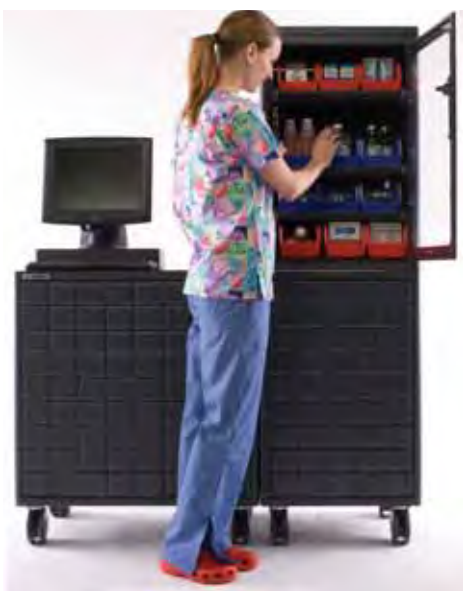
By Rick Hansen, BS, MBA/HCM

# Automated Dispensing Cabinets from medDISPENSE



PRIOR TO MAY 2004, THE 57-BED, ACUTE-CARE ZEELAND COMMUNITY hospital used a manual floor stock system. On average, the ER experienced $10,000 in lost drug charges per month, and the night cabinet was frequently stocked out, leading to complaints from nursing. Pharmacy and nursing searched for a system to improve inventory management and revenue capture, decrease administration turnaround times, and provide safer dispensing and administration.

To address these issues, in May 2004, we implemented medDISPENSE's automated dispensing cabinets (ADCs), which hold up to six line items per drawer. Nurses access drugs by selecting a patient's name from the ADC's touch-screen. A list of drugs profiled for that patient appears on the screen, and the nurse selects the appropriate drug. (In the ER, nurses provide the first few letters of the drug needed and select from a list of possible medications.) A screen prompts the nurse to enter the number of units needed, and alerts the nurse to any patient allergies. The appropriate cabinet door opens, providing access to the correct drug. If the drug is a controlled substance, the system asks the nurse to perform an inventory count.

The ADCs interface with the pharmacy information system to communicate patient information, admissions, discharges, transfers, and billing information between the systems. The ADCs' inventory management features allow technicians to restock the cabinet when items fall below pre-established par levels, and a profile interface allows nurses to dispense drugs only after a pharmacist has reviewed the order. Nurses can override the profile feature with a second "witness" nurse log-in.

## Implementation Process and Results

Our implementation was two-pronged and took about three years in total. We first rolled out a cabinet in the ER, another in the surgery unit, and a night cabinet, because of the immediate financial benefits we stood to gain from decreasing our lost drug charges in the ER, the narcotic control provided for anesthesia, and the drug access the night cabinet would provide our nurses after pharmacy hours. medDISPENSE staff came to our facility the week before the first implementation to train our pharmacy and nursing staff. Once the equipment was in place, it took the pharmacy staff about one week to fill the three cabinets. Since the implementation, our lost drug charges have decreased to just $100 per month , due to the cabinets' ability to accurately and automatically capture billing information upon dispense, and nursing satisfaction has significantly increased with the elimination of frustrating stock-outs.

In the second phase of our implementation, we went live with cart-less dispensing on our inpatient units. In April 2006, we rolled out ADCs on the med surg pediatric (MSP) unit, ICU, maternity unit, endoscopy rooms, pre-op area, sterile area of surgery, and post-anesthesia recovery room. The medDISPENSE staff returned to the hospital to assist with the installation and provide refresher training. Initially, we used the medDISPENSE cabinets only for PRN drugs and controlled substances, and after six months, we introduced a completely cart-less dispensing model. At first, nurses were reluctant to change to a cart-less system, but they soon found the new system to be user-friendly and realized it provided faster medication order turnaround.

Our ongoing goal is to maximize the number of oral drugs available in our main nursing unit ADCs. Since we could not stock every on-formulary drug in every cabinet, we stock the most commonly used drugs for that nursing unit in its cabinet and leave space for 18 additional, temporary drugs needed for particular patients. Cabinets are typically stocked with controlled substances, common IV bags, injectables, and tablets. Patient-specific IV bags are dispensed directly from the pharmacy. In the OB cabinet, which serves as our back-up night cabinet and has extra drawer space, we store topical creams and eyedrops and eardrops.

We changed our standard administration times from a base of 8:00AM to 9:00AM, allowing pharmacy time to stock temporary drugs on the nursing units each morning. Although our nurses had to adjust the timing of their vital signs-capture duties to accommodate the change in administration times, it was not a difficult transition.

Pharmacy's tasks changed significantly in the move from cart-fill dispensing – performed on a per-patient basis – to dispensing per cabinet. We now have three restocks per day: the ER, OB, MSP, and ICU are stocked at 10:00AM and 3:00PM, and surgery is stocked at 1:30PM. It takes about 20 minutes to stock each cabinet. Prior to releasing stock to the floors, a pharmacist checks the order, and a technician delivers the drugs using a cart. At the cabinet, the technician uses the ADC's on-board bar code reader to scan each drug and the correct drawer opens for stocking. Restocking frequently allows our department to stock necessary drugs in sufficient quantities, cutting down on "missing dose" calls to the pharmacy.

With a cart-less system, our pharmacists have fewer daily patient fills to check and ultimately save time during the order entry and dispensing processes. Hence, they now have more time to spend on clinical functions, such as renal dosing checks, IV to PO conversion assessments, and Coumadin dosing assessments.

## Conclusion

By implementing medDISPENSE's ADCs, Zeeland Community Hospital has realized a number of benefits, including decreased lost drug charges and increased pharmacist involvement in clinical activities. In addition, the new system has led to better staff satisfaction with our dispensing system – an improvement that, while difficult to quantify, is ever valuable to our organization. ■

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*Rick Hansen, BS, MBA/HCM, has served as the director of pharmacy for Zeeland Community Hospital for eight years. He received a BS from Ferris State University College of Pharmacy and an MBA in health care management from the University of Phoenix. Hansen has worked in hospital pharmacy for 20 years.*

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