

Native Healthcare Solutions for the 21st Century

SouthEast Alaska Regional Health Consortium

Polycom video delivers healthcare to the rural villages of Southeast Alaska

It's a common problem throughout the United States – delivering the same quality of healthcare to rural communities that is available to residents of more urban areas. But perhaps nowhere is that challenge more acute than in Southeast Alaska, a region characterized by remote and sparsely-populated communities located 900 miles from the nearest large city — Anchorage to the north and Seattle to the south. The area includes the state's capitol of Juneau but only has a total population of 68,000, with 22 of its towns home to less than 1,000 residents each. There are very few roads connecting the 25 towns and villages that make up Southeast Alaska; instead, residents travel among communities on commercial jets, small planes, and the state-run Alaska Marine Highway ferry system.

In addition to geographical isolation, residents of Southeast Alaska have severe weather to contend with, including upwards of 90 inches of rain per year. Inclement weather often makes travel impossible, creating a precarious situation in medical emergencies. In fact, pregnant women from the area's rural communities must travel to the hospital two weeks before their due dates because there are no facilities in their villages equipped for childbirth. Traveling by ferry at the onset of labor is not feasible since the journey can take up to a day and a half. And with a price tag of \$1,200, chartering a plane for the 40-minute flight is cost prohibitive and might not even be an option in foul weather.

There's no question that delivering rural healthcare in Southeast Alaska is an enormous challenge, but thanks in part to federal grants, the SouthEast Alaska Regional Health Consortium (SEARHC) was able to implement video conferencing technology to help ease that burden.

Leveraging Resources to Find a Solution

SEARHC (pronounced "Search") provides healthcare to almost 12,000 Tlingit, Haida, Tsimshian and other Native people in 25 communities of Southeast Alaska. A tribally owned nonprofit health care institution, SEARHC qualifies for universal services subsidies which help fund the organization's eight wide area network (WAN) circuits.

In addition, as a federally-funded healthcare institution, SEARHC was able to become a partner in the statewide Alaska Federal Health Care Access Network (AFHCAN). AFHCAN is a telemedicine network linking 248 sites spanning the massive Alaska region and including military installations, Alaska Native health facilities, regional hospitals, small village clinics, and State of Alaska public health nursing facilities.

"AFHCAN was a statewide project to implement telemedicine in all healthcare facilities that receive federal funding, such as public health organizations and Native healthcare providers like ours," explains Peter Apathy, senior programmer and analyst for SEARHC. "It was designed primarily for store and forward telemedicine applications, but we've been very successful in using it for real-time video conferencing in healthcare."

Leveraging its AFHCAN funding, SEARHC first deployed video conferencing in Sept. 2000, and its use has steadily increased since then. In a typical six-week period, the organization's 30 endpoints log nearly 600 hours of video conferencing.

One Network, Many Uses

The original implementation of video on the SEARHC network connected the organization's regional hospital in Sitka and its administrative offices in Juneau. From there, video use grew rapidly and additional units were deployed in six SEARHC clinics. Plans are in place to deploy video endpoints in three more clinics and most locations now have two or more video endpoints in regular use.

"Our organization is quite dispersed. Video really helps bring everyone together and that's why high level buy-in for the use and purchase of the technology has been complete," says Apathy. "We use video for everything from continuing medical education to virtual family visits with Grandma who's been hospitalized and away from home for a while."

Challenge

Provide world-class healthcare to rural Alaska residents faced with geographical isolation and weather constraints that often makes traveling to obtain care impossible

Solution

Polycom VSX™ 6000 video conferencing systems, Polycom MGC™-50 multipoint control unit, Polycom PathNavigator™ call processing server, Polycom Global Management System™ network management software

Result

Reliable, timely, high-quality healthcare delivered via an IP video telemedicine network

"The acceptance of video conferencing throughout our organization has been amazing. At this point, when we look at expanding clinical services, video conferencing is automatically included in the facility design."

*Peter Apathy
Senior Programmer and Analyst
SouthEast Alaska Regional Health Consortium*



For example, the SEARHC Board of Directors is comprised of one lay person from each of the 18 communities the organization serves. The group's twice yearly meetings require travel either by ferry, jet or small plane, and it's not uncommon for travel to be prohibited by weather. The local availability of video conferencing at the village clinics allows participants to attend the meetings regardless of the weather.

Connecting patients with their families is becoming a common use of the SEARHC video network. Unlike families in the "Lower 48" states, which tend to be geographically dispersed all over the country and even around the world, the communities of Southeast Alaska are tightly knit, with generations continuing to reside in the same village. That makes separation from family particularly difficult when an elder must be hospitalized in Sitka for an extended period. To help ease that burden, SEARHC has used video conferencing to link elders with relatives back at home.

"It's tough on families to be separated because of long hospital stays, so we simply ask them to go to their local clinic and we connect them with Grandma or Grandpa over video," says Apathy. "Being able to see loved ones, in real time, is the next-best thing to paying an actual visit and often is just what the doctor ordered for the patient to feel connected to family back home."

In addition to business meetings and family visits, video is especially important for continuing medical education (CME). "CME classes are rarely available locally, which is a problem because it's a requirement for professional recertification and licensing," says Apathy. "And, since our village clinics are often staffed with only one provider, it leaves a huge void if that person travels to attend a class or seminar."

A recent example of CME leveraging both the SEARHC network and the AFHCAN telemedicine network is a video conference among SEARHC's various field staff and pain management specialists at a hospital in Anchorage. The call connected eight sites and Apathy and his staff were able to control the entire conference, including remote endpoints, from Sitka.

"While the staff at our field clinics are quite familiar with the video technology and can operate the systems without any assistance from my staff, it's helpful in situations like these to have remote control," explains Apathy. "The providers in Anchorage had never used video equipment before and it's not their job to know how to operate it. It was great that we had the ability to run the conference, even going so far as to display their PowerPoint presentations for them. The entire conference ran flawlessly."

And recently, faculty from the highly-respected Swedish Medical Center in Seattle visited Sitka and presented a breast cancer overview by video to medical staff, local staff and every field clinic simultaneously.

The IT Perspective

The entire SEARHC video network is based on Polycom video conferencing systems, including the company's award-winning VSX 6000 which includes Siren™ 14 audio and Polycom StereoSurround™ to deliver the best audio and video performance in the industry. A total of 30 Polycom video systems have been deployed, with ten more anticipated in the coming months. Almost half of the video calls made within SEARHC involve multiple locations, for which the organization uses Polycom's MGC-50 multipoint control unit. Most calls run at 384 kbps over the converged voice, video and data network that also features QoS. SEARHC manages and keeps its video network up to date using Polycom's Global Management System software.

Enabling Health Solutions

In a very short time, video conferencing has become integral to SEARHC operations, with the video deployment expanding rapidly from the two original systems to include 30 endpoints and a conferencing bridge that can connect up to twelve sites in one video call.

SEARHC currently has 30 Polycom video conferencing endpoints at locations throughout the region, including Polycom's flagship VSX™ platform.

Even with universal services subsidies, wide area network circuits in rural Southeast Alaska are costly compared to those in the "Lower 48" states, and ISDN isn't even available. So the option of deploying an IP-only solution like the VSX 6000 without sacrificing quality appealed to SEARHC. Apathy is very much looking forward to the reduction in necessary bandwidth the H.264-enabled VSX 6000 systems will provide.

"Bandwidth can be a real issue in this remote part of the state, so having access to H.264 functionality is going to be a huge boon for our communications by allowing us to make calls with lower bandwidth," he says.

Another consideration in the clinic environments was space, and the small footprint of the VSX 6000 fit the bill. SEARHC is also considering deployment of the flat-panel VSX™ 3000 in exam rooms for patient consultations.

SEARHC has found desktop video to be important to its organizational communications and has deployed ten Polycom desktop systems. The Human Resources staff use desktop video conferencing for benefits orientations, and the community health medical director uses his desktop solution to meet with field staff at SEARHC's remote clinics.

For calls involving multiple sites, SEARHC has deployed Polycom's MGC-50 multipoint control unit (MCU), allowing the organization to connect up to twelve sites in a single call.

SEARHC uses Polycom's Global Management System to manage the entire video network from any location. For example, the address book and provisioning functionality of the software eliminate the need to configure each endpoint manually. And, the ability to deploy software upgrades remotely enables

SEARHC IT staff to keep the systems up to date, regardless of their physical location. Polycom PathNavigator is used to limit the bandwidth allocated to video and prevent interference with the voice and data traffic on the SEARHC network. SEARHC also leverages PathNavigator's Conference-On-Demand feature which allows users to set up ad-hoc multipoint video calls instantly.

"The Polycom video systems are so easy to use that the clinic staff make the connections themselves, so there's no need for a full-time video conferencing administrator," says Apathy. "And everyone is reaping the benefits. I hear all the time from users how much video enhances a meeting and that the audio quality in a video call is superior to that in a standard telephone conference call."

Moving Remote Healthcare Forward

Looking toward the future of telemedicine in the SEARHC organization, Apathy sees expanded clinical use in areas like telebehavioral health, physical therapy and dental work. SEARHC is also considering doing its own audio bridging in the future, and with a simple addition to its MGC MCU it will be able to seamlessly make that transition.

"The acceptance of video conferencing throughout our organization has been amazing," concludes Apathy. "At this point, when we look at expanding clinical services, video conferencing is automatically included in the facility design."

About SouthEast Alaska Regional Health Consortium

SEARHC is a regional non-profit tribal health care organization that serves the health care needs of the Tlingit, Haida, Tsimshian and other Native people of Southeast Alaska. SEARHC is governed by an 18-member board, which represents each of the communities whose members are served by the consortium. SEARHC employs close to 1000 people and offers a broad range of outpatient health care services including medical, dental, behavioral health and disease prevention programs, and inpatient medical services at its Sitka-based regional hospital.



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