By Mary Inguanti, MPH, RPh

The IntelliFill i.v. from ForHealth Technologies, Inc.

THE 615-BED SAINT FRANCIS MEDICAL CENTER IS LOCATED IN DOWNTOWN Hartford, Connecticut. The Level 2 trauma center also houses a 28-bed neonatal intensive care unit and a full-service cancer center. During my tenure as the system director of pharmacy, we faced the challenge of augmenting our IV program to complement our computerized physician order entry (CPOE) system and meeting the Joint Commission's patient safety recommendations for IV medications. It was eminently important to enhance our IV program.

The IntelliFill i.v. automated IV preparation robot seemed like the perfect answer to our needs. It is high-functioning and accurate, and helps to ensure the safety and effectiveness of the syringes we prepare in our pharmacy. In addition, the IntelliFill i.v. automates a very labor-intensive manual process, thereby leading to gains in efficiency.

System Functionality

The device can compound high-speed batches of syringes from bags of solutions hung in its automation deck, or patient-specific syringes from vials of liquid or powder medications stored in IntelliFilli.v.'s drug cabinet. Once we receive medication orders via our CPOE system, a pharmacist instructs a technician on the syringes that need to be prepared. The technician then gathers the syringe ingredients, if they are not already stored in the IntelliFill i.v., and assembles them in the device, after gowning according to USP <797> standards, as the IntelliFill i.v. is a sterile environment. Using the IntelliFill i.v.'s computerized database, the technician programs the robot to compound the appropriate syringe, and a pharmacist verifies the accuracy of the order before giving the go-ahead.

The IntelliFill i.v. then fills each syringe, confirms its weight, and applies a bar code to it. If there have been any errors in the compounding of a syringe, the machine will reject it. Completed syringes are captured in a receptacle from which they are retrieved for distribution to the nursing units via pneumatic tube. We run the device about 18 hours a day, and it delivers about 3,000 doses per day. The technician does not have to monitor the device continually, and therefore, can perform other tasks during the compounding process. As such, the IntelliFill i.v. has allowed us to achieve workflow efficiency gains. In addition, because of the high volume of syringes we produce each day, prior to our implementation of the IntelliFill i.v., our compounding personnel was prone to injury from repetitive motion. Using the device, we have reduced our employees' risk to such injuries.

Quality Control Checks

The IntelliFill i.v. optically scans the bar coded labels of our raw materials and captures images of them, as well. The device then stores lot number and beyond-use date information for each ingredient and final syringe in its database. In the event of a product recall, we are able to use the database to locate batches of syringes that have to be pulled from our stock. That recall support further affirms the safety of the products compounded by the IntelliFill i.v. At the end of the compounding process, the device weighs the final product to ensure it is within a specific range, thereby validating that it was filled correctly.

Complimenting the Overall Medication-Use Process

Saint Francis Medical Center stores bar coded medications in Pyxis cabinets on the nursing unit floor, and our nurses administer doses using bar coded medication verification at the bedside. The IntelliFill i.v.'s ability to bar code our unit of use syringes has complimented our method for delivering safer medications to our patients.

In fact, before implementing the IntelliFill i.v., our nurses would sometimes need to prepare immediate-use syringes on the unit floor. Of course, mixing a drug on a nursing unit countertop it is not sterile. Now every syringe is already prepared for the nurses; nurses are not attempting complicated dilutions on the floor, and thereby compromising the sterility and accuracy of IV medications. Nurses are experts at rendering care to the patients, and pharmacists are medication experts. So now highly trained people are assigned exclusively to their appropriate tasks. Since implementing the IntelliFill i.v., we have better aligned our roles and responsibilities. So, from its bar coding capabilities to our current ability to make IV medications more readily available to nurses, the IntelliFill i.v. has helped our organization achieve its patient safety and medication quality goals.

Cost Savings

An additional benefit to the IntelliFill i.v. is the cost savings. This IV program was initially implemented without adding any new staff members. The ability to generate drug-specific savings was also an outcome of this program.

I recommend that my colleagues evaluate the IntelliFill i.v. for their institutions. Given the potential for enhanced patient safety and workflow efficiency – not to mention costs savings via drug utilization – the device can be well worth the initial capital expenditure. ■

Prior to becoming the vice president of operations and quality for Saint Francis Medical Center in Hartford, Connecticut, Mary Inguanti, MPH, RPh, served as the system director of pharmacy for Saint Francis Care. A 21-year veteran of health-system pharmacy, she received her bachelor's degree in pharmacy and her master's degree in public health from the University of Connecticut.

WHERE TO FIND IT:

ForHealth Technologies, Inc . . . . .**Circle reader service number 103**
or visit www.fhtinc.com