RFID Documents Surgery at Huntsville Hospital

The Alabama facility is using passive HF tags to verify a patient's identity and document the surgical process, from admission to discharge.

By Beth Bacheldor

Aug. 21, 2007—At Huntsville Hospital in Alabama, RFID is helping the surgical department stay on track. Thanks to the passive RFID system it installed, the department has become more efficient and care has improved because patients are accurately identified at every step of the way during their visit.

Huntsville Hospital is using Aionex's RFID-enabled Advanced Patient Response Platform (APRP), an integrated communication and transaction software product that can monitor caregivers as well as helps keep track of patients. The system leverages SkyeTek passive 13.56 MHz RFID tags and interrogators that comply with ISO 15693, ISO 14443A and ISO 18000-3 air-interface protocols. The tags are embedded in stickers and key fobs.

About a year ago, the 881-bed acute-care hospital began testing the system with a few nurses, according to Kitty Cathcart, lead applications analyst in the hospital's surgical department. After several months of testing, the system went live first in the pre-operating rooms, then in the operating rooms and finally the post-anesthesia care unit (PACU). Today, the hospital issues about 2,400 RFID tags per month in the form of adhesive stickers worn by patients, and 25 RFID-enabled key fobs given to anesthesiologists.

Huntsville Hospital decided on an RFID-enabled system mainly because it wanted to improve efficiencies and communications that would directly improve surgical start times, Cathcart says. "The surgery department had identified several components to the patient throughput and staff workflow that often creates a bottleneck throughout the continuum of care," she says. The hospital specifically wanted to improve communication among staff via real-time updates of patients' status, provide caregivers with visual cues via an LCD monitor of scheduled procedures and their status, as well as provide a mechanism that would correctly identify patients being prepped for surgery. In addition, the hospital wanted to be able to send out alerts (via e-mails, text paging or cell phone calls) of upcoming, current and overdue tasks, and also document surgical start and stop times and staff movements.

Aionex's APRP is a Web-based system that uses a rules-based engine to track, communicate the status of processes and events. Hospitals can check on a patient's status via electronic whiteboards, as well as on PCs and handhelds running the software. For several years, the APRP was able to track caregivers and patients via infrared (IR) ID tags and interrogators, but about a year ago Aionex added SkyeTek's RFID capability. "One of the reasons we moved away is the cost," says Curt Freemyer, Aionex's CEO. An IR ID tag affixed to a badge or lanyard can cost up to $50, and "a lot of times patients have to have them cut off, and go through several in a given visit. It gets pretty expensive."

At Huntsville Hospital, patients are tagged with an RFID-enabled sticker when they arrive in the surgical department. The sticker's tag is encoded with unique ID number that is then correlated in the Aionex database with that patient's name and other information. As the patient moves to each stage of surgical process, nurses

or other caregivers scan the tag, and the tag ID number is automatically entered into a patient kiosk-comprised of an embedded CPU, a touch-screen monitor, a Wi-Fi card and an RFID scanner, Cathcart explains. The kiosk compares the patient's name with the information associated with the tag ID. "The kiosk will generate an error if the RFID tag and the patient identified do not match," she says.

Once in pre-op, a patient's tag is again read by an anesthesiologist, who also uses a tethered handheld interrogator to read his own RFID-enabled key fob, documenting the pre-op visit. All scans are time-stamped, Cathcart says. Caregivers can view the status of each process on large LCD monitors stationed throughout the surgical department. The patient's tag is read when entering and leaving the OR and the PACU, to document the time the patient spends in each area.

Since using the system, Huntsville Hospital says OR room utilization has become more efficient, and staff members now know in real-time the location and status of a patient. As the hospital begins using more of the reporting functions, it can use the system to help it analyze how well the processes are flowing. "We anticipate improved room turnover times," Cathcart says.

The staff at Huntsville Hospital values the system, particularly because they can easily check on the status of patients via the electronic boards. Moreover, the system is helping the hospital document its clinical operations and keep patient surgeries on schedule.

RELATED_ARTICLES "We definitely want to expand our options and grow the system," says Cathcart. For example, Huntsville Hospital wants to integrate the platform with its clinical documentation system so the RFID data can automatically populate that system, as well as expand it to the surgeons' offices for scheduling surgeries, among other things.

Several other the hospital's departments have also expressed interest in the application, Cathcart says.