

PinnacleHealth Pushes Ahead With RFID

The health-care organization is using active 433 MHz tags to track 23,000 surgical patients annually, and nearly 2,500 of its assets, with plans to tag 5,500 additional items.

By Beth Bacheldor

Feb. 6, 2007—For two years, PinnacleHealth has been using RFID to track thousands of surgical patients being admitted, operated on and released from the surgical department after recovery. The RFID implementation has been so valuable that the health-care provider has since added equipment tracking, and is now about one-third of the way through tagging about 8,000 items, from beds to intravenous (IV) pumps.

The hospital group, located in central Pennsylvania, is using RFID technology from Radianse at Harrisburg Campus, in the downtown area, and Community Campus, just outside the city. The organization also operates three other facilities: Polyclinic Campus, an outpatient clinic with specialty hospital services in downtown Harrisburg; Seidle Campus, a hospital in Mechanicsburg; and Cumberland Campus, a physician office building and outpatient clinic, also in Mechanicsburg.

The Radianse patient- and asset-tracking system includes active 433 MHz tags and receivers designed to read the tags' unique ID numbers. The receivers—small box-shaped devices mounted on the walls—plug into the hospital's local area network and relay the RFID data collected to a Radianse server.

The night before patients check in to the surgery unit, the hospital assigns that patient a tag, which is clipped to the patient's chart, says Tina Frank, surgical services project specialist at PinnacleHealth. The tag's number is associated to the patient in the hospital's Pathfinder patient-tracking system, supplied by PeriOptimum. It is then integrated with the hospital's surgical scheduling system, provided by Per-Se Technologies (recently acquired by McKesson).

On the day the patient checks in to the surgical department, the receptionist pulls up the scheduling system and clicks an icon, time-stamping the patient's admission. As the patient moves into pre-op, the tag is clipped to the patient's IV pump, which is documented by a receiver in the pre-op area. Subsequently, receivers in the operating room, recovery area and phase-2 recovery area—where a patient is eventually discharged from the surgical unit and moved to a regular hospital room—read the tag as the patient moves through those different areas. This creates a real-time trail of the patient's care.

A plasma screen in each area shows caregivers where patients are at any given time, providing a bird's-eye view of how patient flow is going. Through the integration of Radianse's software and the PathFinder patient-tracking system, the screens display a grid of the OR schedule. Underneath that, it shows a grid of what is actually happening, using the real-time data collected by the RFID tags and readers.

"If you have an emergency case or add-on case, you can quickly look and see how that case will fit in," Frank explains.

PinnacleHealth's Harrisburg and Community campuses perform a total of about 23,000 surgeries annually,

and Frank estimates that the RFID patient-tracking system has documented as many as 45,000 patients' surgeries. "It's been an excellent communications tool," she says, particularly because it provides hospital staff with real-time information about a patient's status, which the staff can readily share with family members.

In July, the hospital took the communications capability a step further, linking the RFID tracking system to a plasma screen message board that displays patient status, much like an airport's electronic screens displays airplane take-offs and landings.

"Before, if a family member checked in with the receptionist's desk to find out the status of a patient, where he was and how he was doing, the receptionist would have to call the various areas to find out," Frank says. Now, family members can check a plasma screen hanging on the wall of the OR waiting room. Using a five-digit code supplied when the patient checked in, they can look for the code on the screen to see where the patient is location.

The patient-tracking system's success encouraged the hospital to add asset-tracking at Harrisburg Campus. According to George Morley, director of biomedical engineering at PinnacleHealth, tags have now been affixed to about 2,500 assets, with 450 receivers installed in hallways, rooms, elevator bays and other areas.

The asset-tracking capability is already proving its worth, Morley says. Shortly after he started working with the health-care organization more than 20 years ago, he sat in on a meeting in which staff discussed the difficulty involved in tracking wheelchairs throughout the facility. "And we kept having these discussions about wheelchair accessibility," Morley recalls. "At least quarterly, we'd have to make a sweep of the entire hospital to find the wheelchairs because, yes, people would hoard them."

Now, when caregivers need to find a specific item, they can access the Radianse software program from any computer in the hospital. There, staff members can search for a type of device, or can enter a device's serial number in order to locate a specific piece of equipment. "I thought this was going to be a hard sell to get the [employees] to use it," says Morley, "but it ended up being just the opposite. The departments use it constantly to keep track of all their equipment."

RELATED_ARTICLES Hospital staff can also use the system to find IV pumps, which require regular software upgrades. The system can also be employed to track defibrillators, crash carts and other critical life-support equipment. This helps make sure the devices are regularly inspected.

In the future, PinnacleHealth will continue to tag more items at Harrisburg Campus, and Morley hopes to implement asset-tracking capabilities at Community Campus as well. "I've put it in the budget to expand there," he says, "and I'm hoping we'll be able to."

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