Virtual Record

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By Harris Frankel, MD, and Deb Bass

Nebraska HIE offers light solution for robust data exchange

Depending upon your perspective, NeHII, the Nebraska Health Information Initiative, may have a name that evokes a soft drink popular in the early 20th century, or it may induce images of cornstalks waving in the vast, sun-drenched fields of the Midwest. Whatever your perception, the success story of this collaborative, statewide network is anything but old-fashioned, and it is far from corny.

NeHII is a nonprofit Nebraska corporation formed by a diverse public and private stakeholder group. As a health information exchange (HIE), NeHII connects health information from disparate healthcare organizations and their independent IT systems into a single "virtual" record that can securely follow a patient throughout the healthcare continuum, helping healthcare professionals provide better and safer care. NeHII stakeholders share a mission, vision, and goals that explicitly state that the secure exchange of health information is essential for effective and timely clinical decision making.

NeHII was one of the first statewide HIEs, and in March 2009 it earned the distinction of being the first HIE launched with a fully operational set of features and functions, including reasonably priced electronic health records and e-prescribing solutions for providers who needed them.

But sitting squarely at the center of NeHII's value proposition is the virtual health record (VHR), the critical common denominator for the network's users. A dynamic, longitudinal view of all the data being supplied electronically by participating members, the VHR is a powerful instrument that makes formerly disconnected data an indispensable tool for patient care.

The Virtual Record

Using specially designed Web-based technology, physicians tap into clinical data from different sources, combining it into a temporary, virtual "record" of the patient's current health information. While logged in, physicians can perform functions within the HIE, such as sending messages to other physicians, and they can incorporate the information into their treatment plan or other documentation. After a physician has used the information, the virtual record vanishes from the screen and the data remain at their source locations, ready for the next query.

A common example of this type of technology in another industry is the online flight inquiry and reservation service used by airlines. At any given moment, a customer can use a single online service to tap into the most current flight information across multiple airlines. As with the VHR, once the customer has the information needed, he or she ends the session and the information is not stored locally.

The HIE features a master patient index that uses an internal unique identifier. A record locator service uses the internal identification number to perform real-time inquiries across the network, access and aggregate the information from disparate sources, and bring it into view for the physician.

At NeHII's launch, the VHR was able to provide physicians a dynamic view of clinical messaging, which is a complete picture of a patient's medical lab and x-ray results, transcription reports, medication history, allergy notification, insurance eligibility, and demographic data, all at the point of care. The VHR also allowed physicians and other healthcare providers to send results to other system users. But the key to the value and eventual success of the VHR was populating the HIE with enough data to make the records useful to busy physicians.

Clinical data can be provided to the HIE in multiple ways from a variety of sources. While some healthcare providers may not yet have electronic health record (EHR) technology that allows them to contribute data to the exchange, other providers do have functioning EHRs that are interoperable with the exchange and can contribute clinical data. Other data providers, such as independent labs, may provide a constant flow of lab results to the HIE from their electronic systems, while insurance payers provide current claims and eligibility data. Some systems provide data in batch format. Regardless of how the data are provided, bringing them together into the VHR increases its value exponentially as a tool for patient safety and clinical care.

The NeHII Model

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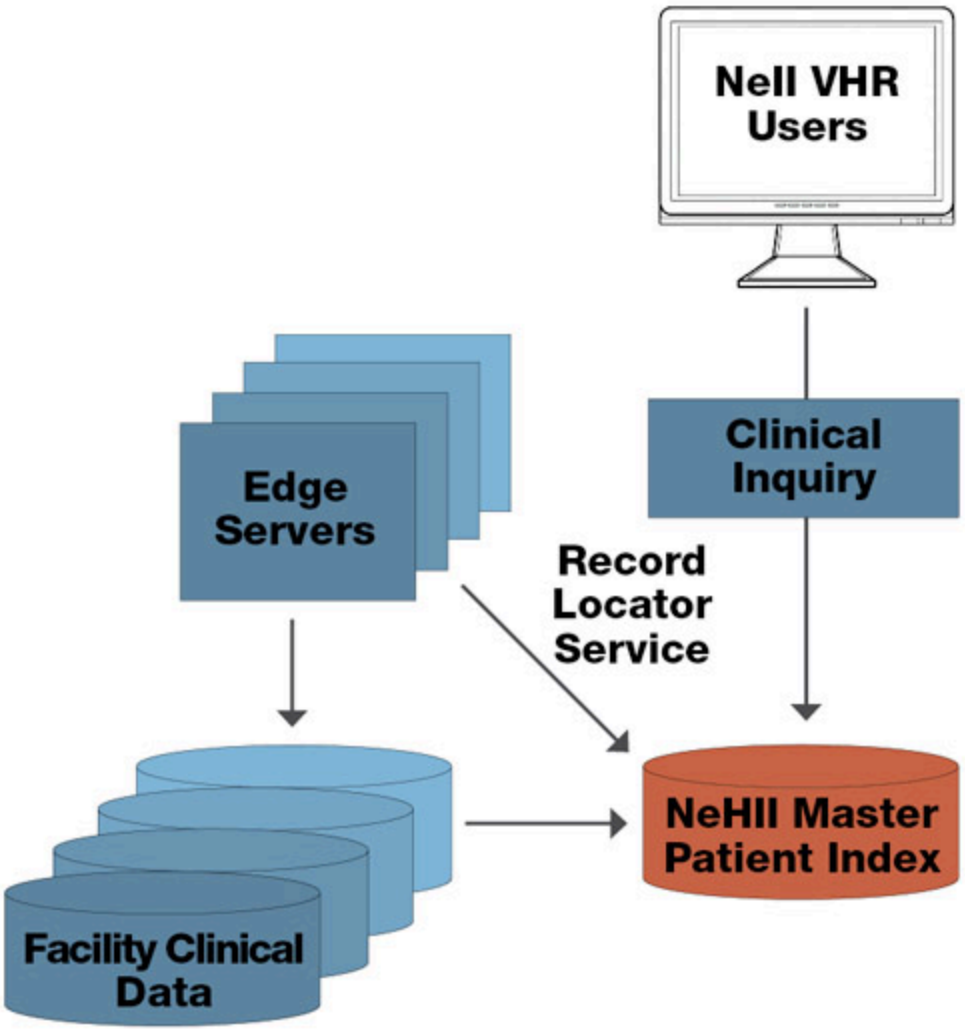

Establishing Trust and Value

Vital to the VHR's successful launch was populating it with sufficient data. Convincing potential data providers to contribute was an early challenge.

Because of NeHII's early entry into HIE, there were few successful examples of VHRs in the US. Persuading hospital CEOs and CIOs, insurance payers, and community leaders that a VHR could have a powerful and positive impact on patient health and safety was crucial. In the years prior to 2009, before the announced funding opportunities for HIE implementation called

for in the American Recovery and Reinvestment Act, the job of winning over these influential leaders was especially challenging. Supplying the necessary (and sometimes costly) interoperability, as well as trusting NeHII with the data, were serious and overriding concerns for potential data providers.

NeHII representatives traveled throughout the state, from large urban centers to rural areas, visiting healthcare and community leaders and discussing with them the value of bringing the VHR to their physicians. It was their job to convince a wide variety of constituents-solo practice physicians, large clinics, health systems, and critical access hospitals-that their efforts would be worthwhile. Face-to-face visits and long, honest conversations brought out the apprehensions of the potential stakeholders in a way that enabled the issues to be identified and managed.

To ensure these concerns and others were addressed, the major stakeholders and providers became involved in the HIE's governance, along with trusted representatives of the business community, the state hospital association, and the state government. The group, along with NeHII's implementation management and advisory consultants, completed site visits to successful HIEs, carefully taking into account their examples and success measures.

NeHII was careful to address the success measures related to data integrity, confidentiality, and availability related to patient data and application services, and directed significant time and effort to these fundamental requirements, implementing a hybrid federated model compliant with HIPAA statutory requirements.

By the time a pilot project was complete in June 2009, the VHR was displaying data from providers that included four major medical systems (comprising 10 hospitals and clinics) and a major insurance payer. The strong alliance of Alegent Health, Children's Hospital and Medical Center, Methodist Health System, the Nebraska Medical Center, and BlueCross BlueShield of Nebraska enabled a pilot that was declared a success with a unanimous vote of confidence by the NeHII board of directors.

Since that time, Nebraska's governor has named NeHII the state's designated entity for HIE, and the project has moved to statewide implementation. Mary Lanning Memorial Hospital in Hastings was the next hospital to join the exchange, followed most recently by Great Plains Regional Medical Center in North Platte. UniNet, a physicians' network based in Omaha that works with nearly 500 independent physicians, plans to participate this year. A number of additional health systems, hospitals, and specialty clinics are also committing to 2010 implementations, including VHR use, with many utilizing the e-prescribing and EHR solutions.

Increasing Provider Use, Low Consumer Opt-Out

Becoming proficient with the VHR takes about 20 minutes of on-site individual instruction per physician by NeHII trainers, utilizing the doctors' own computers. The VHR is accessed through a Web browser and a sign-on, and simple mouse clicks select the patient and type of information requested. The VHR functions similarly to Internet applications that consumers use every day.

Occasionally, groups of physicians, such as members of medical societies will gather for demonstrations and VHR training, and when travel or inclement winter weather is an issue, online training is provided.

After using the VHR, physicians are overwhelmingly positive about its benefits, specifically the medication history and consistent format of the information. Since all results are in one location, physicians do not have to wait for information to be faxed from a facility, nor do they need to log into multiple systems-everything is in one place, centrally located. The overall consensus from physicians is that it is easy to use and very intuitive.

With the help of media attention as well as consumer education materials developed by NeHII, patients are also catching on to the benefits of the virtual health record. The opt-out rates, carefully tracked since the implementation of the pilot, have consistently remained low-1.9 percent as of April 2010-confirming consumers' understanding, appreciation, and, most of all, trust in health information exchange in Nebraska.

As more and more data providers are added to the exchange, their clinical information transparently links to the solution without the need for additional training and without interruption to system users. Each new information source underlines the HIE's significance as a resource for improving the health and safety of patients, allowing NeHII leaders and supporters to move their efforts away from reinforcing the value proposition for existing users and focus on the process of expanding the HIE across the state.

Nebraska physicians can take advantage of the NeHII EHR functionality to meet requirements of the federal meaningful use EHR incentive program. The EHR, integrated with the HIE, uses an ASP model to free physicians from the expense of hardware acquisition and IT support personnel. For a license fee of $52 per month, physicians can implement CCHIT-certified technology and exchange records with other participants across the state. The cost of the VHR is $20 per month, and it can be purchased either with or without the EHR solution.

NeHII also is working to establish relationships with neighboring states to accommodate patients who seek medical care across state lines and jurisdictions. Realizing that the end goal is nationwide connectivity through the nationwide health information network, the NeHII team members wish to share the lessons they have learned and assist other organizations in the early stages of HIE development.

NeHII's road map for the future includes engaging with the state's public health efforts in the areas of disease surveillance, immunization registries, and public health alerts, as well as working to help enhance the efficiencies of Medicaid operations. Also on the horizon is the development of quality analytics reporting, claims transaction processing, and consumer access to NeHII through the use of a personal health record.

Additional information about NeHII is available at www.nehii.org.

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