



Smarter Wi-Fi Solves Connectivity and Coverage Problems for Physicians, Improves Patient Care

Grove Hill Medical Center needed to clear the air. For years it had been trying to provide a consistent Wi-Fi service to some 500 doctors, administrators and staff throughout its network of clinics but found that its facilities and surroundings were not RF-friendly.

Founded in 1947, Grove Hill Medical is the largest privately-held multi-specialty network of clinics in New England. With nine outpatient centers throughout central Connecticut, Grove Hill offers a wide-range of specialty medical services.

Until recently, Grove Hill ran a 3Com 802.11g wireless network throughout all its facilities. But the APs were not being centrally managed and were causing problems for network admins.

Physicians at Grove Hill depend on the Wi-Fi network for entering patient data into the records system, lab ordering, writing prescriptions and showing patients x-rays and MRI's on Dell and Lenovo tablet PCs. Multimedia support was also a critical requirement. Grove Hill's new orthopedic department was equipped with CAT-7 Ethernet cabling to support HD video so a Wi-Fi system that could support HD video was essential.

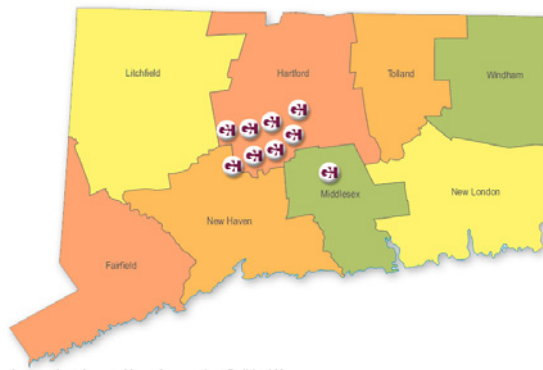
"Our Wi-Fi network had always been a nightmare," said Carl Labbadia, IT Director at Grove Hill. "We'd constantly get calls from doctors saying they couldn't connect or the AP had frozen up so we had to drive out to the facility to fix it. This obviously doesn't scale. We really needed a more industrial strength wireless system that could not only provide more reliable connectivity and ubiquitous coverage but also one that could easily support future multimedia applications."

Labbadia noted other Wi-Fi problems ran the gamut from flaky performance and spotty coverage to interference from microwaves and the radiology labs. With a lean IT staff of eight providing end user support, training, managing billing and other systems, only three were dedicated to managing the network infrastructure. So the wireless system needed to be simple to deploy and manage but still sophisticated enough to provide reliable high-speed service.

"We also had a lot of basic infrastructure challenges just due to the fact that many of our multi-story buildings were renovated factories from way back when," said Labbadia. "We never had real reliability. We could never confidently install an AP and leave it there and know that it would function properly - because if something changed in the environment, we would never know and the system had no ability to dynamically cope with RF changes. In medical facilities like this, the RF domain is in a constant state of change."



With nine locations throughout Connecticut, Grove Hill Medical has migrated to a stable and reliable Smart Wi-Fi infrastructure from Ruckus Wireless to support critical-care applications.



COMPANY OVERVIEW

Headquartered in New Britain, Connecticut, Grove Hill Medical has been in operation since 1947 and operates nine medical outpatient facilities throughout central Connecticut. Grove Hill provides a wide-range of specialty services from cardiology and dermatology to internal medicine and gynecology.

REQUIREMENTS

- Reliable user connectivity
- Support for HD, IP video
- Large numbers of concurrent users per AP
- Single, centralized controller for multiple sites
- Distributed forwarding without traffic having to funnel through a controller
- Automatic interference rejection
- Automatic alarms and remote diagnostics
- Higher speed 802.11n

SOLUTION

- 50 ZoneFlex 7962 dual-band 802.11n indoor Smart Wi-Fi APs
- ZoneDirector 3100 Smart wireless LAN controllers

BENEFITS

- Improved throughput and signal coverage
- A 90% reduction in help desk calls associated to Wi-Fi
- Integrated multimedia support for IP-based video and voice
- Lower overall total cost of ownership
- Simpler deployment and management of the Wi-Fi system
- Sophisticated but easy to implement wireless security
- No controller at each site required. One centralized controller at headquarters manages all network-wide APs





Healthcare

“Before installing the Ruckus ZoneFlex system, we would continually receive calls from physicians complaining about dropped connections or erratic service due to intermittent electromagnetic interference that would crop up when equipment for MRIs, CAT scans and X-rays were in use.

Now we don't receive those calls and have seen trouble tickets drop by 90 to 95%”

Carl Labbadia

IT Director
Grove Hill Medical Center

One of the larger problems for Grove Hill was the radiology department. State of the art equipment for X-rays, CAT scans, mammographs and MRI's oftentimes could create electromagnetic interference, raising the noise floor and bringing the Wi-Fi network to a standstill. Under the right conditions when these radiology devices would run throughout the day, physicians on the floor above would lose connectivity.

After evaluating a number of competing systems from Cisco, 3Com, Brocade and Meraki, Grove Hill selected the Ruckus ZoneFlex solution due to its ability to provide adaptive signal controls and automatic interference rejection through the patented smart antenna array in each AP.

Grove Hill deployed approximately 50 ZoneFlex 7962 dual-band APs and a single ZoneDirector 3100. Each building has a unique subnet on which the ZoneFlex APs were deployed.

The Ruckus ZoneFlex system gave Grove Hill the flexibility to deploy a single controller at their headquarters to manage APs at all their remote sites. A hub and spoke fiber network connects all the different Grove Hill locations through high-speed Ethernet links up to 20 Mbps.

Deployment of the Ruckus ZoneFlex system is radically simplified through a configuration wizard

that allowed Grove Hill to quickly define the characteristics of the WLAN in a matter of minutes. Once completed, network admins simply used the existing Ethernet cabling to install the Ruckus ZoneFlex APs. The APs immediately registered with the ZoneDirector to obtain their configuration with no manual intervention.

With the centralized system in place, Grove Hill is now better able to control, manage and secure their wireless environment. Advanced features allow them to implement time-based WLANs, client load balancing, per user throughput thresholds and gather real time monitoring statistics.

“When we installed the ZoneFlex APs, we immediately eliminated the problems we'd been seeing in areas such as radiology where interference was causing dropped connections,” said Labbadia.

“And we've seen a 90-95% reduction in help desk calls and trouble tickets associated with the wireless network. This lets us to focus more of our time and energy on improving operational efficiency and the patient experience,” concluded Labbadia.

Looking forward, Grove Hill plans to use the 5GHz band to providing informational video displays for patients and guests and the ability to check-in online.

RIGHT: View of the 2.4 Ghz Wi-Fi coverage from one of Grove Hill's nine facilities as seen in the Ruckus ZoneDirector. The screen capture shows strong signal strength at distances quite far from each AP.

