

## Virtual Visits Ease Healthcare Disparity

### Northern Sierra Rural Health Network

### Polycom video network helps thousands of rural Northern Californians access top-quality psychiatric and acute medical care

Typically, when people think of California, visions of sun drenched beaches and fast-paced city life in places like Los Angeles and San Francisco come to mind. But in reality, 75 percent of California is categorized as rural, with some towns so remote they're home to less than 100 residents. Among the host of challenges associated with rural living is the very serious concern of access to adequate healthcare. In many remote California communities, specialty care is non-existent and the nearest large medical center can be hours away.

Susan Ferrier, network coordinator, with the non profit Northern Sierra Rural Health Network explains the convergence of factors that make healthcare delivery such a challenge in this particular region.

"The geography of the area alone, with five mountain ranges, six national forests and a desert, provides an idea of how vast and remote it is," says Ferrier. "And its population is generally older and less affluent, with a much higher proportion of unemployed, and under-insured or uninsured residents than the rest of the state. Add to that the fact that it's difficult for the types of clinics and small hospitals that service rural communities to find the time and resources for effective grant writing, which can bring in significant aid and money, and you end up with a pretty desperate healthcare situation."

#### The Power of the Collective

Speranza Avram, founder and executive director of the Northern Sierra Rural Health Network, became acutely aware of the disparity in the availability of healthcare between urban and rural settings in the mid 1990s. At that time, she was living in a very rural part of Sierra County, Calif. with only 3000 residents, and working in a local clinic.

"When I would communicate with other remote, rural healthcare facilities in the area, we all agreed there must be a way to more effectively bring resources and healthcare money into the region. So, a small group of rural health clinics, rural hospitals and public hospitals in Northeastern California got together to discuss organizing and applying collectively for healthcare dollars," says Avram. "The majority of healthcare providers in this region are safety net providers – those who care for the under and uninsured, so funding is particularly crucial to maintaining their operations."

Out of the coordination of this small group of rural health care providers came the non-profit Northern Sierra Rural Health Network. Incorporated in 1996 with just 12 rural health sites participating, today the network encompasses more than 40 providers with one of the most valuable services it offers being a video telemedicine network.

"One of the most pressing problems in rural healthcare is access to specialists, particularly mental health professionals," explains Ferrier. "For example, there is only one child psychiatrist from Redding, in Northern California, to the Oregon border 140 miles to the north and to the Nevada state border 175 miles to the east. Our best bet for delivering access to needed clinical specialties to our residents is through telemedicine."

Video telemedicine is ideal for connecting remote residents with specialists because it eliminates the need for patients to travel, which can be a hardship for the elderly or those for whom travel is simply cost prohibitive. In addition, by keeping patients in their home communities, the revenue from things like diagnostic work and prescriptions also stays in that community, giving what is often a needed boost to the local economy.

#### Challenge

Remedy the severe and at times life-threatening lack of quality specialty healthcare in rural Northeastern California, particularly access to quality mental health care

#### Solution

Polycom VSX™ video conferencing solutions, Polycom MGC™-100 multipoint control unit, Polycom VisualConcert™ data collaboration solution

#### Result

A telemedicine network that offers access to 31 distinct medical specialties and has facilitated more than 5,000 clinical consults, including 3,050 tele-psychiatry sessions

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*Susan Ferrier  
Network Coordinator  
Northern Sierra Rural Health Network*

## Telemedicine in Practice

The Northern Sierra Rural Health Network Telemedicine Network is based on Polycom video conferencing systems, which are deployed throughout the region at 30 small clinics, hospitals and public health departments. The interactive video conferencing technology allows clinic and hospital staff in these small communities to easily connect directly with larger medical centers and specialists all over the state for real-time, face-to-face discussions about patient care, diagnosis and prognosis.

In the five years the telemedicine network has been up and running, it has logged more than 5,000 clinical consults and facilitates access to 31 distinct medical specialties as varied as pediatrics, cardiology and HIV/AIDS programs and even the occasional dentistry and optometry consult. But with 3,050 of its consults having been psychiatry sessions, tele-mental health comprises the majority of the network's clinical activity.

"There are simply no psychiatrists in our rural geographies, a patient would have to drive hours one way to reach the nearest provider," says Ferrier. "Psychiatrists can't sustain private practices in our small towns with so few residents."

NSRHN contracts with medical facilities in both Northern and Southern California for 675 hours of telemedicine psychiatry consultations each year. "We never waste an hour, we could use even more time if we could afford it," says Ferrier. In addition, the organization connects 20-plus patients at a center for the developmentally disabled in the region each month with specialists at Cedars Sinai for psychiatric care. As a former nurse, Ferrier knows how important it is to connect these patients with exactly the right doctors. "Providing care for the developmentally disabled presents a unique set of challenges, being able to reach physicians at Cedars Sinai who are specifically trained to address those issues is invaluable."

Ferrier reports positive patient acceptance of psychiatric consults over video. "Our clients find the medium very non-threatening, and the children love it. In fact, a lot of times, the visits go better than they would in person because the technology removes some of the nervousness and intimidation of meeting with a mental health professional."

In addition to psychiatric care, the NSRHN has helped countless patients in acute distress.

"We're able to use our video conferencing capabilities for a multitude of clinical applications," says Ferrier. "For example, a man recently visited a clinic in Downieville, California complaining of chest pains, but was reluctant to leave his home community. Using an electronic stethoscope connected directly to the Polycom video system, the clinic staff was able to conference with doctors at UC Davis who diagnosed him as having a massive heart attack.

## The IT Perspective

*The Northern Sierra Rural Health Network Telemedicine Network relies on Polycom video communications systems, featuring the award-winning VSX line, which includes Siren™ 14 audio and Polycom StereoSurround™ to deliver the best audio and video performance in the industry. Systems are deployed at 30 sites throughout the counties the Network serves with most calls running at 384 kbps.*

*ISDN is not available in most of the remote sites on the network so the organization installed T1 lines at the locations and uses a Polycom MGC-100 conferencing bridge to connect with outside ISDN lines. The network is primarily ISDN, but Ferrier and her colleagues are in the process of adding IP capability to the existing MGC bridge.*

*For the frequent data sharing that takes place on the network, the organization uses Polycom's VisualConcert.*

He was quickly transferred to a major medical center for treatment, video conferencing probably saved his life."

## Keeping Doctors Up to Speed and in the Community

The telemedicine network has also facilitated more than 1600 non-clinical conferences, including continuing medical education (CME) and administrative meetings.

"Delivering continuing medical education to our practitioners is a vital function of the telemedicine network," says Ferrier. "Often times, there is only one doctor or nurse in a rural community, making it nearly impossible for that person to travel to attend classes that are required for recertification and licensing."

More than 1000 CME classes have been offered over the telemedicine network in the past five years and an average of two classes weekly are available, connecting care providers with such highly regarded institutions as the University of California at Davis.

The telemedicine network has also helped alleviate the pressure of a severe nursing shortage in the state. Several of the nursing staff at Fall River Mills Mayers Memorial Hospital were pursuing RN degrees which required them to travel an hour and a half and traverse several mountain passes to attend classes at Shasta College in Redding. Often, foul weather made the drive impossible. So, Shasta College began offering the courses over video and the nurses currently attend 16 hours of class per week right from the hospital where they work. Community residents in Fall River Mills also have access to the classes.

The telemedicine network has saved the organization time and money on administrative meetings as well.

"It's several hours travel time between most of the sites in the network, so things like board meetings and regional health planning can take place over video," adds Ferrier.

## Making the Connections

The Northern Sierra Rural Health Network has deployed numerous Polycom video conferencing systems, including its award-winning VSX line, which delivers the industry's highest audio and video quality.

"The Polycom video systems have been extremely reliable, and it's so nice to have the same user-friendly interface among our 30 geographically dispersed sites," says Ferrier. "And when it comes to ease of use, we always say - if you can use a remote control, you can use a Polycom!"

The network also uses a Polycom MGC-100 conferencing bridge to seamlessly connect video systems running over T1 lines with ISDN-based systems and for multipoint conferences. For data sharing, which is a frequent component of CME sessions and used often in assistive technology consults, the organization has deployed Polycom's VisualConcert.

## Advancing Rural Healthcare

Both Ferrier and Avram agree that in healthcare, needs are constantly changing and evolving, and their goal is to continue leveraging the latest in communications technology to effectively and efficiently meet those needs, now and in the future.

"We're proud of the difference we've been able to make in the lives of the rural residents we serve through our telemedicine network," adds Ferrier. "Video conferencing truly is an ideal medium for helping level the playing field and providing equal access to the best specialty care."

Current plans include an effort to identify additional hospitals that can provide specialty consults in order to continue best serving the Northeastern Sierra populations through telemedicine. Ferrier is also optimistic that the nursing programs offered remotely by Shasta College can be expanded to include other providers in the network.



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**Polycom Headquarters:**

**Polycom EMEA:**

**Polycom Asia Pacific:**

4750 Willow Road, Pleasanton, CA 94588 (T) 1.800.POLYCOM (765.9266) for North America only.  
For North America, Latin America and Caribbean (T) +1.925.924.6000, (F) +1.925.924.6100

270 Bath Road, Slough, Berkshire SL1 4DX, (T) +44 (0)1753 723000, (F) +44 (0)1753 723010

Polycom Hong Kong Ltd., Rm 1101 MassMutual Tower, 38 Gloucester Road, Wanchai, Hong Kong, (T) +852.2861.3113, (F) +852.2866.8028

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