

## Medical Center Supports Network-Based Care



Chilton Hospital builds infrastructure for the future with integrated wired and wireless solutions.

### EXECUTIVE SUMMARY

**Customer Name:** Chilton Hospital



**Industry:** Healthcare

**Location:** Pompton Plains, New Jersey, United States

**Number of Employees:** 1450

**Partner:** Presidio

#### BUSINESS CHALLENGE

- Deliver an expanding roster of network-based clinical applications to a growing community of users using a wide range of devices
- Ensure the reliability, availability, and security of a campus-wide, combined wired and wireless network

#### NETWORK SOLUTION

- Cisco switches for LAN, campus core, and distribution networks
- Cisco wireless controllers and authentication and identity services hardware appliances

#### BUSINESS RESULTS

- Robust network availability and reliability
- Enhanced network security and centralized manageability
- Improved clinician efficiency and satisfaction; consistent, high-quality care

### Business Challenge

Since its opening with 50 beds in 1954, the story of Chilton Hospital in northwestern New Jersey has been punctuated by a few significant growth spurts. The addition of a second facility in 1971 was followed by a consolidation and further expansion of its two buildings in 1984. The most recent leap forward - a \$24 million renovation and modernization project - got underway in 2012.

Now a 260-bed acute care facility staffed by more than 650 physicians and 1450 employees in total, the hospital treats some 160,000 patients each year. It is the center of the Chilton Health Network, which delivers health services to more than 30 communities across 350 square miles in its primary and secondary service areas. The network offers a wide range of health care services, including laboratory testing, physical and occupational therapy, and physician partnerships in primary care, internal medicine, breast and colorectal surgery, cardiology, and orthopedics.

For Chief Information Officer Mark Lederman and his staff, modernizing Chilton meant overhauling the hospital's entire network infrastructure. Mobility was paramount. "With an expanding user community and our ongoing deployment of more and more new clinical applications, we knew we would need a much more robust solution on the wireless side than the one we had," says Lederman.

"Nobody wants to be tethered to a desktop anymore."

“Our nurses were already using computers on wheels to do most of their bedside work, from recording the medications they administered to updating patients’ health records. In fact, the nurses now do **all** their documentation online. And a growing number of physicians are moving in the same direction.”

Last year, for example, the hospital introduced a computerized physician order entry system (CPOE), and already many of Chilton’s doctors are putting all their orders online, for everything from medications to lab tests and radiation studies. Still to come are more extensive documentation applications for the doctors, including voice dictation from wireless workstations.

**“By serving our clinical staff better, the network enables them to deliver consistent, high-quality care to our patients.”**

— Mark Lederman, CIO, Chilton Hospital

Lederman and his colleagues knew the hospital’s old wireless network would not stand up to the new demands. “We already had issues with coverage and roaming,” says Morgan Geoghegan, senior network engineer at Chilton. “Given the older networking protocols of our wireless adapters, something as simple as the microwave ovens used to heat patients’ meals in the wards would create interference and cause drops in our wireless connections.”

But, while mobility was the hallmark of many of the improvements they had in mind, the Chilton IT staff knew they had work to do on the wired side of the network as well. The switches in the core did not provide the power over Ethernet (PoE) that would be needed for a planned upgrade of the hospital’s phone system to voice over IP (VoIP), nor an adequate level of security or centralized management capabilities. Desktop connectivity was limited to 10 megabits, nowhere near the bandwidth needed for telepresence and other new services that were under consideration. The moment was right to modernize.

## Network Solution

Meraz Nasir, Chilton’s director of technology services infrastructure, worked with IT and managed services provider Presidio, a Cisco® Gold Partner, to redesign and rebuild the whole network. They started with the core.

Because redundancy was important for ensuring the network’s availability, they installed twin Cisco Catalyst® 6509 16-port switches, each with a 10-Gigabit Ethernet base module, configured as a virtual switching system. If one core fails, the other provides sub-second failover to prevent any loss of connectivity to the 11 closets that make up the wired network. To provide highly secure user authentication on both the wired and the wireless sides, Chilton deployed twin Cisco Identity Services Engine (ISE) 3315 hardware appliances in the core as well.

In the wiring closets, the IT team stacked from two to eight Cisco Catalyst 3750-X 24-port or 48-port switches, each with a PoE base and an optional 10-Gigabit network module linking it to the core. Offering both generous desktop bandwidth and high-volume wireless access points, these versatile scalable switches enhance user productivity and help enable a range of rich services, including VoIP and video. Intent on a complete overhaul, Chilton’s IT team also updated the entire network fabric with 10-Gigabit-rated fiber from end to end and new category 6 cabling and patch panels, all color-coded to make it easy to troubleshoot service desk calls.

The wired component of Chilton’s network was based on Cisco equipment both before and after the overhaul. On the wireless side, Cisco was not the incumbent technology provider. But Chilton’s IT team decided to go with Cisco wireless solutions for the future. “It just made sense to have one vendor for both wired and wireless,” says CIO Mark Lederman. “As a long-time Cisco customer on the wired side, we were familiar with the company’s

reputation for excellent service. We also knew we could readily get support for our Cisco equipment from other providers, including our IT partner, Presidio.”

To achieve the same redundancy on the wireless side as they had in the network core, Lederman and his team deployed two Cisco 5508 Wireless Controllers. Featuring Cisco CleanAir™ technology to monitor and mitigate interference in real time, these controllers centralize control and help ensure a high-quality mobile experience with efficient roaming for a wide range of mobile devices, including the tablets that many of Chilton’s physicians are adopting as their bring-your-own-device (BYOD) preference. On the wards, Chilton deployed a fleet of new mobile workstation carts with updated adapters and bandwidths four to six times higher than the old carts.

## Business Results

“Performance. Security. Manageability. Those were the goals,” says Lederman, “and we’ve achieved all three.”

For example, as he explains, physicians can now access the network from anywhere, using a VMware view virtual desktop. They can use any secure device, including their own BYOD tablet or smartphone, to access and augment their patients’ records from anywhere. Visiting a patient’s room, they can not only consult the patient’s record but also access, present, and explain a lab result or radiology image in order to discuss diagnoses and treatment options.

For Chilton’s IT team, the overhauled network is delivering the security and manageability they were looking for. Going well beyond user authentication, Cisco ISE gives them logging and auditing capabilities they need to meet the privacy requirements of today’s healthcare environment. The security provided by ISE has also allowed Chilton Hospital to extend network services to visitors and patients, which they and their families appreciate.

### PRODUCT LIST

- Cisco Catalyst 3750-X 24-port and 48-port switches with a Power over Ethernet (PoE) base and 10-Gigabit network modules
- Cisco 6500 Catalyst 16-port switches with 10-Gigabit Ethernet base modules
- Cisco 3315 Identity Services Engine (ISE) hardware appliances
- Cisco 5508 Wireless Controllers with CleanAir technology
- Cisco SMARTnet® Service

And the best measure of the network’s improved performance? Chilton’s nurses and physicians give it rave reviews, saying it works superbly (reliability) all the time (availability). “By serving our clinical staff better, the network enables them to deliver consistent, high-quality care to our patients,” says Lederman.

## For More Information

To find out more about Cisco Catalyst switches, go to:

<http://www.cisco.com/go/switching>.

To find out more about Cisco Identity Services Engine, go to:

<http://www.cisco.com/go/ise>.



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