MITAB) as well as representatives of the health information technology industry and the provider community who are involved with the development of interoperability standards. The MITAB is to be composed of key public and private sector health and technology stakeholders. The goal of the new voluntary, national interoperability standards is to encourage greater health system efficiency and better medical care and fostering the eventual creation of an NHII.

Staff from the House Ways and Means and House Energy and Commerce Committees are still in talks to reconcile their differing versions of HR 4889. These issues will likely remain unresolved, leaving interoperability and clinical data standardization legislation to be debated in the 108th Congress (2003-2004).

AHIMA Takes a Stand on the NHII

AHIMA's position statement in support of the NHII was published in the September 2002 *Journal of AHIMA* (vol. 73, no. 8) and is also available online at www.ahima.org/infocenter/.

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