

Alaskan Healthcare Agency Reaches Rural Patients Wirelessly

Southcentral Foundation Deploys a Cisco Unified Wireless Network to improve patient care at its headquarters and rural satellite sites.

EXECUTIVE SUMMARY
<p>SOUTHCENTRAL FOUNDATION</p> <ul style="list-style-type: none"> • Healthcare • Anchorage, Alaska • 1200 employees <p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Provide wireless Internet access to both the main healthcare facility and 30 satellite locations, in order to improve communication among the far-flung sites • Help ensure clinicians can quickly evaluate patients in remote locations • Enable building-to-building network mobility for healthcare workers • Improve compliance with federal regulations such as HIPAA
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • A Cisco Unified Wireless Network provides central management of wireless access points in multiple locations • Networked electrocardiogram and ear-nose-throat carts wirelessly transmit patients' medical activity to doctors in the home office • Multiple SSIDs and virtual private networks keep employee traffic securely separate from guest traffic • Cisco wireless IP phones allow voice calls to roam between facilities
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Doctors can receive critical patient data without necessarily having to travel to remote sites • Deployment time for new access points has been reduced from several days to a few hours • Patients can use the Internet during long procedures such as kidney dialysis • The network makes it easy to prove compliance with federal regulations

Business Challenge

Incorporated in 1982 under the tribal authority of Cook Inlet Region, Inc., Southcentral Foundation is an Alaska native-owned healthcare organization serving native Alaskans and American Indians living in Anchorage, the Mat-Su Valley, and 60 rural villages throughout the state. The foundation serves some 46,800 clients with primary care outpatient medical services, dentistry, optometry, substance abuse treatment, and domestic violence prevention programs.

The foundation was formed with the aim of providing comprehensive and immediate care to all those who need it. At the Anchorage Native Primary Care Center, which Southcentral Foundation owns and operates, more than 35,000 clients have been assigned to a primary care physician. In order to help ensure prompt care, these physicians reserve half of their workdays for same-day appointments. But the foundation also faces the challenge of serving thousands of patients who live in extremely remote locations.

“When I say remote, I mean remote,” says Jason Hamlett, IT systems manager at Southcentral Foundation. “Some of them have no running water; some can be reached only by a plane or a boat.” Because of the distances involved, many rural patients do not have immediate, physical access to

a doctor. The challenge of serving rural patients increases all the time, as the foundation continues to add more and more rural locations.

Meanwhile, the foundation manages all the Indian Health Service programs on the Alaska Native Health Campus in Anchorage. The campus spans miles, with several buildings that include the Anchorage Native Primary Care Center and a surgical hospital that operates under separate management. Although the hospital and the foundation share some patient information, they must

adhere to the strict privacy requirements of the Health Insurance Portability and Accountability Act (HIPAA).

Last year the IT staff started looking for a wireless network solution that would address its many needs: enabling doctors to evaluate patients remotely, allowing healthcare workers at the Anchorage campus to maintain voice-over-IP connections even as they roamed among buildings, safeguarding the security of patient information, and accelerating the process of deploying new network equipment—especially in rural locations with limited IT staff.

Network Solution

After evaluating several wireless network equipment providers, Hamlett and the IT team at Southcentral chose a Unified Wireless Network from Cisco® to provide voice and data services at the main Anchorage campus and connect 30 remote sites with centralized management and advanced security features. The new network was composed of a 4400 Series Wireless Controller and Wireless Control System (WCS) software on the main campus, with Cisco Aironet® 1100 Series and 1200 Series Access Points installed throughout both the main campus and the far-flung satellite offices. The Cisco WCS automatically associated each new access point with the controller, eliminating manual configuration and saving many hours in maintenance time. Location features within the WCS also let the IT staff detect any unauthorized access points on the network.

Southcentral already owned some 1200 Series access points in a standalone mode, which the team upgraded into a controller-based architecture, using a free software upgrade tool and adding WLAN controllers. This helped protect the organization's investments and reduce capital costs.

“With the controller-based architecture, we could leverage our existing WLAN,” Hamlett says.

In addition to centralized management and rapid deployment of all of the access points, the Cisco Unified Wireless Network allowed for separate Service Set Identifiers (SSIDs) within the wireless network. This feature enabled the IT staff to configure different access policies for several user categories, prioritizing them according to bandwidth requirements and importance. Voice traffic received top priority, because it is less forgiving of network interruptions than data traffic.

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—Jason Hamlett, IT Systems Manager at Southcentral Foundation

Southcentral also created three separate SSIDs for corporate and billing traffic, patient medical information, and guest traffic. The corporate network requires a certificate-based login. Guests (including visitors as well as residents of the foundation's long-term treatment programs) are limited to basic Internet access. By helping ensure that guests could not inadvertently access confidential medical information, and by separating patient data from corporate data, the solution helped achieve HIPAA compliance.

For the voice network, Southcentral deployed Cisco Unified Communications Manager call-processing software along with the Cisco Unified Wireless IP Phone 7920 and 7921G. Medical staff can maintain a voice connection even as they roam about the campus—and roaming about the campus is a vital part of their jobs. “We call it the ‘quarterback position,’” Hamlett says. “Medical and dental staff members will follow the patients from station to station to see them

through the healthcare process. Like quarterbacks, they follow the action on the field, and the ability to roam among access points is important.”

On the data side, Southcentral has deployed networked medical carts to many of its remote locations. Medical staff members at the foundation’s rural sites can use these carts to perform tests such as electrocardiograms or otoscopic images; then they immediately send the data, wirelessly, to the appropriate specialist on the main campus.

“All the data is transmitted to a main file at the hospital,” Hamlett says. This results in better patient care because medical staff members do not have to waste time searching for patient files.

Business Results

The Cisco Unified Wireless IP phones, combined with the networked medical carts, have given the staff a way to stay connected with each other—and with their patients. Most importantly, a doctor can examine patient data from a remote site and determine whether that patient needs further, in-person treatment by a specialist. The Cisco Unified Wireless IP phones let doctors discuss that patient data from anywhere on campus—without the monthly usage charge of a cellular network. “On the clinical side there’s a lot more connection going on among the medical staff, between the remote sites and with the hospital,” Hamlett says.

Centralized management has proven invaluable for a wireless network that is scattered throughout the biggest state in the nation, Hamlett says. He also stresses the foundation’s ability to deploy access points easily and rapidly. This is key because the foundation adds new remote service sites every year.

PRODUCT LIST

Cisco Unified Wireless Network

- Cisco 4400 Series Wireless LAN Controllers
- Cisco Aironet 1100 Series Access Points
- Cisco Aironet 1200 Series Access Points
- Cisco Wireless Control System

Cisco Unified Communications

- Cisco Unified Wireless IP Phone 7920 and 7921G
- Cisco Unified Communications Manager

“It used to take two days to set up a new site, but now, after initial cabling, it takes about an hour,” he says. “And with the certificate-based LWAPP [Lightweight Access Point Protocol] system, I know we can plug an access point in anywhere and know that it is secure.”

The secure nature of the network allows the foundation to comply with federal patient privacy rules. For example, the hospital might need to share an X-ray or an electrocardiogram result with

foundation doctors. Although sharing medical information is legal, HIPAA regulations forbid organizations from sharing patient billing information. Segmented SSIDs let the medical staff share vital information securely without compromising the security of billing information. And the IT staff can easily demonstrate that compliance, using the built-in reporting tools of the WCS.

For patients, the wireless network improves not only their quality of care but also their quality of life—providing Internet access in residential care facilities or during lengthy medical treatments such as kidney dialysis.

Next Steps

In addition to using the location features of the WCS to find and disable unauthorized access points, Southcentral is considering the use of a Cisco 2700 Series Wireless Location Appliance to track expensive mobile assets, via the use of RFID tags. Such assets could include intravenous

medicine pumps as well as the medical carts. The location appliance may also be used to track at-risk patients, through the use of medical bracelets embedded with RFID tags.

For More Information

To find out more about the Cisco Unified Wireless Network solution, visit:

<http://www.cisco.com/go/unifiedwireless>. For more information on solutions for healthcare please visit <http://www.cisco.com/go/healthcare>

To find out more information about Southcentral Foundation, visit:

<http://www.southcentralfoundation.com/>.



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