

The Atlanta medical center is using a WaveMark solution to track its inventory of cardiac products, and their usage on patients.

By Claire Swedberg

Dec. 21, 2009—[Saint Joseph's Hospital](#), located in Atlanta, Ga., reports that an RFID system provided by [WaveMark](#) has enabled it to reduce costs by changing the way in which it purchases and manages supplies for its cardiac catheterization and electrophysiology (EP) labs. The system, which consists of 18 RFID-enabled cabinets, as well as interrogators in the rooms in which those cabinets are located within the cardiac department, enables the hospital to keep an eye on the amount of inventory it has on hand and on order, in real time, and to receive alerts when it is time to re-order, or when expiration dates approach. With this information, the hospital can now order in bulk rather than by item, thus saving money on the cost of its products.

The hospital began seeking such a system in spring 2009, when it started planning a transition in how it purchases catheters and other products for its cardiovascular services department. There were several problems with the existing system, says John Franke, Saint Joseph's director of cardiovascular services, which he hoped to address. First, it was difficult to know exactly what was in stock without walking to the shelf and physically counting what was stored there. Since that task was too labor-intensive and time-consuming for busy staff members to handle, the hospital was forced to base its inventory on which items were used on patients, and on the assumption that if a particular product was not recorded as being used, it was still on the shelf. The resulting information, however, was not always accurate.

Another major problem was the manner in which cardiac products were ordered. Historically, the facility had purchased items as they were needed, in small quantities. However, Franke says, such a practice was much more expensive than buying in bulk—he likens it to purchasing a week's worth of groceries at a convenience store, as opposed to buying a month's worth of the same goods at a box-warehouse retailer. The hospital wanted to switch to bulk purchasing, he says, and thereby save a significant amount of money. However, it had not been previously possible to buy in bulk, because it was hard to obtain clear, accurate inventory numbers, thereby ensuring that there were not too many items on hand, which could result in expired product. What's more, he says, it was difficult to predict when and how often items would be needed. "As we moved forward to transition our purchasing methods," he explains, "we needed an inventory-management system to track our inventory." The hospital considered several RFID vendors before selecting a WaveMark solution, Franke says, based on the company's record of customer support.

WaveMark installed five RFID-enabled cabinets in the hospital's EP lab, as well as five in the catheterization lab and eight in individual procedure rooms. Each cabinet contains a 13.56 MHz reader compliant with the ISO 15693 standard, with an antenna on each shelf. Every room in which the cabinets are installed also has a separate RFID interrogator (allowing employees to sign out a product, and record the procedure and patient for which it will be used) connected to a computer and touch

screen. The hospital also has an RFID-enabled tagging station, to link RFID numbers with individual products when they are received.

As each new cardiovascular-related item arrives, workers use the reader at that station to scan the bar code on the product's packaging, and then read the ID number encoded on a WaveMark RFID label, linking that label to the item and its descriptive details, such as its expiration date. The RFID label is attached to the product, which is then moved to the cabinet. When the item is placed on a shelf within the cabinet, the built-in interrogator reads the tag, and its unique ID number is transmitted back to WaveMark's Web-based server via a cabled connection, at a rate of every 18 minutes.

When an employee requires an item from a cabinet, she walks to the separate reader stationed in the room, inputs data identifying herself, along with the patient who will use that product, and then reads the item label's ID number, explains Lisa Stepp, the hospital's project manager of cardiovascular services. The worker can then view a dashboard indicating which items are currently in storage on each shelf. If an object is removed, the cabinet's interrogator is no longer able to longer read its unique ID number, and the system updates that item's status as having been used by a specific patient. If a staff member fails to enter data identifying herself or the patient, and if the item is simply removed from the room, an alert is sent by the WaveMark reader to the back-end server, so that the appropriate employees can be notified by text or e-mail. The dashboard then displays the item as missing. On the other hand, if the product that has been checked out for use with a patient is returned to the shelf, the system updates that information, indicating it has not been used and is again available for use with another patient.

The resulting installation, which went live on Aug. 1, 2009, allows the hospital to receive alerts when inventory levels reach a predetermined minimum amount, as well as view the shelf's contents in real time. By integrating the WaveMark server data with its own purchasing system, the hospital is also able to order new products through the WaveMark software, and store that purchasing information on the WaveMark server, as well as on its own back-end system.

Having the system in place helps the hospital accurately charge patients for items used, purchase products at the appropriate time and track expiration dates, and also allows purchasing in bulk whenever appropriate, by giving management a better understanding of when inventory has become low enough to justify a large replacement order. At the same time, Franke says, the system reduces the need to overstock inventory to compensate for a lack of dependable data regarding what is or is not in stock. "We have saved quite a bit of money in bulk purchasing," he states.

Chuck Naylor, the hospital's inventory and finance manager of cardiology, who orders new products when they are needed, says he uses the system daily to confirm which items have been removed and which need to be purchased. He then places those purchase orders through the WaveMark system, and that data is sent directly to Saint Joseph's purchasing system. "Now I can sit at my computer," he says, "and, in a matter of minutes, see what needs to be ordered, and place those orders." Naylor also utilizes the system to track expirations by receiving alerts when items near their expiration dates, or by running his own search of items soon slated to expire. Previously, that function required staff members

to go to each shelf and visually inspect every label.

Initially, WaveMark tagged approximately 3,500 items for the hospital. Today, according to Colleen Terry, the firm's director of marketing, Saint Joseph's staff applies tags to any new products as they arrive from the distributor.

In the future, the hospital intends to tag lower-value items in order to save additional time that previously would have required employees to manually write the stock-keeping unit (SKU) number, or other data about an item being used, on paper, or to input that information into the computer.

The hospital pays a monthly service fee for use of the cabinets and readers, as well as for access to WaveMark's server. Franke says he expects the facility to gain a return on investment at a rate of two or three times the cost of the service.