

Case Study



At Mercy, Pharmacy Automation Boosts Safety, Efficiency and Satisfaction

At a Glance

Mercy Medical Center
Canton, OH

Solution Spotlight

- AcuDose-Rx®
- PACMED™
- ROBOT-Rx®

Results

- Increased dispensing accuracy to 99.9%
- Improved first-dose turnaround time by 42%
- Improved stat-dose turnaround time by 20%
- Reduced pick and check time by 75%
- Reduced inventory costs by \$55,000
- Redirected staff activities to new revenue-producing services
- Improved nursing satisfaction

Overview

Mercy Medical Center turned to automation to enhance patient care while increasing the efficiency of pharmacy operations. Implementing the ROBOT-Rx system reduced cart fill labor by 75 percent, freed pharmacy and nursing staff for more hands-on clinical activity, and enabled Mercy to implement new pharmacy based services generating \$138,000 in revenue.

Challenges

Mercy Medical Center in Canton, Ohio, is a 476-bed facility with centers of excellence in heart care, stroke care and cancer services, and the county's only center for robotic surgery. Until 2006, Mercy's pharmacy operations consisted of a 48-hour manual cart fill on Monday and Wednesday, and a 72-hour cart fill on Friday. Three nights per week, technicians spent up to eight hours filling carts with up to 8,200 unit-dose medications, while pharmacists spent another five to six hours checking each dose.

The system created numerous challenges, both for pharmacy staff and nurses distributing medications, recalled John Feucht, Mercy's director of pharmacy services.

"The manual process was highly labor-intensive," Feucht said. "Nurses had to count every narcotic dose, every shift, which cut into patient-care time. Beyond

long turnaround times, they had to deal with missing orders and meds, and cluttered drawers made it difficult to find patients' orders. Often, nurses filed missing dose forms because it was simpler than rooting through the cart to locate the patient's medication. Since nurses tracked inventory manually, the system could be circumvented easily, which led to charge capture and inventory control problems.

"Clearly, we needed some form of automation, not only to maximize patient safety, and improve accuracy and financial performance, but also to allow us to redirect staff time into activities that contribute to enhanced patient care," Feucht said.

Answers

Late in 2006, Mercy assembled a multi-disciplinary team to investigate options for improving medication dispensing and delivery.

"Mercy's physical design—all patient units have long hallways with 30 or more patient beds per unit—steered us to a hybrid distribution system combining elements of our old, centralized system with a decentralized model," Feucht said. "At the same time, we wanted to create the foundation for bedside medication verification."

Following an extensive review of third-party vendors, Mercy chose a phased

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John Feucht, R.Ph.
Director of Pharmacy Services
Mercy Medical Center

implementation of McKesson automation solutions anchored by the ROBOT-Rx system, which automates medication storage, dispensing, returning, restocking, and crediting. Mercy began by packaging oral solids using the PACMED high-volume packager in conjunction with implementing AcuDose-Rx medication dispensing cabinets. In 2008 Mercy completed the conversion with ROBOT-Rx.

Feucht said, "AcuDose-Rx eliminated the need for shift counting of stock meds and narcotics, improving charge capture, and giving us a better platform for monitoring and detecting potential drug diversion. PACMED lets us buy in bulk and standardize bar-coding on our unit-dose packaging."

The addition of the ROBOT-Rx with its envelope system closed the automation loop. The unparalleled accuracy of ROBOT-Rx enabled staff pharmacists to spot-check only 10 percent of orders, approved by the state Pharmacy Board. Greater speed and accuracy enabled daily cart exchange, reducing the number of stock medications kept on nursing units, along with the potential for error. It also enabled Mercy to handle returns and manage expiration dates much more effectively.

Results

Today, Mercy's pharmacy performs daily cart fill of oral solids and injectables, averaging 4,225 cart fill doses and 1,145 first-doses, with a total pick-and-check time of 3.5 hours, a 75 percent improvement. First-dose turnaround time decreased by 42 percent, while stat dose turnaround time is 20 percent lower.

Nursing workflow remains the same, but with far fewer missing doses according to satisfaction surveys. AcuDose-RX cabinets eliminated the need for shift counts even as

medication selection errors are reduced. Missing medication orders also dropped by 40 percent, Feucht noted, with most instances now related to synchronization issues.

Automation and the improved accuracy it provides help drive the medication safety process deeper into the normal workflow patterns of Mercy's pharmacists, technicians, and nurses, freeing them from time-consuming, repetitive, manual tasks so they can focus on other clinical activities and improve the quality of patient care. Nursing staff report gaining an additional hour per shift to spend on direct patient care. With more time to spend on other clinical activities, job satisfaction among staff pharmacists rose to 95 percent, and Mercy has been able to maintain a full staff for more than two years.

"Our pharmacy staff can now focus primarily on clinical activities, which are more rewarding for them and a source of additional revenue for Mercy," Feucht said.

Results also can be measured more directly at the bottom line:

- Expired medications decreased by 5 percent.
- Better overall inventory management yielded \$55,000 in annual savings.
- By redirecting pharmacists' time from order filling into clinical activities, Mercy also implemented full-time anticoagulation services that contribute \$138,000 in additional annual revenues, without adding staff.

"Efficiencies and cost savings are important, but in the end this is all about patient care and safety," Feucht pointed out. "Automation removes human error and provides a proper foundation for ensuring that the right patient gets the right medication at the right time, and in the right dose."

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