



## A MERU CASE STUDY



### Progressive Parkview Health System deploys pervasive WLAN across all seven hospitals

#### CHALLENGE

- Reliable, always on Wi-Fi® connectivity with one network
- Easy to deploy, manage and maintain as new applications and devices are added
- Support voice and HD video

#### SOLUTION

- Meru Networks Virtualized WLAN providing centralized management for easy deployment and management

#### MERU BENEFITS

- Provides wired like reliability, security, and predictability
- Seamlessly supports high quality voice, video and data
- Full RF power access points providing reliable coverage and connectivity to client devices
- Supports all a/b/g devices with air time fairness, ensuring application availability for enhanced patient care and safety

#### THE CHALLENGE: A WIRELESS INFRASTRUCTURE FOR HEALTHCARE SOLUTIONS TODAY AND THE FUTURE

As a leader in developing and using technology to enhance patient care, Parkview was looking to create a work environment that better matched the inherently mobile nature of its workflow in delivering patient care. This included addressing staffing issues between hospital facilities, accessing specialists, communication among staff and family members across various locations, and faster diagnosis and treatment while improving patient safety. Specifically, their goals were to:

- Enhance care by giving medical staff access to electronic medical records at the point of care.
- Enhance patient safety by verifying accuracy of drug dosages via barcode scanning before they are administered.
- Enable remotely-located physicians to conduct patient rounds remotely via video camera-equipped robot doctor units.
- Increase speed of diagnosis and safe administration of care in critical and time-sensitive situations.
- Solve connectivity and coverage problems associated with legacy wireless LAN (WLAN) i.e., mobile carts constantly losing connections, dropped VoIP calls.
- Make wireless LAN maintenance easier and less expensive: their existing WLAN depended on repeated and costly site surveys to achieve precise placement of wireless access points (AP) so as to avoid co-channel interference.

“We needed a WLAN infrastructure capable of supporting our ambitious application needs and vision for state-of-the art patient care,” said Ron Double, CIO for Parkview Health.

#### REQUIREMENTS FOR SEVEN HOSPITAL SITES

Any solution Parkview selected needed to easily support new demanding Wi-Fi based applications while allowing for reliable connection as clients roamed. In the demanding hospital environment where mobility and communication is an integral part of the patient-care delivery chain, Parkview increasingly depended on reliable, “always on” wireless connections as clinicians moved throughout their facilities. Additionally, a solution had to be easy to deploy, manage and extend to new applications at a later date. “We were having a lot of difficulty providing consistent coverage with our previous micro cell based WLAN,” stated Brian Boxell, Network Manager for Parkview Health. “Our mobile carts were frequently losing their connections. And maintaining the micro cell network was a nightmare. On three occasions we had to do new site surveys to re-deploy APs to achieve non-overlapping channels. The maintenance cost alone was astronomical.”

#### THE SOLUTION:

After a successful pilot, Parkview rolled out a new wireless network based on Meru Networks’ Virtual Cell™ architecture to all seven hospital facilities. This WLAN system allowed all APs to reside on a single channel, so they could be placed wherever coverage was needed without worrying about co-channel interference—thus tedious and costly site surveys were all but eliminated. This was crucial for a large organization with a growing network where remodeling and building construction is common. “With our micro cell network we could never get the coverage we needed. Now, with all the APs on a single channel, you can place them wherever you need them without worrying about channel interference. If you don’t have coverage in one part of the building, you just pull a cable and put up another AP. This is ideal for us—we’re always adapting work space, taking ceilings and walls out and moving

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*Brian Boxell, Network Manager*

## **ABOUT MERU NETWORKS**



*Meru Networks develops and markets wireless infrastructure solutions that enable the All-Wireless Enterprise. Its industry-leading innovations deliver pervasive, wireless service fidelity for business-critical applications to major Fortune 500 enterprises, universities, healthcare organizations and local, state and federal government agencies. The Meru award-winning Air Traffic Control technology brings the benefits of the cellular world to the wireless LAN environment, providing the only solution on the market that delivers predictable bandwidth and over-the-air quality of service with the reliability, scalability and security necessary to deliver converged video, voice and data services over a single WLAN infrastructure.*

### **MERU NETWORKS CORPORATE HEADQUARTERS**

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them around” said Boxell. “And the maintenance cost for single-channel is much lower. With limited staff, I need a network that I can put in and forget about, and that I can manage from my office.”

Meru’s use of Virtual Cell also meant zero “handoffs” as client medical devices moved between APs. Connections remain active as clinicians move and calls stay connected. This is critical in a hospital environment where healthcare personnel are very mobile. Dropped wireless network connections caused by moving from one access point to another can cause serious connectivity issues. By using a single radio channel, the Meru virtual cell architecture eliminates handoff issues.

### **THE RESULTS: ENHANCED WIRELESS SERVICES FOR IMPROVED PATIENT CARE**

Parkview decided in 2007 to do a wholesale upgrade of its wireless network to improve network reliability and support new applications such as the interactive robotic monitors and bedside verification of prescription accuracy with the goal of improving patient care and safety. They deployed a Meru Networks virtualized wireless network system-wide to enhance care by providing in-room access to medical records via mobile carts. Since then, they have further improved patient safety by developing a mobile cart that enables remote physicians to conduct patient rounds via video camera-equipped mobile units. This remote controlled wireless cart with video camera and microphone enables remote medical specialists to consult at multiple hospitals and meet the needs of many more patients. Three robot doctor units are at Parkview Hospital and one at each of Parkview Health’s community hospital. This enables better service to a greater number of patients and improved productivity for the physicians. None of this would have been possible with the organization’s previous wireless LAN, which was subject to frequently dropped connections—a serious problem in critical-care environments—and could not reliably and simultaneously support video, voice and data. With the Meru WLAN, Parkview acquired a wireless platform that could support not only these current applications but also future applications now being developed.

### **FUTURE APPLICATIONS AVAILABLE TODAY**

One example of their cutting edge applications now available which furthers their vision of better leveraging their medical staff and improving care, Parkview deployed remote stroke diagnostic devices where doctors can more quickly diagnose a stroke and begin medical treatment. Since the resulting impact of stroke depends heavily on time between onset and treatment, enabling a faster diagnosis has been a critical enhancement in the area of patient care. This would not have been possible without a reliable wireless network capable of supporting converged applications.

Additionally, a major application for the Meru WLAN is helping to ensure patient safety through verifying the accuracy of drug dosages before they are administered. Medicine dispensed at Parkview is scanned at the bedside, as are the prescriptions listed on a scannable armband worn by the patient; data from the two scans are matched over the WLAN before medicine is dispensed. This process helps protect Parkview patients from misadministration of medications and has greatly enhanced patient safety.

Since the deployment, the Meru wireless network has been stable and predictable, requiring minimal maintenance. Parkview was able to convert the benefits and staff time saving into deploying additional mobile applications using wireless, executing their strategic vision of improved patient care and safety.

### **ABOUT PARKVIEW HEALTH**

Based in Fort Wayne, Indiana, Parkview Health is a not-for-profit family of hospitals, physician clinics, long-term care facilities, home health and hospice, laboratory, EMS, research center and fitness centers serving a 15-county region in Indiana and Ohio. The health system is also home to the Samaritan Flight Program and the Parkview Heart Institute. Parkview Hospital has a nationally verified Level II Adult and Pediatric Trauma Center, certified stroke center, accredited comprehensive cancer center and accredited chest pain center. Employing more than 6,000 full- and part-time staff, Parkview Health’s mission is to provide quality health services and to improve the health of the communities it serves.