Company Profile

Cisco helps Sharp HealthCare System use wireless to enhance patient care

Background

Sharp HealthCare is an integrated regional health-care delivery system based in San Diego County, California, with a history of providing excellent health care that dates back to 1947. With 1,850 beds, some 2,300 physicians on medical staffs, an additional 1,300 physicians in medical groups, and more than 11,000 employees, Sharp HealthCare provides a full spectrum of health-care facilities and services to a population of more than three million San Diego county residents.

As part of an ongoing commitment toward enhancing the quality of treatment and services provided to a growing metropolitan community, Sharp HealthCare has begun a system-wide migration to wireless communications.

The Challenge

"Our wireless strategy is particularly critical to our electronic patient record initiative because it allows us to use mobile devices that caregivers in patient care areas can readily adopt," said William Spooner, Sharp HealthCare's CIO. "The actual and potential uses of wireless technology reinforce Sharp HealthCare's commitment toward providing the best possible patient experience."

"The installation of wireless at Sharp medical facilities is primarily driven by two essential factors, according to Mark Wiesenberg, Sharp's director of network services. "First is the deployment of our EMR, or Electronic Medical Record, system. We wanted to make it as effective as possible for physicians, nurses and other clinicians to interact with patients, resulting in more efficient bedside care," he said.

The EMR can be accessed wirelessly through computers mounted on rolling carts situated throughout each of the seven hospitals. Clinicians can roll a cart along on patient visits and, from a patient's bedside, quickly access patient admission data, health history, lab results, and other pertinent data. In addition, clinicians can update the patient's record, order tests and issue pharmaceutical prescriptions over this application before moving on to the next bed. Everything is recorded in the hospital's main databank through the wireless network.

Wiesenberg added, "The mobility that the wirelessly enabled EMR provides our staff is priceless because it not only makes the bedside visit more convenient and efficient for the caregiver but enhances the visit from the patient's perspective as well, since the clinician remains at the bedside throughout the visit."

In addition, the move to wireless capitalized on the popularity among the clinical staff of handheld units. "Many of our physicians utilize handheld wireless units in other venues, and they see our Cisco wireless network as a way of further enabling them when going about their business in our hospitals in the future," he said.

The second essential factor in setting up a wireless network stems from the limitations inherent in cabling. The installation of cables almost invariably entails drilling into walls and snaking through ceilings, processes that can be annoying in an office but highly hazardous in a clinical environment.

"Just imagine the amount of dust and other particulate material that is stirred up with cabling. This can be quite harmful to patients in HIV or chemotherapy areas where susceptibility to infection is exceptionally high. A wireless system is quick, clean and entails none of these dangers," Wiesenberg said. "Moreover, the network can be added to just as easily and safely as we expand or realign a particular floor."

One of the most critical considerations in the decision to establish a wireless LAN (WLAN) was security. The federal government has recently issued new standards for patient confidentiality under the Health Insurance Portability and Accountability Act. "This has a direct bearing on the wireless transfer of data, and we needed absolute certainty that we were not going to put patient records in jeopardy with our wireless system," he said.

The Solution

Sharp has selected Cisco Aironet® 350 Series technology for installation in their four acute-care hospitals and three specialty hospitals.

The Cisco Aironet 350 Series supports the standard wired equivalent privacy (WEP) security architecture, with both 40- and 128-bit encryption keys, and features a centralized security architecture based on the IEEE 802.1x standard for WLANs. 802.1x includes mutual authentication, session-based encryption, centralized user administration, and extensible authentication support. All Cisco client adapters support an 802.1x authentication administration, and extensible authentication support. All Cisco client adapters support an 802.1x authentication type called EAP-Cisco Wireless—also known as LEAP—that married strong security with easy administration.

Sharp is "now moving from WEP to LEAP," Wiesenberg said. "It was very fortunate that Cisco had developed a reliable solution just when we needed it."

"Just imagine the amount of dust and other particulate material that is stirred up with cabling. This can be quite harmful to patients in HIV or chemotherapy areas where susceptibility to infection is exceptionally high. A wireless system is quick, clean and entails none of these dangers. Moreover, the network can be added to just as easily and safely as we expand or realign a particular floor."

—Mark Wiesenberg

Director of Network Services

Sharp HealthCare

When installation is complete, each of Sharp's seven hospitals will essentially have its own WLAN, facilitated by Cisco Aironet 350 Series access points strategically positioned on all floors of each building. Computers in the rolling carts and at specified desktops will be equipped with Cisco Aironet 350 Series PC client adapters.

Cisco Aironet 350 Series access points and client adapters are based on direct sequence spread spectrum technology. They operate in the 2.4 GHz band and provide an Ethernet-like data rate of up to 11 megabits per second (Mbps). They are IEEE 802.11b compliant and Wi-Fi™ certified by the Wireless Ethernet Compatibility Alliance.

The choice of Cisco Aironet for wireless was based in part on satisfaction with existing Cisco product. Sharp had already invested $4 million in an installed base of Cisco routers, switches, AS-5300s, VPN-3030s, LocalDirector software, network management, ACS-2.6, and intrusion detection. Selecting the Cisco Aironet 350 Series for wireless would provide vital compatibility to the hospitals infrastructure.

"Compatibility is very important, but we took nothing for granted. We evaluated other products, too, before concluding that the Cisco Aironet line was the best fit for our environment," Wiesenberg said. "Security, of course, was a major consideration."

Power to the Points

The in-line power capability inherent in the Cisco Aironet 350 Series also is paying dividends for Sharp. Cisco Aironet 350 Series access points can be powered remotely across the same cable that is used for Ethernet, using a Cisco technology-powered switch; a powered patch panel; or a small, inline device called a power injector. Only one Category 5 copper cable has to be run to the Cisco Aironet 350 Series access points in order to remotely power them.

In Sharp HealthCare hospitals, power is being supplied to access points by power injectors. "We are saving a substantial amount of money by using these power injectors in conjunction with the in-line power potential of the access points for these installations," Wiesenberg said.

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems Europe
11, Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: 65 317 7777
Fax: 65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the

Cisco Web site at www.cisco.com/go/offices

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe