

AIR FORCE UNIT FILLS 3,600 PRESCRIPTIONS DAILY

Most Wired Runner-Up

Robotic innovation soars at the 10th



Photo by Dennis Rogers, United States Air Force Academy Photo Lab

Senior Master Sgt. Jimmy Sauls Jr. and Maj. Christopher Dun of the U.S. Air Force Academy's 10th Medical Group stand in front of the bottle dispensing units used to support the group's two Innovation robots. These robots are used to fill prescriptions at the United States Air Force Academy, Colorado, for more than 65,000 beneficiaries in the Pikes Peak Region.

A small but growing number of hospitals are deploying robots to clean floors or tote supplies to assigned destinations, yet few if any have used the devices in applications as sensitive and challenging as the pharmacy. At the U.S. Air Force Academy's 10th Medical Group, however, two robots are accurately filling prescriptions per day at the rate of about 10 humans.

A response to government reduction in force initiatives and a desire to expand robotic applications from elsewhere in the military led the Air Force Academy to secure \$2.1 million to buy the robots, says

Maj. Christopher A. Dun. Together, the devices fill about 3,600 prescriptions a day, easily outpacing the 300 to 500 prescriptions a human could fill in the same amount of time.

Both Maj. Dun and Senior Master Sgt. Jimmy D. Sauls Jr. explained the 10th Medical Group's experiences with the devices in an essay entitled "Robotic Innovation: Closing the Supply Chain Loop." The paper earned the organization a runner-up position in the 2006 Most Wired Supply Chain Innovator Award competition.

"The project initiative was to implement

and use robotic technologies to allow materials management, along with our hospital pharmacy, the ability to support a multiservice market within our region," the authors noted. The U.S. Air Force Academy site where Maj. Dun and Senior Master Sgt. Sauls work in materials management delivers pharmacy services for about 65,000 active and retired armed services personnel.

The primary business objective in adding the robots was to centralize requisition, receiving, stocking, management and distribution of all pharmaceuticals used to support three medical treatment facilities. The initiative was also aimed at reducing excess stock in the 1,760 line-item formulary.

Technology required for the venture ranged from two dispensing robots to bar code scanning technologies used to order and receive pharmaceuticals.

Maj. Dun and Senior Master Sgt. Sauls say the robotic systems accomplish every aspect of pharmaceutical support including selecting the appropriate bottle, filling the prescriptions and labeling the correct dosage information after the order has been filled.

"The doctor enters a prescription, which is then loaded into the robot. The robot finds the pill, holds the bottle, fills it, puts a label on it and sends it on a conveyor belt where a person validates the information and the drug and puts it in the right distribution box," Senior Master Sgt. Sauls says.

Personal data assistants interface with the procurement and management system, allowing the group's logisticians the ability to scan bar codes and perform a physical inventory.

"The user scans the bar code for each

item on the formulary and enters the number of items on the shelf. This information is electronically sent to our core management system in real time," the authors note. "The core management system takes the information provided and compares it with the existing levels for that item used by the Joint Refill Pharmacy. The management system then deducts the count entered by the user from the level and places an electronic order detail in a queue until all items have been scanned."

Once all items have been scanned, a member of the acquisitions department

executes the order electronically to vendors for next-business-day delivery. The automated process accounts for 80 percent to 100 percent of all pharmaceutical acquisitions.

The robotic and bar code technologies have led to a reduction in five full-time employees and allowed for reallocation of manpower for other required tasks.

Maintaining the robots and the software that powers them has proven to be a challenge, but Maj. Dun and Senior Master Sgt. Sauls say the robots and the savings they're delivering are there to stay.—**BK**

ABOUT THE AWARD

The Most Wired Supply Chain Innovator Award, launched in 2006, is jointly sponsored by Hospitals & Health Networks' Most Wired Magazine, Materials Management in Health Care and the Association for Healthcare Resource & Materials Management. For information on finalists for the 2006 award, see the July 2006 issue of Materials Management in Health Care.

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