

# CONNECTING THE CONTINUUM

## Telemedicine Extends the Reach

BY JOHN MORRISSEY

The days of dismissing telemedicine as a mere technology option are over. Advances and refinements in the delivery of health care through audiovisual connections are powering not just individual "visits" between clinicians and patients, but entirely different ways to spread specialty expertise around, cover shortages of medical professionals, compete in metropolitan areas and anticipate health reform as well.

Telepharmacy programs fan out to multiple states providing checks on ordered medications where no pharmacist is available. Towns without a primary care doctor now have virtual clinics for follow-up treatment, negating a long car trip. Telestroke programs are bringing the unique skills of vascular neurologists to bear on possible stroke victims in distant hospitals, offering sophisticated use of clot-busting, brain-saving drugs where there had been no use of them at all.

And it's not only for rural America. "In every metropolitan area of the country, there is at least one hospital system that's investing heavily in telemedicine today," says Jonathan Linkous, CEO of the American Telemedicine Association. For instance, a system of several hospitals shares spe-

cialists, saving costs and increasing access to expertise, he says. Urban hospitals are pushing their expertise out a little farther, to outlying suburbs, or a lot farther, covering a radius way beyond their traditional reach. "If you're not doing anything now [with telemedicine], you're way behind," Linkous asserts.

Catholic Health Initiatives in late 2012 created a subsidiary to organize a host of telemedicine programs initially launched one by one in response to local needs within its 17-state network of health care facilities. Prominent among them is a telepharmacy program begun in partnership with a tech-advancement office at North Dakota State University in Fargo four years ago, which has expanded to 13 CHI hospitals and 10 non-CHI hospitals in North Dakota, Minnesota, Iowa and Kansas.

"Many of the telehealth services are not being developed as inside-the-organization-only; they're being developed with the thought that they're a capability we want to offer to other rural health care providers," says Christopher Jones, vice president for strategy and business development in CHI's Fargo division. Regulatory requirements for 24-hour pharmacist coverage, for example,

affect all hospitals in rural areas, "where there's just a shortage of every type of medical professional" and often little budget room to pay for full-time pharmacists even if they could be found.

In Kentucky, where some rural areas are far from a critical access hospital, virtual clinics under development are more than a health care way station; they're a component of a continuum of care extending out from state hubs like Lexington, Louisville or London, says Win Vaughan, vice president of operations for CHI's telemedicine subsidiary, Medical Imaging Services. Patients can have a follow-up session with, say, a cardiologist in a local facility staffed by a nurse and with some technology for diagnostics.

Technology also allows eminent neurologists like Kenneth Gaines of Ochsner Health System, New Orleans, to look into the eyes of suspected stroke patients with cameras strong enough to "see individual hairs in their eyebrows," while also quizzing family members and quickly sizing up whether symptoms indicate immediate therapy with a brain-clot drug called tissue plasminogen activator, or tPA. Gaines, one of the investigators in a 1995 trial that validated tPA therapy as a best practice, says

it's still rarely done because the process is fairly complex and local doctors aren't familiar with it, are not qualified or hesitate to make the call and be wrong; and inappropriate use can aggravate problems such as bleeding.

A telestroke program at Ochsner has brought the requisite expertise to 19 hospitals in Louisiana, enabling a small group of physicians to be on call at any time of day to spring into action. "It is really technology solving a critical need," says Gaines, who directs the service. "It takes the vascular neurologist to places he couldn't possibly get in a time frame that he couldn't possibly get there." A local specialist on call couldn't match the mere minutes it requires between diagnosis and therapy [see case study].

Before the program began in 2009, tPA therapy was administered in only 10 percent of Louisiana hospitals. As of late July, more than 2,300 consultations had been logged. The average U.S. stroke center's use of the drug is 5 percent; Ochsner's telestroke use is 37 percent.

### CASE STUDY

When Gaines is on call for Ochsner's telestroke program, he can open his laptop at the office and connect with an emergency department anywhere in its telestroke system within a few minutes. That applies equally to situations across the state or across the Ochsner campus.

"Given the vagaries of elevators and other things, it would take me probably 10 minutes even to get to our hospital emergency room," he says. So he sits tight and does the initial consult without leaving his chair, as do others on his team. "Then, obviously, we'd go down to the emergency room to see the patient, but it lets us get the process under way in a much more timely fashion."

That jump on the response time saves about 2 million brain cells per minute. Use of the drug tPA has "an ever-decreasing effectiveness, and it's most effective the earlier you treat," Gaines says. "If you treat five minutes earlier, you're better off than

if you treat five minutes later."

That being the case, imagine waiting for a local doctor with the right experience to come in from home or an off-site office, much less having to airlift a patient to a stroke center. Telemedicine can "take this expertise and spread it out geographically, and offer it 24/7/365 in a time frame that makes sense," Gaines says.

### CASE STUDY

Bringing telepharmacy to the Upper Plains took more tact than tech to ensure success, says CHI's Jones. "The technology is ubiquitous; you pick one and it's going to work." The static came instead from medical professionals and skeptical budgeters, he says, noting that the 4-year-old program took two years to get going.

Even though pharmacists were scarce, the ones that were there "became über-sensitive to the fact that they may lose their jobs." Many hours were spent with pharmacy directors to help them understand how the service enabled more of the right care in a region of professional shortage. For instance, having a remote pharmacist con-

centrate on orders allowed the pharmacist on-site to have meaningful dialogue with physicians about appropriate drug management for given conditions. "We're doing more of something they wanted to do all along," says Jones.

The program calculated it could provide telepharmacy for about \$20 an hour, compared with \$50 to \$55 an hour a typical pharmacist makes in the region. Hospital CEOs countered that the extra coverage was still a cost they never had before, despite the cheaper rate. But Joint Commission and state health standards requiring 24-hour pharmacist availability were fast approaching, and suddenly the model made business sense.

Merging telepharmacists with local staff still presents communication and accountability challenges. "How do you make someone who's remote, who's on a bunch of other people's teams, [also] on your team?" Jones asks. "We're still working through that." ●

### QUICKER, BETTER, CHEAPER:

#### One study of telepharmacy impact demonstrated:

- AN ADDITIONAL 45 HOURS PER WEEK OF PHARMACY SERVICES AT FOUR URBAN HOSPITALS, 10 HOURS PER WEEK AT A SMALL RURAL HOSPITAL.
- A 50 PERCENT DECREASE IN MEAN PROCESSING TIME FOR ROUTINE ORDERS, TO 14 MINUTES FROM 27, AND A 25 PERCENT DECREASE IN STAT ORDERS, TO 9 MINUTES FROM 12.
- A 42 PERCENT INCREASE IN INTERVENTIONS BY PHARMACISTS FREED UP FOR CHART REVIEW, ORDER CLARIFICATION, DOSE ADJUSTMENT, AND EDUCATION RELATED TO MEDICATIONS AND DISCHARGE.
- SAVINGS ESTIMATED AT \$1.13 MILLION PER YEAR, WHICH ARE ASSOCIATED WITH THE INCREASE IN CLINICAL INTERVENTIONS MINUS THE COST OF THE SERVICE.

Source: Case study at Via Christi Health, reported to Agency for Healthcare Research and Quality's Innovations Exchange, 2013

# CONNECTING

# THE CONTINUUM

## About the series

As health care moves rapidly toward a value-based delivery model, a greater emphasis will be placed on care coordination. We must ensure that patients not only get the right care at the right time in the right setting, but also that every part of the delivery system is connected and understands that a patient's need will be critical going forward. Information technology will be instrumental in making sure that these connections take place and in providing clinicians with valuable new decision support tools.

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