

# Telemedicine: Will it Bridge the Provider Gap?

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A growing patient population, a shrinking doctor pool. This is not an ideal set of circumstances, but it is reality for the dialysis industry. Could telemedicine be part of the solution? According to leaders at the Federal Communications Commission, possibly. On July 15, 2010, the FCC introduced a new healthcare connectivity program to expand investment in broadband for medically underserved communities across the country. The purpose of the program is to give patients in rural areas access to state-of-the-art diagnostic tools that are usually only available in large and wealthy medical centers.

The proposals include:

- Partner with public and nonprofit healthcare providers to invest millions in new regional and statewide broadband networks in parts of the country where it is unavailable or insufficient. The new program aims to build cost-effective broadband networks—connecting doctors, hospitals and clinics.
- Making broadband connectivity more affordable by sharing half of the monthly recurring network costs with hospitals, clinics and other healthcare providers. This enhanced support for broadband connectivity may benefit patients served by thousands of public and non-profit rural healthcare providers.
- Delivering connectivity where it is needed most, including skilled nursing facilities and dialysis centers, along with off-site administrative offices and data center that perform support functions critical to healthcare networks.

The program's investment in broadband connectivity would not only improve medical care, but also help reduce healthcare costs, the FCC stated in a news release. "It would spur private investment in networks as well as health-related applications, and would help create jobs that range from building infrastructure to developing and implementing health IT solutions," it continued. "This program has the potential to do for rural healthcare providers and patients what the enormously successful E-Rate program has done for schools and students."

Right now, a great many healthcare campuses lack affordable access to even the basic broadband connectivity that is necessary handle tasks such as managing medical records, transmitting diagnostic results, or hosting a remote meeting, according to the FCC. Nearly 30 percent of federally funded rural healthcare clinics can't afford secure and reliable broadband services, the agency claims. "Shockingly, only eight percent of Indian Health Service providers even have access to the broadband they would need to deliver advanced healthcare to their patients," according to the FCC release.

The program would invest up to \$400 million annually with the intention of helping doctors, nurses, hospitals and clinics deliver high-quality healthcare to patients no matter where they live. It is one of four programs in the Universal Service Fund administered by the FCC. Without increasing the projected size of the overall fund, the Notice of Proposed Rulemaking would bring affordable broadband connectivity to more than 2,000 rural hospitals and clinics.

The State of California is not waiting for federal intervention. On Aug. 17, 2010, Gov. Arnold Schwarzenegger and U.S. Chief Technology Officer Aneesh Chopra joined leaders of statewide healthcare and technology agencies at the UC Davis Cancer Center in Sacramento to launch the California Telehealth Network (CTN). Officials said the California Telehealth Network is the largest single-state grant award of its kind, connecting more than 800 California healthcare facilities to a statewide medicalgrade network of healthcare and emergency services.

"Our passion for broadband and healthcare is tangible and real and will have a big impact here in California," Chopra said during the announcement. "The CTN network will provide both the traditional and advanced IT infrastructure that telemedicine needs for growth."

The network is the result of a \$30 million joint funding effort between the Federal Communications Commission (FCC), the California Emerging Technology Fund (CETF), the California HealthCare Foundation, UnitedHealthcare, the National Coalition for Healthcare Integration, the University of California and other private and public entities, according to a California Telehealth Network press release.

By bringing broadband capacity to those in need, CTN is empowering individuals to take more responsibility for their own health, said Sunne Wright McPeak, president and CEO of California Emerging Technology Fund. "We're proud to be a partner in the effort to build a robust statewide network that will bring specialized health and medical care to underserved communities, both rural and urban," she said.

Currently 12 million Californians are still not connected in their homes, according to McPeak, who predicts that access will quickly improve their healthcare regime. She also expects that telehealth will reduce the cost of follow-up care by 40 percent, and reduce overall cost by six percent. At San Joaquin General Hospital, there are six telemedicine initiatives.

The initiatives are:

- Health Care Interpreter Network
- Diabetic Retinopathy Screening (store and forward)
- Teledermatology
- Teleneurology
- Mental Health (juvenile Justice)
- Child Sexual Abuse Exam Monitoring Program

The benefits differ, depending on whether you are a hub or a spoke, according to Jerry Royer, MD, MBA, chief medical officer at San Joaquin General Hospital, in French Camp, Calif. "For spoke sites, specialty care access extends to areas that do not have specialists," Royer said. "Hub sites benefit from referrals. At spoke sites, patients have telemedicine access to specialty care not available in the community. Patients also benefit from referrals to hub sites and their specialists."

Can telehealth be used in dialysis as well? Absolutely, and it's already being done. Telemedicine at the Dialysis Center of Lincoln has allowed staff, nurse practitioners and physicians to interact in a more timely manner, and has bridged the distance gap electronically with sight and sound, according to Larry Emerson, CEO of the Dialysis Center of Lincoln.

There are two rural dialysis units 45 and 80 miles away, which is clearly inconvenient without telemedicine. The technology has allowed patients greater access to healthcare professionals, especially nurse practitioners. Otherwise, travel time is a huge issue. "We even hear that with three units covering a small urban area, telemedicine helps to lessen those costs," Emerson said. "I think the professional staff like the interaction as it makes for better communication and information exchange and thus better decision making. Most patients would rather see the professional in person, I personally would feel that way. But as patients use the technology, their level of comfort improves and creates an opportunity for a good exchange. Even though it doesn't allow direct touch it allows for a sense of personal attention."

At Fresenius Health Partners, telemedicine has been a critical component for several years, said Robert Farrell, president of Fresenius Health Partners. A successful aspect has been the KidneyTel program. Soon after the system was implemented, Fresenius Health Partners started seeing a reduction in hospitalization and mortality rates of the patients enrolled in this program, Farrell said.

The KidneyTel system combines home telehealth monitoring device technology with an integrated care management program specifically tailored to the kidney patient, he added. The system monitors dialysis patients' health issues through a series of interactive questions in key health risk areas, and also collects daily vital signs of blood pressure, weight, and blood glucose. All of this information is transmitted daily to the KidneyTel IT system and call center. The KidneyTel clinical team is alerted to patients' health risks and trends, and if complications arise they can determine an appropriate response by the dialysis clinic, nephrologist, and other healthcare providers.

"So, a primary benefit of telemedicine to healthcare providers is more frequent recording of biometric and symptomatic data points to enable more thorough assessment and prompt patient-specific provider intervention," Farrell said. "The KidneyTel system's Web-based platform allows the healthcare team to log into a database and view patient information and outcomes, including in-center and home reporting data. It also shows actions and interventions by the telephonic nurse in support of integrated care. The KidneyTel program is fully accredited by both NCOA (National Committee for Quality Assurance) and URAC (Utilization Review Accreditation Commission) for disease management.

These benefits include:

- Prevention and early intervention of complications common among ESRD/CKD patients, which reduces hospitalization and improves overall quality of life.
- Daily interaction with a dedicated telephonic renal nurse. This can be especially helpful on days when patients aren't in the clinic for dialysis treatment. This increased frequency of contact encourages greater participation of the patient in their care. It also offers the potential for education/learning, promoting positive modification of behavior.
- Daily monitoring of blood pressure, weights, glucose readings (if diabetic) in the home with minimal impact on the patient's routine.
- Health check questions specific to the patient's dialysis modality and history of co-morbid diagnosis essential for focused member specific management.
- Education surrounding all aspects of the disease process and in association with the specific plan of care. A monthly care plan report is distributed to the patient and provider for discussion during scheduled visits.

Overall, the use of telemonitoring has led to positive outcomes for the patients and providers utilizing this technology, Lee believes. "The KidneyTel monitoring devices are simple to operate," she said. "However, it's important to educate patients about the benefits of the device, because they need to be dedicated to using it consistently."

### **Pitfalls**

Telemedicine is useless to some, moderately helpful for others, and a panacea for others still. Anyway you look at it though, there are downsides. The main downside is that it will never replace face-to-face communications and contact, Emerson said.

For Emerson, another pitfall has been billing. His team has not yet attempted to bill for the connection. "I understand that the location where the patient is might be able to bill," Emerson said. "Physicians and nurse practitioners are able to use the telemedicine contacts to meet their visit requirements—you still need a face to face. Is it worth the investment? We use a mobile unit so each one is fairly expensive; they double as a workstation. In the long run I would say it was worth the investment, we've added equipment each year and plan to use it more in our home dialysis program in the future."

Emerson suggests that anyone contemplating telemedicine in their dialysis business should ask:

- Do I want to enhance my non face-to-face contacts and communications?
- Do I have opportunities to reduce travel between sites?
- Do I understand that there will be challenges?
- Am I committed in terms of investment and time to making it work?

Another pitfall is the acquisition of funding, for most teams at least, according to Royer. "We are fortunate in having most of our equipment provided from UC sponsors/grants," he said. More good news is that telemedicine is becoming increasingly reimbursable. "[It's] definitely worth the investment in terms of specialty care access," he said.

Fresenius Health Partners has utilized KidneyTel Home Telehealth Monitoring devices in the Medicare Advantage Special Needs Plan during the CMS Demonstration Project, as well as with members of Commercial Health Plan payers.

"In both cases, we experienced improvements in hospitalization, mortality and overall care costs," Lee said. "As of now, traditional FFS Medicare does not reimburse for the telehealth devices, but their demonstrated value will justify their inclusion into integrated care models under the Accountable Care Organizations."

One pitfall can include acquiring, setting up and maintaining hardware.

### **Hardware**

"The hardware depends on the specialty: high-definition screens, cameras, T1 lines," Royer said. "I'm not aware of smart phones being linked in to telemedicine networks [but I ] can't imagine that it hasn't been done. Obviously, there is the intermediate screen and camera. But with good equipment, this 'barrier' is not problematic. UC Davis uses telemedicine for ERs and ICUs in distant, smaller communities."

There is considerable investment expense in hardware, and you need a unit at both ends of the connection, Emerson said. "Our system runs across our internal network," he added. "We acquired high-resolution equipment to help the visual quality staff can get clear close-up views of the patient such as access site, etc. We are talking about moving it out into the state network and Internet world to address issues we have with a growing home program."

Emerson's team assists the patients so they aren't directly operating the telemedicine system. "Obviously you need to be aware of the equipment what is going on and how it appears at the other end," he said. "So preparation and practice help to make the experience good at both ends. Everyone seems a little camera shy so that takes some getting used to. We have patients that just won't try it but we found that acceptance improves after it's used awhile and people recognize it's helpful and valuable and not scary."

The KidneyTel monitoring device involves its own hardware solutions. It's available as a cellular device, and can also be used with a standard phone line, Lee said. "Patients are provided with an associated blood pressure cuff and weight scale, as well as a glucometer for those with diabetes," she added. "These are linked to the KidneyTel monitoring device for the transmission of data."

Telemedicine involves certain hiccups, but overall, it could go a long way in lessening the caregiver shortage many patients face. RBT