

RFID Heals Hospital's Inventory Problems

The King's Daughters Medical Center is using RFID to inventory and track patients' cardiac medical devices, and to facilitate billing.

By Claire Swedberg

Aug. 15, 2005—The King's Daughters Medical Center (KDMC), in Ashland, Ky., has begun using an RFID system to track the addition and removal of cardiac medical devices from a storage cabinet, and to assist with billing and the tracking of patient care. According to Brian Taylor, an information technology specialist at the hospital's heart and vascular center, the system can monitor which devices are still on the shelf, which have gone to what patients, and when they were provided. The system went live this month.

The One System of Care iRIS, provided by Mobile Aspects in Pittsburgh, is reportedly designed to eliminate the need for manual inventory tracking, while reducing the chance of losing medical devices.

With the new system, cardiac nurses use their proximity ID cards to open a locked cabinet in which devices such as coronary artery stents are stored. The devices are used by the cardiac, electrophysiology and vascular catheterization labs located on the second and fourth floors of the hospital. After an ISO 15693 standard 13.56 MHz RFID interrogator (reader) built into the cabinet scans a nurse's proximity card, the nurse uses a computer touchpad to enter the name of the patient. A tagged device is removed from the shelf in the cabinet, and that same RFID interrogator reads all the other tagged items remaining in the cabinet, thereby determining which device was taken.

The patient and medical device data goes to the Mobile Aspects database, where it is analyzed and routed to the appropriate departments at the hospital for billing, inventory tracking and patient-care tracking.

When a new shipment of medical devices arrives at the heart and vascular center, a KDMC employee inputs each item's serial number, manufacturer, classification (type of device) and expiration date into the database. The employee then attaches a passive RFID tag onto the box of the device, and links the tag's unique serial number with that corresponding data.

Mobile Aspects provided the locked cabinets with built-in RFID readers, as well as the proximity cards that work with the KDMC's existing proximity card system, which the hospital uses to control access to restricted areas. "It is a fully plug-and-play product," says Mobile Aspects president and CEO, Suneil Mandava.

Currently, the center is using the iRIS system exclusively for inventory-tracking purposes, though it intends to begin using the system for billing within the next few weeks. "We know the item was used, and we know who it was used on," Taylor says. The hospital plans to interface that information with its billing system and have automatic billing statements produced for the patient.

Prior to using the RFID tag and proximity card system, Taylor says, the hospital recorded inventory manually. Cardiac devices, which can have a value as high as \$1,000, were located on a shelf accessible to general staff members without identification. Employees recorded manually on paper what items were used for which

patients, and a copy of that information was then forwarded to the billing department. With this older system, items were more likely to get misplaced, their removal untraceable to any specific staff members. The new system is more secure because employees must have proximity ID cards to open the locked cabinet, and because they need to key in the name of any patient for whom a device is being taken. This, says Taylor, also cuts down on time-consuming paperwork.

"We have an excellent nursing staff," he says. "Now they are freed up to take care of the patients." The RFID system can also track when a device is reaching its expiration date and instruct the database that another item needs to be ordered.

Eventually, Taylor says, the hospital would like to expand the RFID system to include the tagging and identification of patients and medications. "At this point, the consensus is that the price of tags will go down." Once the price drops, Taylor explains, the hospital will likely consider the technology for additional tagging options. The hospital has tagged about 1,000 items already and intends to do so for 6,000 more, depending on each item's value. Inexpensive surgical items such as tape and gloves, for example, would not be tagged.

Some other hospitals are also using the Mobile Aspects iRIS system to track supplies (see [Healthy RFID Rivalry for Hospitals](#)). "It's really beginning to take off," Mandava says, adding, "[Hospitals] are realizing they need to remove the burden from the clinician of having to scan a bar code or push a button in the fast-paced environment of the hospital."

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