Hospital Pioneers Wi-Fi Patient Apps with Cisco BYOD Solution

Miami Children's Hospital uses wireless solutions to innovate patient care and transform the hospital experience.

EXECUTIVE SUMMARY

Customer name: Miami Children's Hospital

Industry: Healthcare

Location: 289-bed hospital in Miami-Dade County, 9 outpatient centers in Miami-Dade, Broward, and Palm Beach counties

Medical Staff: 650

Number of employees: 3400

Business Challenges

· Support clinicians by extending wireless BYOD access to EMRs
· Create supportive, more engaging experience for patients and families
· Advance healthcare by integrating unprecedented transparency and information into all aspects of care

Network Solution

· Cisco Unified Access delivers high-speed access, managed by Cisco Prime Infrastructure
· Cisco Mobility Services Engine with Connected Mobile Experiences software reports mobile device location
· Cisco ASA 5500 Series firewalls secure Unified Access network

Results

· Enhancing healthcare by expanding clinician access to patient information
· Enriching patient and visitor experience through wireless Fit4KidsCare navigation apps
· Empowering patients and families by incorporating information and educational tools into all aspects of medical care

Business Challenges

Miami Children's Hospital (MCH) is rated among the top children's hospitals in the nation. For the third consecutive year, MCH was mentioned in all 10 pediatric subspecialty categories by the *U.S. News & World Report* 2013-14 "Best Children's Hospital" rankings.

Always on the forefront of healthcare innovation, MCH needed to upgrade and expand its existing wireless network to support two objectives. Ed Martinez, senior vice president and chief information officer at Miami Children's Hospital, says, "Our critical short-term goal was to support bring-your-own-device (BYOD) initiatives for our clinicians, extending access to patient electronic medical records (EMRs) from the moment they walk through the front door.

"The second goal was to enhance the patient care experience through high-speed guest Wi-Fi access and our unique Fit4KidsCare apps," says Martinez. His strategy was to use wireless technology to engage patients and guests with gaming, navigation, and education apps. Fit4KidsCare was originally launched to relay emergency room and urgent care wait times, give driving directions to the main hospital and nine clinic locations, and provide an online physician directory.

> "MCH is known for being advanced and innovative in the way we provide care to patients, and our Cisco infrastructure and wireless BYOD solutions play a big part."

Ed Martinez
Senior Vice President and Chief Information Officer
Miami Children's Hospital

Martinez continues, "Navigating through our large hospital complex can be challenging. We developed a wayfinding navigation tool for Fit4KidsCare that helps people find their way around using interactive maps and directions. But we needed more wireless bandwidth and coverage to support both goals."

Network Solution

A greatly expanded and upgraded Cisco® 802.11n Wi-Fi network with the Cisco Connected Mobile Experiences solution provides the support for MCH's clinician BYOD and guest mobile services.

Cisco Aironet® 3600 Series Access Points (APs) and Cisco Aironet 3500 Series APs located throughout the complex are connected to a Cisco Wireless Services Module 2 (WiSM2) running on a Cisco Catalyst® 6500 Series switch. The scalable controller can support up to 1000 APs and 15,000 clients, extending the same policies and security from the wired network core to the wireless edge. The wireless Cisco Unified Access deployment is centrally managed with Cisco Prime Infrastructure.

The Cisco Mobility Services Engine (MSE) with Cisco Connected Mobile Experiences software in the data center computes user location in real time from hundreds of Wi-Fi access points. Fit4KidsCare uses the data to detect users' locations and give them turn-by-turn directions. MSE also employs location analytics to monitor traffic patterns to better understand ways to improve productivity and convenience for both employees and guests.

To provide the highest quality mobile reception, all wireless components feature embedded Cisco CleanAir® technology, which has the unique ability to detect and locate radio frequency interference and automatically find alternate transmission paths. "With our small IT staff, CleanAir's ability to know in advance if something is not working and to automatically fix problems and optimize wireless coverage was critical to our deployment strategy," Martinez says.

To maintain strong security, Martinez segments corporate, guest, and test networks using VLANs on Cisco Catalyst 6500 Series switches and secures them with Cisco ASA 5500 Series firewalls. Cisco VLANs and firewalls are part of a comprehensive, multilayer enterprise security strategy. Gold-Certified Partner Presidio provided all the needed Cisco wireless and mobility networking equipment.

MCH had previously upgraded its data center with Cisco Nexus® switches and Cisco Unified Computing System™ (UCS®) blade servers to support EMR, desktop virtualization infrastructure (VDI), and disaster recovery initiatives. Martinez knew this solid network foundation would easily support the needs of the new high-speed wireless services.

Business Results

Martinez believes that MCH's Cisco Wireless and Connected Mobile Experiences solutions help the hospital's efforts to achieve its business goals of enriching the patient and family hospital experience, improving patient care, and advancing patient education and empowerment.

Enhancing the Patient Experience

MCH is the first hospital in the country to launch a GPS-like app for Apple iOS devices that uses Cisco Connected Mobile Experiences. Thanks to the location-based services functionality in Cisco Connected Mobile Experiences, Fit4KidsCare now offers patients and their families a convenient way to navigate the hospital

complex, order room service from the hospital cafeteria, buy items from the gift shop, and play interactive games.

Improving Patient Care

Fit4KidsCare also helps the hospital enhance patient safety. Martinez says, "We operate on the 'three rights': right person, right medication, right dosage. The navigation app helps us ensure that the clinician is actually in the right place when dispensing medication." It also enables nursing stations to track patients as they travel through the hospital for radiology, physical therapy, and other appointments and makes sure that things are moving along as expected.

Differentiating Services and Heightening Brand Awareness

"MCH is known for being advanced and innovative in the way we provide care to patients, and our Cisco infrastructure and wireless BYOD solutions play a big part," says Martinez. Its dedication to taking patient care to the next level using wireless and mobile technologies has earned MCH a number of accolades and increasing consumer awareness in an internationally competitive industry.

Advancing Patient Empowerment

More exciting things are coming. The IT staff is developing a series of unique patient empowerment apps that will break new ground by integrating unprecedented transparency and information into all aspects of patient care.

Future tools will include more interactive components layered on top of the Fit4KidsCare wayfinding app, such as explaining the functions of hospital and clinical departments on its interactive map. Patients and their families could also use their mobile devices to scan medications and learn their purpose or download tailored step-by-step physical-therapy videos. Martinez says, "We want to engage our patients and their families on a whole new level and make them feel more in control of what is going on around them." MCH is well on its way to making these innovations a reality.

More Information

- For more information on Cisco Wireless solutions, visit www.cisco.com/en/US/products/hw/wireless/index.html.

- For more information on how Cisco helps healthcare providers improve patient care, visit www.cisco.com/web/strategy/healthcare/index.html.

Product List

- Cisco Aironet 3600 Series and 3500 Series 802.11n APs with Cisco CleanAir technology

- Cisco Mobility Services Engine and Connected Mobile Experiences software

- Cisco Wireless Services Module 2 (WiSM2) controller on Catalyst 6500 Series switches

- Cisco Prime Infrastructure wireless management software

- Cisco ASA 5500 Series firewalls