



CUSTOMER SUCCESS STORY

MOBILE HOSPITAL STAFF IMPROVES PRODUCTIVITY AND PATIENT CARE WITH CISCO WIRELESS SOLUTION

EXECUTIVE SUMMARY

CUSTOMER

- Overlake Hospital Medical Center

INDUSTRY

- Healthcare

BUSINESS CHALLENGE

- Provide mobile access to medical and administrative applications throughout the hospital.
- Help ensure maximum security of patient information to conform with strict government guidelines.
- Provide easy management of wireless network operation without requiring additional administrative resources.

NETWORK SOLUTION

- The Cisco WLAN solution provides ubiquitous mobile network access for healthcare providers, administrative staff, and visitors.
- Integrated security offers advanced authentication and encryption to safeguard sensitive patient data.
- A comprehensive Cisco network, together with advanced management tools, provides centralized, cost-effective administration and helps ensure reliability.

BUSINESS VALUE

- Real-time access to patient records, drug information, and medical reports help ensure delivery of appropriate, timely patient care.
- Streamlined administrative processes improve staff productivity and reduce errors.
- Advanced voice applications facilitate staff mobility and collaboration.

In an ongoing effort to improve patient care, Overlake Hospital Medical Center is deploying an extensive Cisco wireless LAN (WLAN) solution. As part of Overlake's comprehensive Cisco network infrastructure, the Cisco WLAN enables caregivers and administrators to securely access a host of information resources anywhere at the hospital, improving productivity and streamlining administrative processes.

CUSTOMER BACKGROUND

Overlake Hospital Medical Center, located in Bellevue Washington, is a not-for-profit healthcare facility offering a full range of advanced medical services to the Puget Sound region. Offering one of the top 100 heart programs in the nation, Overlake is distinguished for its cardiac services and its award-winning surgical departments. With 257 beds, Overlake employs more than 2200 people and has more than 800 physicians on staff.

BUSINESS CHALLENGE

Like most healthcare facilities, Overlake Hospital Medical Center is continually seeking new technologies that enable doctors, nurses, and support staff to better serve patients. Some of Overlake's recent IT initiatives have included online access to clinical documentation for nursing staff, bedside administration of medication, and physician access to medical records via portable devices. These applications promise to extend the reach of information to healthcare providers, but they require a flexible, mobile infrastructure to be effective.

"When it came to implementing a wireless LAN at Overlake, the decision was fairly straightforward," explains Kent Hargrave, CIO at Overlake Hospital Medical Center. "Our strategic mobile healthcare initiatives would have had difficulty succeeding without a robust wireless network in place."

To support the new applications, the WLAN infrastructure at Overlake would have to offer industry-leading reliability, security, availability, and manageability.

Security was essential—the U.S. Health Insurance Portability and Accounting Act (HIPAA) outlines stringent requirements for the protection of patient information. The network infrastructure would have to allow only authorized users to access patient records, and help ensure that patient information was transmitted securely. The wireless infrastructure in particular would have to provide tight access control, advanced authentication techniques, and several encryption tools for enhanced privacy. And it would have to support a wide range of medical client devices with different security capabilities, such as PDAs, laptops, and tablet computers.

With a relatively small IT staff, Overlake could not afford to dedicate resources to the exclusive management of a wireless infrastructure. The WLAN solution would have to be easy to manage and maintain on a day-to-day basis, without constant attention by network administrators.

Ubiquitous access was another priority for Overlake's healthcare initiative. Doctors, nurses, and support staff needed the ability to continuously access and use medical applications as they moved throughout the facility. Although the hospital's previous wireless systems could offer standalone "pockets" of coverage, the products did not act as a unified system. Transparent roaming emerged as one of the most important criteria for Overlake as the hospital sought an optimal, standards-based 802.11 WLAN solution.

Finally, the system would have to be extremely reliable. With lives depending on the network, the hospital could not afford to have it go down.

NETWORK SOLUTION

After evaluating several potential solutions, Overlake standardized on a centralized WLAN solution from Cisco Systems®, consisting of Cisco Aironet® access points and centralized WLAN controllers, managed via Cisco Wireless Control System (WCS) Software. The Cisco solution appealed to Overlake because it enabled smooth roaming across all access points, while providing a mechanism for centralized creation and enforcement of security policies across the entire hospital. The hospital could easily implement Wired Equivalent Privacy (WEP) to provide basic data protection, and is migrating to the more robust 802.11i security specification via a simple software upgrade. The Cisco solution also let Overlake suppress the broadcast of WLAN service set identifiers (SSIDs) to prevent unauthorized users from accessing its wireless resources. Together, the security features help Overlake to maintain privacy in accordance with basic HIPAA guidelines.

“Cisco is the only vendor to integrate highly accurate, highly scalable location services into their wireless LAN infrastructure. This helps to maximize our wireless investment while improving our operational efficiencies.”

—Kent Hargrave, CIO, Overlake Hospital Medical Center

To further ease management, the Cisco WLAN system provided built-in RF intelligence, whereby access point channels, load, and coverage area dynamically adjust in real time, based on changing RF conditions. Overlake does not require full-time dedicated resources for wireless management.

“With the Cisco WLAN, we require only a fraction of a full-time equivalent to manage our wireless network,” said Kent Hargrave. “Our network infrastructure manager checks in occasionally to make sure things are running smoothly.”

The wireless network connects to Overlake's comprehensive Cisco network, which features a Gigabit Ethernet backbone and several Cisco routers and Cisco Catalyst® switches. Cisco firewalls and VPN concentrators provide additional security for the entire network infrastructure.

Overlake aggressively launched its mobile initiative, delivering wireless services across nine departments, including emergency services. By the end of 2004, wireless access was available throughout 95 percent of the hospital, including waiting rooms, labs, cafeterias, pharmacies, the radiology department, and other specialized departments. The pervasive access to network resources is rapidly transforming healthcare delivery.

For example, many nurses are now using voice over WLAN (VoWLAN) handsets to communicate with patients, their families, and other staff members. Wireless voice has dramatically improved the nurses' productivity, eliminating the need to return to their desks to make calls and saving an estimated 15–20 minutes per shift per nurse.

Overlake has also deployed tablet computers with integrated healthcare software to provide mobile access to patient records, hospital pharmacies, and ordering systems, creating a “portable office.” Five new wireless carts equipped with Meditech software support bedside registration, improving the speed and accuracy of patient registration. Wireless coverage is also available to patients and visitors in common areas such as waiting rooms.

Wireless technology is also proving to be an effective way to track key mobile assets and resources. For example, specialists carrying VoWLAN handsets or PDAs can be rapidly located anywhere in the hospital's multicampus facility. Overlake is exploring ways of similarly tracking patients using active RFID tags on wheelchairs in conjunction with the Cisco Wireless Location Appliance.

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BUSINESS VALUE

WLANs have proven indispensable to Overlake's primary objective of delivering outstanding patient care. The Cisco WLAN solution lets Overlake's healthcare professionals spend less time on administrative tasks such as retrieving records, freeing up more time to spend with patients. Streamlined processes are particularly useful in emergency care facilities, where rapid patient processing is essential.

Real-time access to patient records, drug information, and medical reports also helps Overlake ensure that appropriate, responsive care is delivered. And the wireless voice applications allow nurses to more easily consult with a patient's family or confer with specialists to provide superior care from the patient's bedside.

NEXT STEPS

The Cisco WLAN solution not only meets Overlake's current needs, but is also enabling the hospital to deploy new applications that take advantage of the unique capabilities of mobility. For example, Overlake is one of the first medical centers to explore how 802.11-based location tracking can be used to track high-value assets. Loss and theft of wheelchairs, IV pumps, and other equipment is a major problem at many healthcare facilities. With integrated device tracking, Overlake staff can better track these assets throughout their facilities, increasing operational efficiency and reducing expenses.

Overlake is also using its WLAN to continue to automate many of the manual procedures involved in daily patient administration. By migrating key tasks to the mobile network, such as medication administration and patient registration, the hospital can avoid transcription errors and can streamline its processes.

"With the right networking infrastructure, mobility can be your best friend," concludes Hargrave. "In some instances, it can even save a life. We've been very pleased with the benefits that mobility has brought to our healthcare facility, and impressed with the breadth of features and WLAN products offered by Cisco."

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