

RFID to Track High-Cost Items at Columbus Children's Heart Center

The facility plans to use 13.56 MHz passive tags to track inventory, reduce overstocks and waste, and make sure patients are properly billed.

By Claire Swedberg

Feb. 20, 2007—Cardiac physicians performing surgery at the Heart Center at Columbus Children's Hospital often need devices or tools in a hurry and can't afford for such items to be out of stock. For that reason, the hospital has made a point of overstocking much of its inventory. With a new RFID-enabled inventory-management system, however, the hospital may reduce its excess inventory, improve its billing procedures and reducing wastage.

At the Heart Center, patients of all sizes, from infants to adults can require a variety of devices. That makes it necessary for the hospital to be extremely vigilant in stocking those items. "We have an extreme diversity in sizing needs," says Vincent F. Olshove, Columbus Children's Hospital's cardiovascular perfusion director and cardiac catheterization and interventional suites manager. "To stock all the sizes is a huge inventory issue. When we are doing a procedure, we need the right device and the right tool at that time."

In some cases, items might have been removed without being properly documented, or without a patient being properly billed. To avoid running out of items, a hospital may choose to stock more items than it thinks it will need. However, such a policy has a drawback: The items typically have a shelf life of one to three years, and may expire before use, which is a waste of money and resources. It is not uncommon, Olshove says, for the Heart Center to suffer losses of over \$100,000 in wasted items that had been kept in stock but had to be thrown out because their expiration dates had passed.

At the end of the first quarter of 2007, the hospital intends to address that issue with the installation of 13 iRISupply cabinets developed by Mobile Aspects. The cabinets stand about 74 inches tall, measure 32 inches deep by 29 inches wide, and will contain such high-cost items as stents, catheters and closure devices. A cluster of cabinets will be installed in two of the Heart Center's cardiac catheterization suites, each centered on a master cabinet hardwired through a LAN connection to the hospital's data network. This says Bryan Christianson, MobileAspects' marketing director, will allow authorized staff to ascertain which items are in what cabinet at any given time.

When a new item arrives at the Heart Center, personnel will scan its bar-coded serial number. If there is no bar code, the staff will assign one. The bar code is connected to data in the Heart Center's database, such as the item's expiration date. The staff will encode a unique ID number to a passive 13.56 MHz tag compliant with the ISO 15693 air-interface standard, and attach the tag to that item. It will then be placed in one of the 13 cabinet units, which are equipped with an RFID interrogator to identify each item's tag. MobileAspect's iRISynergy software links the item to that cabinet via a connection to the hospital database.

At the start of a surgical procedure, the staff member tasked with collecting the necessary tools and devices

for the physicians will present a bar-coded name badge to a scanner built into the master cabinet. The bar-code scanner is linked to a screen that allows the employee to input the name of the patient and the physician, linking every item taken from the cabinet with the patient, doctor and circulation person. If an item were to be removed for a procedure but determined to be the wrong size, it could be taken back to the cabinet and exchanged for a different item, and the cabinet's RFID interrogator would send that amended information to the hospital database. In that way, the staff is saved the added time of writing or scanning information specific to items taken from or returned to the cabinet.

The Heart Center tags all items valued at more than \$100. Rather than outright purchasing the iRISupply system—which is priced at \$260,000 for 13 cabinets and the iRISynergy software—the center is renting the system with an option to buy it in the future. In the meantime, Olshove says, "We will be tracking what our savings are." He predicts the system could save the hospital 10 to 15 percent in lost charges, though the hospital declines to indicate the total dollar value of its lost charges over an average year.

Under the previous setup, staff sometimes used items on patients without billing for them, simply because they were overlooked. The new system makes that impossible. At the end of each day, a hospital employee will run a report on all items removed from the shelves, including on whom they were used, then base invoicing on those reports. Olshove expects to see reduced wastage now that the hospital will be better able to track which items need to be replaced, which do not and those that must be used first due to an approaching expiration date.

RELATED_ARTICLES Christianson likens non-RFID based inventory-management systems to a newspaper vending machine—when a customer pays for a newspaper, this unlocks the vending machine's door, forcing the newsstand operator to trust the buyer to take only one copy. "In circumstances when folks don't comply with a system such as bar coding," Christianson says, "you have a problem. It makes you very dependent on personnel operating it correctly."

He adds, "With the RFID system, there's no need to manually operate the system. That's the real difference with our technology."

Other hospitals that have deployed iRISupply include the Heart Hospital Baylor Plano in Collin County, Texas (see [New Heart Hospital Plans Major RFID Operation](#)) and King's Daughters Medical Center (KDMC) in Ashland, Ky., b (see [King's Daughters Expands Its RFID Tracking System](#)).

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