Update on the NHIN and RHIOs

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by Donald T. Mon, PhD

In 2001 the National Committee on Vital and Health Statistics (NCVHS) began to explore the feasibility of a national health information infrastructure (NHII). Through an NHII, health information can be exchanged electronically, providing a major health information technology solution for increasing patient safety, reducing medical errors, increasing efficiency and effectiveness, and containing costs. Then, as now, the NHII was simply a concept. There was no comprehensive infrastructure, no financial means or incentives, and no clear set of products and standards in place to accomplish it. But things were just beginning. NCVHS's focus on the NHII launched an industrywide discussion on how to exchange health information electronically in a secure, standard fashion.

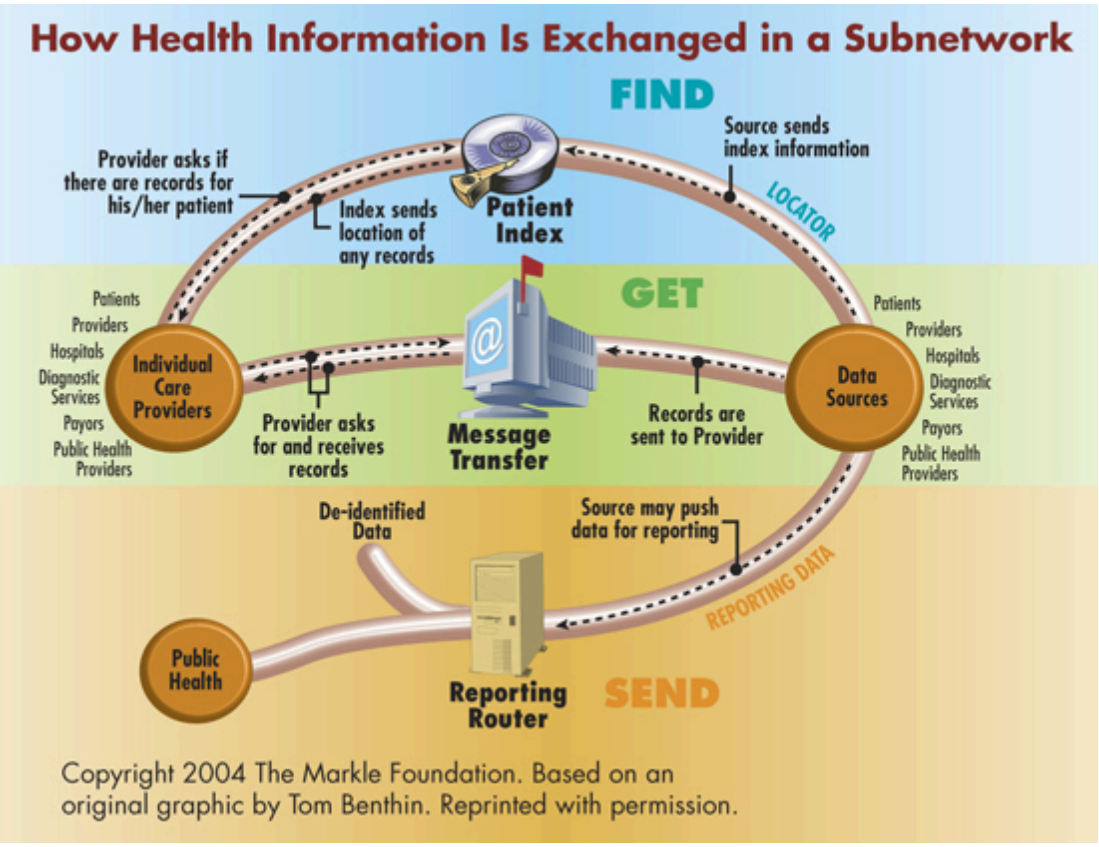
As expected, the discussion generated divergent views on how to build the system. Some preferred a "big bang" approach, which called for a mix of large-scale measures, among them a single network for the entire nation, massive amounts of federal funding, and a centralized database of medical records. Others offered an incremental approach, where local health information infrastructures (LHIIs) could be built as the need within communities arose. A set of connected LHIIs would eventually evolve into the NHII. Discussions became somewhat controversial because some feared the LHII approach lacked adherence to standards and would result in a Tower of Babel rather than a unified NHII. At times, these divergent views appeared to be at loggerheads, with no clear process for resolving their differences.

Enter NHIN and RHIOs

The goal of interconnecting networks really ramped up with President Bush's announcement that everyone should have an electronic health record within 10 years, the formation of the Office of the National Coordinator for Health Information Technology (ONCHIT), and the appointment of David Brailer, MD, PhD, as the national coordinator for HIT. Widespread adoption of electronic health records and health information exchange were among the goals put forth by Brailer in his report "The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care." But as previous discussions were bogged down in the LHII controversy, it was clear that new energy and enthusiasm, and even a new brand identity, for health information exchange were needed.

Whether intentionally or not, ONCHIT supplied that by replacing the term NHII with the term national health information network (NHIN). In addition, the term LHII was replaced by two component concepts: a health information exchange network that would be implemented by a regional health information organization (RHIO), a group of organizations exchanging health information within a geographic locale. These complementary concepts separated the technical and architectural issues of the network from the business issues associated with the RHIO.

Seeking a fair and systematic way to gather input from all stakeholders, ONCHIT released a request for information on how best to build RHIOs and the NHIN. Facilitated by Connecting for Health, AHIMA filed a collaborative response with the American Medical Informatics Association, the American National Standards Institute-Health Informatics Standards Board, the Center for Information Technology Leadership, eHealth Initiative, the Healthcare Information and Management Systems Society (HIMSS), the HIMSS EHR Vendors Association, Health Level Seven, Integrating the Healthcare Enterprise, Internet2, the Liberty Alliance, and the National Alliance for Health Information Technology. Given the stakeholders represented by these organizations, the response was one of the most formidable to be filed. ONCHIT anticipates releasing a summary of the more than 500 responses it received by midyear.



Distinguishing Recommendations from the Collaborative RFI Response

The purpose of a RHIO, and hence the NHIN, is to support access of near real-time information for routine and emergency care, monitor disease outbreaks and bioweapon attacks, and research and quality improvement. It is important to note that based on this intent, health information exchange need not be confined to a specific geographic region or by state lines. For example, some integrated delivery networks (e.g., the Veterans Affairs and for-profit hospital companies) and insurance companies span more than one region. Monitoring disease outbreaks, research, and quality improvement activities go well beyond the boundaries of a region. In addition, healthcare in some locales crosses over state lines.

Any group of entities should then be able to organize around whatever valid health information exchange purpose they have and use the NHIN-RHIO infrastructure, not just those providing direct care within a region. A network implemented by a RHIO might be an apt description for the latter, but a more generic description that de-emphasizes geography is needed for the former. For lack of a better word, “subnetwork” was the term used in the joint RFI response. In this context, a group of organizations with a valid reason for exchanging health information, throughout the country if need be, could build a subnetwork and link it to the NHIN.

To build a subnetwork cost effectively, organizations should not be required to rip out existing local network infrastructure and replace it with a new one. In addition, existing standards and infrastructure, such as the Internet (or its next generation, Internet2), should be leveraged. To make it easier to design, develop, and implement a subnetwork, as well as form a RHIO or other information exchange organization, a common framework would be needed. This framework would consist of template policies and business principles that could help an information exchange organization ramp up quickly. It would also include a road map of technical standards, policies, procedures, and implementation guides to allow organizations to accelerate subnetwork implementation. The creation of a standards and policy entity was recommended to develop and disseminate these materials.

The diagram “How Health Information Is Exchanged in a Subnetwork” illustrates how health information would be exchanged in a subnetwork. Three characteristics of this architecture are important to note. First, the data stays at the institution that generated it. Second, health information is found throughout the subnetwork via a record locator service, which acts as a federated master patient index. Third, to find the right records, there must be a method to uniquely identify a patient, but that method does not require a unique identifier.

Health Information Exchange Requires HIM Practices

HIM skills are required in every step of the process. In fact, privacy, security, and confidentiality were deemed to be so essential they were incorporated into the subnetwork's design principles. For example, in the "find" stage, when a provider requests records on a particular patient and the index sends the location of any records, authentication, authorization, and other access-control methods must be implemented. The coordination of the master patient index at the enterprise level with the record locator service must be managed. Indeed, the very construction and maintenance of the record locator service is an HIM function.

Similarly, in the "get" stage, access control and release of information issues arise. In addition, data quality and data standards are extremely important—information exchange will be less valuable, and may in fact be even more troublesome, if the data sent to the requesting provider is not accurate or complete. Information exchange will also be more efficient when it is based on standard clinical terms and code sets.

Legal aspects of the electronic health record will play an enormous part in health information exchange. Many legal questions are emerging. What is the liability of an enterprise when it sends health information to a provider who stores it and later forwards it to another provider? How do we resolve access to health information issues when there are conflicting state laws?

Clearly, many HIM issues must be resolved to make health information exchange work accurately and efficiently. The movement to an electronic health information exchange environment is inevitable. This inevitability represents an excellent opportunity for HIM professionals to shape its preferred future and make the NHIN a success.

Reference

Office of the National Coordinator for Health Information Technology. "The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care." Available online at www.hhs.gov/healthit/documents/hitframework.pdf.

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