

Hybrid Telemedicine Program Connects Rural Providers – Part II

By Jamie Welch and Andrew Hurd

In Louisiana, the fastest way to implement much-needed RHIO technology was to let each organization use its legacy.



Jamie Welch



Andrew Hurd



www.hhnmostwired.com

September 17, 2008

Editor's note: *This is the second installment of a two-part series on improving rural health care through IT in Louisiana. In Part I, the authors explained how the Louisiana Rural Health Information Exchange combined telemedicine and health information exchange to care for rural patients. In Part II, they discuss how the RHIO's roll-out process was shortened by using a federated approach to data sharing.*

Many regional health information organizations and telemedicine applications have fallen short of their potential. But by combining the two forms of technology, Louisiana health care providers are able to improve patient care in the state's rural areas.

As we discussed in last week's column, the Louisiana Rural Health Information Exchange (LARHIX), which includes 24 rural hospitals and the Louisiana State University Health Sciences Center in Shreveport (LSUHSC-S), applied this hybrid approach with promising results. LARHIX has improved access to specialty care for rural residents while relieving pressures on the public hospital system. This is particularly important in Louisiana, where the bulk of rural residents are uninsured or on Medicaid. To speed the implementation of LARHIX, its organizers decided to use a federated, rather than a centralized, approach to data exchange.

Louisiana's Strained Resources

In the aftermath of Hurricane Katrina, Charity Hospital in New Orleans reopened at a lower level of trauma capability than before, and LSUHSC-S became the sole Level 1 trauma center in the state. In addition, it was one of the few hospitals that provided specialty care to the state's uninsured and underinsured citizens. Soon, the organization was home to numerous, unnecessary ER visits and hospital stays for which the state had fiscal responsibility. In response, the state decided to extend specialty services to rural hospitals using LSUHSC-S' telemedicine facilities.

LARHIX was launched in 2007 with \$13 million in state funding. While the RHIO-provided teleconsultation equipment and picture archiving and communications systems have helped remote specialists visualize a patient's condition, physicians still had to fax or overnight mail patient data such as lab results, medication lists and progress notes. Hospitals remained stymied by typical barriers to health information exchange, such as disparate information systems, data governance issues, and privacy and security. Having studied lessons learned from other RHIOs, LAHRIX realized that getting 24 institutions to resolve these issues would take months, if not years.

Federated Model Simplifies Implementation

Ultimately, LAHRIX opted for a federated data model. The more common central data repository approach would have required users to pull data from disparate systems and then have it reassembled in a data warehouse. In contrast, the federated model gives users a single, unified view of data without moving it from its native applications or the originating organization. Coupled with access rules, the federated approach eliminates problems related to privacy, security

and data ownership. And because there's no need to change legacy applications, this model allows for technology deployment at multiple institutions in months rather than years.

Moving toward implementation of the federated data solution, LARHIX issued a request for proposal and received 16 responses. While some vendors claimed use of a federated model, almost every one submitted a solution that would have pulled and cached the data temporarily through the vendor solution, creating the same privacy and security problems experienced with a central repository. The sole exception provided an aggregate, scalable view of patient information—without moving the data—that authorized clinicians can access whenever and wherever the data is needed.

To provide further privacy protection, LARHIX adopted single sign-on and user auditing capabilities. Then, it implemented an enterprise master patient index to enable accurate patient identification across multiple institutions by applying algorithms to information such as date of birth and Social Security number.

The RHIO signed contracts with its vendors in October 2007. By March 2008, health information exchange was live between LSUHSC-S and Richland Parish Hospital in Delhi. Six other hospitals are currently implementing the federated data application. With additional funding from the Louisiana legislature, seven more hospitals began rolling out the application in July 2008, with plans for remaining LARHIX members to follow suit by 2010.

System administrators and clinicians in rural hospitals received one-on-one training while a larger group of clinicians at LSUHSC-S benefited from the "train-the-trainer" method. Because the addition of the federated data-sharing application doesn't impact the physician's workflow, administrators and clinicians completed training in one day or less.

Multiple Benefits and Savings

Because state funds helped establish the Louisiana RHIO, cash-strapped rural hospitals had to invest little in the project, yet stood to benefit from substantial savings. In addition, LARHIX has developed a cost-effective, self-sustaining business model. RHIO operational costs and telemedicine equipment run approximately \$4,000 per hospital per month and are currently paid for through state funding. As noted in last week's column, Bunkie (La.) General Hospital calculated that it will save \$5,500 per month from its new PACS through the elimination of film, film handling, and reduced mailing and telephone costs.

Hospitals may incur even more savings in the future because they will no longer need to print every lab result and report. Instead, physicians can view results via the portal platform leveraged by the RHIO from the hospital, office or home.

Patients also benefit from LARHIX. They no longer have to travel to LSUHSC-S, which could be hundreds of miles from their home, for a specialty consultation. Instead of waiting three weeks or more, they can participate in consultations within a day or two of receiving a referral. Additionally, physicians who practice at one of the RHIO's hospitals have instant, secure access to complete medical records, which reduces the potential for redundant tests and medication errors from drug-drug interactions.

Quality Leap in Rural Care

If a RHIO benefits patients, physicians and hospitals, stakeholders will support it. LARHIX's leaders have found the federated approach to be effective because it doesn't require an investment in new systems, complicate clinician workflow or compromise the security of patient data. Instead, it allows providers to agree on a common approach to sharing information. Just as important, a federated model is easily deployed across and between communities, creating less expense for providers and immediate benefits for patients.

The federated approach also allows small and rural hospitals to overcome geographical and fiscal limitations and gain access to specialists in academic medical centers who would otherwise never reach their communities. Considering the scarcity of physicians in most rural areas, this combination of telemedicine and state-of-the-art information technology offers the promise of a quantum leap in rural health care.

Jamie Welch is CIO of the Louisiana Rural Hospital Coalition and IT director of the Louisiana Rural Health Information Exchange, Baton Rouge. Andrew Hurd is chairman and CEO of Carefx Corp., Scottsdale, Ariz.