Drug Distributor Uses RFID to Vend Meds

By RFID-enabling a refrigerated storage unit, ASD Healthcare is providing a Texas hospital with a way to ensure it always has enough drugs on hand for hemophiliac patients.

By Mary Catherine O'Connor

May 23, 2006—As Neil Herson was walking out of his suite at the Bellagio Hotel in Las Vegas early last year, he grabbed a bottle of water from the minibar. The bottle sat on a pressure sensor that, as he lifted the container, sent a message to Bellagio's billing system to charge the water to his account. Minutes later, when Herson was settling his bill at the front desk, the beverage was on the bill. That was when it occurred to him that a similar system could be used to address a very different business process.

Herson is president of ASD Healthcare, a distributor of specialty drugs such as those made to stem bleeding in hemophiliac patients. (ASD Healthcare is a division of AmerisourceBergen Specialty Group, which provides pharmaceutical manufacturing and distribution services, and is owned by drug distributor AmerisourceBergen.) The various drugs ASD sells for hemophilia patients can cost anywhere from $700 to $4,700 per vial, forcing most hospitals the company serves to keep very limited inventories of them on hand.

During surgery, however, a hemophiliac patient can require multiple vials of such drugs, which forces hospital staff and ASD to scramble to get more inventory to the hospital as quickly as possible. If ASD could enable hospitals to keep larger inventories of the drugs onsite, Herson realized, paying only for each vial as it is used, then that would simplify this process and free up some of the hospital's working capital. With RFID, ASD has been able to bring this concept to reality through a pilot program in a Dallas hospital that it expects to complete soon. Eventually, ASD hopes to deploy the program in hospitals across the country on a permanent basis.

After returning from Vegas, Herson shared his idea with David Richards, director of business operations at ASD Healthcare and the company's IT staff, which suggested that RFID be used to monitor and track the drugs. ASD then contracted VendingTechnology, a Dallas firm that provides solutions and integration services for vending-based technology, and asked its help in devising a means of equipping the Cubixx brand of refrigerated storage cabinets (where hemophiliac drugs are stored) with RFID interrogators (readers). Vending Technology, which supplies the Cubixx units to ASD, brought RFID manufacturer Sirit into the project.

Sirit devised a way to integrate UHF antennas into a storage cabinet's shelves, linking the antennas to a Sirit interrogator mounted to the exterior of the cabinet. Sirit says it customized its reader and antenna design to overcome the challenges of reading tags inside the Cubixx, which has metal in abundance and contains tightly packed rows of the tagged drug packages. Should ASD choose to deploy the RFID system widely and retain Sirit as its RFID hardware vendor, the drug distributor says, it would likely use Sirit's newly launched Infinity 510 reader (see Sirit Announces Infinity Interrogator), which was unavailable in time for the ASD pilot.

VendingTechnology enlisted Scopra, a maker of application and network management software, to create an

event-monitoring program that could link to the Sirit reader and update the refrigerator's inventory as tagged units of drugs were removed or added to inventory.

Before shipping the hemophiliac drugs to the pilot hospital, ASD workers hand-apply labels with an embedded Alien Technology EPC Class 1 UHF inlay (Alien's "M" inlay) to each product being tracked in the pilot. Each vial is shipped inside an individual cardboard package, and the label is placed onto the package. An interrogator encodes a unique ID to the tag, associated with the drug's national drug code, expiration date, lot number and manufacturer's product code. Employees then verify that the tag has been encoded before shipping it to the hospital.

When the drugs arrive at the hospital, the medical staff places the tagged vials into the Cubixx. The cabinet's reader sends each tag ID to the hospital's inventory system, and ASD gets a confirmation of receipt. Whenever a vial is taken from the Cubixx, the reader sends another message to the inventory system, removing it from inventory. Once the inventory of a specific drug falls to a predetermined level, ASD receives an automatic order for more vials. Throughout the pilot, ASD calls the hospital to confirm this order as adouble check. In the future, however, Richards hopes to eliminate this step.

If the system is widely deployed, ASD will provide the RFID-enabled Cubixx units to each participating hospital and install the system onsite. In addition to paying for drugs as they use them, the hospitals will also pay a small premium, says Richards, to help ASD cover the cost of the new system.

"The system provides value to the hospitals because it frees its working capital," Richards says. This ensures that each hospital has as much of the specialty drugs that it needs. He claims that other drug distributors also sell specialty drugs on a consignment basis, but that because they don't have RFID tags or a similar way to monitor inventory levels, representatives must travel to each hospital and make a physical check of the inventory each week. He also notes that this pilot and likely rollout are being done solely by ASD Heathcare, rather than its parent company, AmerisourceBergen. However, he says, AmerisourceBergen does have an RFID task force and is looking at how it might use the technology in its drug-distribution operations.