

Case Study

Industry: Healthcare

Virginia Commonwealth University Health System

Project: 4G ubiquitous wireless network at new hospital.

Major advantages: Enterprise mobile connectivity.
High availability for all wireless services.
No service issues.



A conversation with Greg Johnson, CTO and Director of Technology and Engineering Services, VCU Health System

The Virginia Commonwealth University (VCU) Medical Center is one of the nation's leading academic medical centers and is among only 200 or so healthcare organizations worldwide that have been awarded Magnet status for nursing excellence in national and international health care. Located in Richmond, VCU Health System has been named Virginia's top hospital by US News and World Report.

VCU Technology at a Glance

- 125 two-way radios
- 100,000+ square feet of medical telemetry
- 600 VoIP handsets
- 240 VoIP pendants
- 850+ COWS (Computers on Wheels)
- Alarm management system

Today, IT Help Desks are kept busy with wireless connectivity calls from frustrated clinicians. How have you managed to virtually eliminate these calls?

"Because we are heavily dependent on technology and mobile devices, we needed an enterprise-grade wireless solution that would enable every aspect of mHealth. We chose to standardize on Black Box Network Services' distributed antenna system (DAS) and WLAN solutions. Black Box was the only vendor that could meet our requirements for delivering all wireless services, from Wi-Fi and medical telemetry to 4G, with unsurpassed performance across facilities. VCU Health System's deployment of Black Box's wireless solutions in our new critical care tower kicked off a retrofit of the rest of the campus in order to provide the same high-quality service levels and ubiquitous wireless throughout the organization."

Why was comprehensive wireless so critical to your IT strategy?

"The next phase of our wireless strategy is to meet clinicians' demand for device independence. We want to support clinicians' desire for complete access of all clinical systems via the device of their choice, be it a 4G smartphone or tablet."

How did Black Box help make ubiquitous wireless a reality?

"As a solutions-systems integrator, Black Box understands both the customer needs as well as the in-building requirements for delivering cellular services. Although VCU Health System had wireless engineers on staff, it relied on Black Box's expertise of in-building wireless design and deployment."

"Black Box conducted a comprehensive assessment of the new hospital, enabling us to better understand how RF signals propagate room-to-room, floor-to-floor, and across the entire building. They engineered and deployed the wireless network to address the unique requirements for each of our wireless services. In addition, Black Box's Wi-Fi deployment enabled us to traffic manage our WLAN clients, from VoIP handsets to mobile computers, minimizing data contention and optimizing network throughput and performance."

How would you measure the overall impact wireless has had on the delivery of care at VCU?

"The new hospital represents approximately one third of the roughly 1 million square feet of wireless capability on campus. We have had virtually no wireless issues. The rest of the VCU Medical Center campus operates on conventional wireless systems and is encumbered with gaps in service. Staff immediately notices the difference in service quality when they leave the new hospital. We need to have a wireless infrastructure that meets our demand. It's no longer a luxury, but a requirement for quality patient care."

*"We have had virtually no issues with wireless service reliability since implementing Black Box solutions."
Greg Johnson, CTO and Director of Technology and Engineering Services, VCU Health System*



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