

Get More With Wireless

Cut installation costs — and cables — by considering the latest robust wireless products



By Mitch McKinley

Over the past few years, we have seen multiple aspects of technology migrate to wireless connectivity. This is especially true in the healthcare market. What was once a limited vertical is now wide open. Originally, the only thing working via WLAN connection were computers on wheels (COWS). This started the gradual movement for more solutions. We began seeing the use of wireless telephony become commonplace with both facilities and clinical staff. With the emergence of smartphones, more and more applications were going over the air.

We now have doctors receiving CT scan and MRI images on their handheld devices. Patient entertainment systems are becoming more fluent in wireless topology. Bedside charting and prescription drug tracking are being done via wireless bar code readers. Audiovisual systems are progressing in this direction with projectors, speakers, touchscreen control panels, and numerous solutions for wireless connectivity. There are lighting and HVAC controls within the building automation systems that are completely operating over 802.11n, contributing to the accumulation of points for LEED certification.

Over the past two years, patient monitoring has become one of the biggest users of wireless solutions. The ability to monitor a patient's vital signs as they are moved from the operating room to recovery and from room to physical therapy, all using the same monitoring device, has increased efficiency in patient transportation. These systems typically have their own wireless infrastructure. This allows them to operate on a dedicated backbone, reducing the risk of bandwidth degradation or interferences that cause loss of connectivity.

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safety. Infant abduction and wandering patient issues have long been an issue for hospital security teams. With wireless RFID tags in place in patient bracelets, the wireless network can be configured to work with the security systems to shut down floors, exit doors, and stairwells. With wireless CCTV and communications in place, the campus

Radio Frequency Identification (RFID) is also becoming more commonplace in hospital applications. While it does a great job of locating equipment, such as COWS and pumps, it is also a huge benefit in the way of patient



police/security can monitor and respond to virtually any situation.

Wireless networks have greatly decreased the cost of network infrastructure installations. In recent years, you would find as many as eight data connections in the patient room headwall. This has dropped dramatically as more and more manufacturers are producing solutions with wireless capabilities. The growing trend in data port design for headwall applications has been between three and four per headwall, cutting installation costs per room by close to \$1000. In a small hospital setting, this may only amount to a few thousand in savings, but for a 100-bed hospital, this eliminates the cost of 400 drops, eight 48-port patch panels, and eight 48-port switches. In this scenario, the hospital has removed close to six figures off of their installation cost.

The wireless field is not without its skeptics. There are those who believe that wireless is too slow and unsecured, and should never replace hard-wired connectivity in the healthcare field. Several years ago, that was an absolutely valid argument. However, advancements in WiFi technology have made it as reliable and robust as your traditional cabled infrastructure. In fact, one hospital technology department in the greater Dallas/Fort Worth area is planning to achieve an 80/20 split by the end of 2012. Its forecast is that the majority of the hospital's voice, data, AV, security, and clinical applications will reside on the 802.11x network.

It is highly recommended to check with state health code and other authorities having jurisdiction (AHJ) regarding which systems can operate solely via wireless networks, as each state or local municipality may have stricter guidelines regarding the use of 802.11x and distributed antenna systems technology than others.

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