

IT at the Heart of a New Hospital

SwedishAmerican Health System builds a network infrastructure for wireless, VoIP, redundancy, and security.

EXECUTIVE SUMMARY

SWEDISHAMERICAN HEALTH SYSTEM

- Community hospital
- Rockford, Ill

BUSINESS CHALLENGE

- Build cutting-edge communications technology into a new heart hospital
- Gradually transition infrastructure into older facilities
- Provide network for advanced technologies and applications

SOLUTION

- Design Cisco Medical-Grade Network into new facility for wireless, VoIP, redundancy, and security

BUSINESS RESULTS

- Medical devices are linked to the network to transmit patients' vital signs
- A redundant data center acts as a disaster recovery system
- Cart-based computers to access data on the network and different clinical applications
- Mobile voice communications allow caregivers to keep in touch as they go about their duties

Challenge: Build cutting-edge communications into a new heart hospital

The existing facilities at SwedishAmerican Health System included a 10-year-old IT infrastructure that could not handle the transfer of large images from the PACS system. The network also was not robust enough to incorporate new technologies. Vice-President and Chief Information Officer Phil Wasson explains, "We had three years of PACS images that were stored on our network, but had difficulty transmitting a PACS study from one point on the network to the other, even in the same building."



So, when they planned a new heart hospital, they designed the network infrastructure right in to it. The Heart Hospital would be the second in the SwedishAmerican delivery system, which also includes 14 clinics—all in Rockford, Ill.

With a building cost for the new hospital in excess of \$45 million, SwedishAmerican wanted to make sure they did everything right. Wasson notes the importance by saying, "Health care is a different kind of business. It's 24-hours, seven days a week. We're dealing with lives here. We're dealing with people who realize that the key to making the best outcome decision is having the best information going in. So information has to be always available."

To expand its quality of care and stay abreast of healthcare technology developments and regulations, SwedishAmerican needed a robust, reliable foundation that enabled streamlined data access and wireless communications. Plus, they wanted to be able to eventually extend the new Heart Hospital infrastructure into their older facilities. Wasson says, "We visualized a network infrastructure that would ensure redundancy and security as well as provide switching capability

to support moving PACS images across the network, connecting monitors to the network, and implementing VoIP and wireless solutions.”

Solution: A Cisco Medical-Grade Network

Few CIOs get a chance to plan for IT infrastructure before a hospital is built. So Phil Wasson and building architects took full advantage of the opportunity at the organization’s new Heart Hospital.

Building plans included a wireless network throughout the 94-bed facility that features Voice over Internet Protocol (VoIP) for communication. Wasson says, “Our goal for the heart hospital really was a comprehensive medical-grade network that would support any application that could be delivered to any location within the confines of that building. We had to consider wireless and all IP applications. We had to consider how were we going to engage monitoring systems within that. So everything was consolidating and converging around a single network infrastructure—and we wanted to make it as flexible as possible.”

The new technology includes a wireless network that staff uses to access the data network and communicate with one another. Medical devices are linked to the network to transmit patients’ vital signs. A redundant data center was built into the basement of the new facility as a disaster recovery system.

Throughout the hospital design process architects worked with the medical and IT staffs to make sure they were getting what they wanted, says Dennis Kaiser, principal architect for the project at Boston-based Perkins + Will.

Using VoIP and integrating to one network for all applications was the biggest technological and design issue the facility faced, Wasson says. “Everything was consolidated around a single network infrastructure, and we wanted to make it as flexible as possible,” he says. “We wanted a single IP-based infrastructure that could support all the convergence now and well into the future.”

“Clearly the creation of the Heart Hospital is our major commitment to that environment of care for everyone that comes in the door—with the theory that the better the environment of care, the better the outcome.”

—Bill Gorski, M.D., President and CEO, SwedishAmerican Health System

SwedishAmerican executives wanted a wireless network so clinicians could move around anywhere in the hospital and still communicate with one another, be it with a computer or phone. “In health care nurses don’t sit at a desk, they need tools that are more wireless,” Wasson says. While VoIP is one of the main applications, clinicians are also using cart-based computers to access data on the network and different clinical applications, he adds. Nurses also have access to computers at stations outside patient rooms. Patients’ vital signs are streamed wirelessly from the rooms to monitors in the nursing pods.

The new hospital aims to be patient friendly with private rooms and comfortable places for family to stay, with wireless Internet access for patients and their families. The facility also uses technology to assist patients and family in finding their way around and educating them about heart disease. This is all designed to help the patient feel more at home, says William R. Gorski, M.D., president and CEO at SwedishAmerican Health System. “SwedishAmerican is a very well-rounded institution

which provides all different sorts of care as a community-based hospital.” The wireless network now extends across the entire SwedishAmerican campus and also enables patients and family members to use the Internet to check e-mail or work from the hospital, Gorski says.

Result: A platform for the future

The new Cisco Medical-Grade Network has provided a robust, high-availability infrastructure that supports leading-edge medical technologies and provides a platform for future uses. Wasson describes the new network as, “an opportunity to build something new, exciting, and different for patients—a single IP-based network infrastructure that could support all the convergence we were seeing now and well into the future.” After 13,000 hours of work on the network Wasson says they now have, “a voice infrastructure that could be well-managed and well-secured—just another extension of the IP-network, integrated with the core switches, integrated with the management technologies and security technologies that we were deploying.”

Dr. Gorski described the involvement of the Cisco team this way, “They have been invested and engaged in what we’re doing and in attempting to make it the very best for SwedishAmerican, and that’s been clear.” The result is equally clear. Dr. Gorski says, “We now have a facility where we can let the exceptional quality caregivers we have really reach their true potential.”

SwedishAmerican also is using the Heart Hospital as an incubator for new technologies that could be used in the delivery system’s other facilities, Wasson says. One experiment was wiring the hospital with CAT 6 cable to enable larger amounts of data to be transmitted over the network. The Heart Hospital is also considering different video systems and other high-bandwidth applications that can be deployed on the new network.

For More Information

To find out more about Cisco Medical-Grade Networks, visit www.cisco.com/web/strategy/healthcare/all_medical-grade.html



Americas 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: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

©2007 Cisco Systems, Inc. All rights reserved. CCVP, the Cisco logo, and the Cisco Square Bridge logo are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCIE, CCIIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networking Academy, Network Registrar, Packet, PIX, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0701R)