

WIRELESS TRACKING CURES ASSET WOES

UCSF Medical Center saves time, cuts capital expenditures with real-time location system.

by Brian Albright

Hospitals utilize thousands of pieces of expensive equipment, much of it highly mobile, while treating patients. Locating those assets in a timely fashion can be a challenge, particularly in larger facilities where tracking down diagnostic equipment, IV pumps, or even something as basic as a wheelchair or table can sometimes take hours — throwing schedules into disarray for both medical staff and patients.

The University of California San Francisco (UCSF) Medical Center, a 500-bed, 1.2 million-square-foot facility, solved its asset tracking problems with a real-time location system (RTLS) that has improved asset utilization and eliminated lengthy searches for missing equipment. “We spent a lot of time looking for equipment,” says Jim Barnes, manager of OR support services at UCSF. “We have a huge OR with no central storage location of any sort. It was difficult to track things down when we needed them, and we’d have very expensive equipment just disappear for weeks at a time.”

In 2007, hospital administrators began looking for a better way to track medical equipment throughout the facility, both to save time for staff and to meet regulatory requirements for keeping hallways clear of obstructions, as well as automatically track items that had been transferred to an off-site storage facility two miles away.

CONDUCT A RIGOROUS SELECTION PROCESS

UCSF established a project team to investigate RTLS solutions, with participation from the CFO, CIO, information technology staff, the director of material services, the business manager for the OR, the medical director and the support services staff. After receiving proposals from six different vendors offering a variety of RFID (radio frequency identification) technology, UCSF chose the Real-Time Awareness Solution from Awarepoint. Awarepoint’s system is based on a Zigbee sensor network. Wireless sensors are plugged into existing electrical outlets to form a mesh network, eliminating the need to install a new wireless tracking infrastructure. Small battery-powered tags placed on assets can then be tracked using the company’s Web-based Searchpoint engine.

As part of the selection process, UCSF staged an on-site proof of concept event in which two of the vendors (Awarepoint and a Wi-Fi system vendor) were given six hours to install their equipment, track items under a variety of predefined scenarios, and then remove the system. Administrative director for perioperative services James Brennan, who normally does not work in the OR area, was tasked with using the technology to find five tagged assets. He was able to locate all five pieces of equipment with the Awarepoint system (he found only three items using the Wi-Fi technology).

REAL-TIME DATA SPEEDS EQUIPMENT SEARCHES

Barnes’ staff is tasked with finding and retrieving equipment for the nurses who work in the OR, so he worked closely with his team to deter-



Real-Time Awareness Solution from Awarepoint reduced UCSF Medical Center’s equipment searches by 1,600 hours.

mine what assets should be tagged. “We identified 1,000 pieces of equipment,” Barnes says. “Everything from basic set-up tables to microscopes and navigation equipment.”

Initially, UCSF deployed the solution across the entire OR and four additional floors, tagging high-value assets such as computers on wheels (COWs), transport monitors, and GlideScopes (video laryngoscopes that are used to view endotracheal tube placements). The sensor system was also deployed in areas outside of the OR in order to track anesthesia equipment, which moves throughout the hospital. Barnes’ team was able to tag 700 assets and deploy the solution in just four days.

One of the primary functions of the operating room technicians is to prepare the OR suites in advance of a case or procedure. In the past, support services staff might spend 30 to 45 minutes searching for a COW or a GlideScope. Now when staff are asked to locate an item, they log onto the Awarepoint system, type in the name of the equipment, and they can automatically see where each asset is located. “In the past we’d have to go room to room, or just start asking other people on the staff if they knew where something was,” Barnes says. The primary benefit to UCSF has been improved efficiency. Searching for equipment used to take an average of 1.5 hours per week, per equipment technician. Now, these searches take only seconds, saving approximately 1,600 hours between the OR equipment technicians, OR service coordinators, and anesthesia technicians.

The hospital has also avoided duplicating capital equipment purchases because of improved asset utilization. In the first year the system was in place, UCSF was able to eliminate the planned purchase of six transport monitors (costing \$28,000 per unit) and four GlideScopes (at \$20,000 each), for a total savings of \$248,000. Since the initial installation, UCSF has extended the solution throughout the building. The hospital has begun testing Awarepoint’s auto-clavable T2S tags to track instrumentation trays through the cleaning and sterilization process, and deployed temperature-sensitive tags in areas of the hospital that require ambient temperature monitoring. Other departments in the hospital, including the nursing, have also identified equipment they want to tag, and the technology is set to be deployed at the UCSF Medical Center at Mount Zion and at the hospital’s outpatient clinic.

Barnes expects the efficiency benefits to increase as UCSF expands its use of real-time asset information. “Before we had Awarepoint, the techs were always telling me they couldn’t find something,” Barnes says. “I don’t get those questions anymore. It’s saved us hours and hours a day.” □