

# Hybrid Telemedicine Program Connects Rural Providers – Part 1

By Jamie Welch and Andrew Hurd

*A struggling state combines two innovative technologies to care for far-flung patients.*



**Jamie Welch**



**Andrew Hurd**



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**Editor's note:** *This is the first installment of a two-part series on improving rural health care in Louisiana through IT. Here, the authors discuss combining telemedicine and health information exchange to care for patients. In Part II, they explain the decision to use a federated approach to data sharing among providers.*

Louisiana last year showed a slight improvement in terms of overall health: Its ranking among the 50 states by the United Health Foundation crept to 49th place from 50th. With 21 percent of Louisiana residents uninsured and 32 percent residing in medically underserved rural communities, the state faces undeniable challenges in providing access to quality health care.

Unable to afford basic care, rural residents routinely forgo primary care until health conditions become serious enough to warrant an expensive emergency department visit. In triaging seriously ill patients, EDs often provide referrals for follow-up specialty care at Louisiana State University Health Sciences Center in Shreveport (LSUHSC-S), which may be hundreds of miles from the patient's home. Since Hurricane Katrina, this facility is the sole Level 1 trauma center in the state.

To ease the burden on LSUHSC-S, reduce costly ED usage and improve access to care in medically underserved areas, Louisiana invested \$30 million during the past two years to implement and expand the Louisiana Rural Health Information Exchange (LARHIX), a networking initiative combining telemedicine and health information exchange applications.

Under its telemedicine umbrella, LARHIX enables physicians and patients at 24 rural hospitals in northern Louisiana to conduct real-time, videoconference-based consultations with LSUHSC-S specialists over dedicated T1 lines. The consultations connect a rural patient and physician at one end with a specialist at the other, allowing practitioners to see and talk with each other.

Additionally, specialists can perform virtual examinations, such as zooming in to see inside a patient's throat, monitoring mobility of a patient's arthritic joints or taking a still picture of an infection or wound. At the same time, providers can exchange clinical information via a Web portal that offers an aggregate view of real-time patient data.

## Hybrid Approach

LARHIX's merger of telemedicine and health information exchange represents an emerging hybrid approach to this modality of care. Since its debut in the 1950s, telemedicine has remained a novelty, due in part to mixed evidence of its financial and clinical value. However, recent leaps in technology, including health information exchange, have made it cost effective and scalable, as demonstrated by the total savings attained by rural and specialty provider organizations.

Last year, the Louisiana state government appropriated \$13 million to build the health information exchange. The exchange led to the foundation of LARHIX, an initiative of the Louisiana Rural Hospital Coalition, which represents

42 rural hospitals across the state. Although improving medically underserved areas' access to specialty care via telemedicine was the Coalition's goal, it concluded early on that it didn't make financial and clinical sense to offer telemedicine without health information exchange.

Then, the Coalition gave seven hospitals in the first phase of the project \$1 million each to acquire hospital information and picture archiving and communication systems. Next, the Coalition purchased the telemedicine equipment for all 24 facilities within LARHIX and began to phase in information exchange and telemedicine among the hospitals.

## **Chronic Conditions Targeted**

In launching the telemedicine network, the Coalition focused on matching e-health services to the needs of Louisiana's rural population. Mirroring national trends, management of chronic conditions quickly rose to the top of the priority list. Diabetes is the fifth leading cause of death in Louisiana, and the state has had the nation's highest rate of death due to diabetes—32.5 per 100,000—since 1996. The estimated total cost of diabetes in the state was more than \$2.2 billion in 1997 and has continued to increase.

Since LARHIX went live in March 2008, all 24 rural hospitals can access LSUHSC-S diabetes education classes for patients. The courses are also prerecorded so that patients can view them anytime at no cost. In addition, rural hospitals can place requests for topic-specific live classes whenever needed.

To date, Richland Parish Hospital in Delhi is the only rural facility performing real-time teleconsultations and has recorded 20 teleconsultations since it went live in March. In August, LARHIX began offering real-time oncology teleconsultations, online educational sessions and virtual support groups to improve patient care and wellness, and enhance physician productivity at seven hospitals. Currently, every patient in northern Louisiana who has or is suspected of having cancer must travel to LSUHSC-S for diagnosis and follow-up treatment because of the absence of oncologists in their communities. Cancer diagnosis and treatment is an exceptionally inconvenient ordeal for patients in Richland, who make three to four 275-mile round trips to Shreveport. Patients also spend hours waiting to see a specialist and must schedule multiple appointments, and often separate trips, for each additional test.

Reduced travel time and expenses through telemedicine will enhance the lives of patients and their families. As an example, a rural primary care physician with questions about a patient's EKG can easily schedule a remote teleconsultation through videoconferencing rather than writing a referral for a face-to-face visit with a LSUHSC-S specialist. By accessing information on diagnostic tests performed in Shreveport through the health information exchange portal, the primary care physician can eliminate repetitive testing. And by verifying a patient's current, past and discontinued medications, the physician can reduce the potential for adverse drug events.

Telemedicine has already had positive impact on rural patient behavior. Bolstered by a new confidence in diagnosis and treatment via telemedicine, patients are more willing to schedule early physician office visits rather than waiting to visit an ED.

## **Quality, Savings Suggest Bright Future**

By 2011, all 24 rural hospitals will use telemedicine. The Coalition estimates that each facility will perform 50 real-time teleconsultations per month, yielding significant cost savings. For an uninsured patient, EKGs, CT scans and laboratory tests, on average, cost \$1,500, \$800 and \$50 per test, respectively. If telemedicine eliminates 100 duplicate EKGs annually, an organization could save \$150,000. Already, rural providers are seeing savings from the transition to digital records. Bunkie General Hospital, for example, has saved \$5,500 per month since its PACS deployment.

Telemedicine may also contribute to improved bed availability at LSUHSC-S. In some cases, patients won't have to leave their rural area for treatment, and in other instances, a rural patient at LSUHSC-S will have the benefit of an earlier discharge and return to family and work because telemedicine and data exchange will empower providers to monitor and care for their patients remotely.

The Coalition plans to build on the LARHIX portal as it expands telemedicine services to southern Louisiana. That network will link Louisiana Rural Hospital Coalition's 17 southern member hospitals with the Level 1 trauma

center currently being rebuilt in New Orleans.

The state legislature is likely to continue its funding of LARHIX because of its commitment to IT to enhance health care quality and outcomes. But even if the state decides to terminate its financial support, rural providers are likely to develop their own financial solutions because they know that telemedicine allows them to achieve new levels of competitiveness and efficiency.

Telemedicine is quickly becoming a permanent fixture on Louisiana's health care landscape. The future is as broad as our imagination.

***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.*

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