

ORGANIZATIONAL PROFILE



St. Dominic-Jackson Memorial Hospital

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Jackson, MS 39216
(601) 200-2000
www.stdom.com

Industry: Healthcare

Employees: 2,000

PROJECT HIGHLIGHTS

- Established a closed-loop, bar-code-based system throughout the medication-use process.
- Achieved a bar-code medication point-of-care (BPOC) program—distinguishing itself among the top 5-10% of U.S. hospitals (2005).
- Accomplished BPOC with an immediate 99.9% scan rate, enabled by its bar-code automation foundation.
- Increased by 801% the number of pharmacist-patient interventions over five years.
- Improved the amount of time pharmacists spend on clinical activities from 0% to 78%.
- Achieved \$1.8 million in annual cost avoidance due to pharmacist-patient interventions.
- Reduced by \$204,000 the cost of medication inventory over five years.

Implementing a "Bedside-Back" Strategy as the Foundation for Patient Safety

Background

Established in 1946, St. Dominic Hospital is a 535-bed, not-for-profit, acute care hospital, owned and operated by the Dominican Sisters of Springfield, Ill. Located in Jackson, Miss., St. Dominic Hospital is the largest subsidiary of St. Dominic Health Services. The hospital offers a wide selection of medical/surgical services, including both comprehensive inpatient and outpatient services, ranging from the technically advanced diagnostic imaging services to the dedicated excellence of the Mississippi Heart Institute. St. Dominic remains at the forefront of diagnostic and therapeutic technology, and has been accredited by the Joint Commission on Healthcare Organizations continuously since 1955. St. Dominic Hospital is a recipient of the Mississippi Quality Award.

The Challenge

The 1999 Institute of Medicine (IOM) landmark report, "To Err is Human: Building a Safer Health System," served as a clarion call for hospitals across the country. The report conservatively identified medical errors as being the eighth leading cause of death in the United States. The resultant healthcare, lost income, and disability costs were estimated at \$17 billion to \$29 billion annually.

Furthermore, the report singled out medication errors as a significant problem. Errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them. An estimated 2 percent of all hospital patients nationwide experienced a preventable adverse event (ADE) due to drug errors, the report said, increasing hospital costs by \$2 billion. For a 700-bed teaching hospital, those costs totaled approximately \$2.8 million annually.

The report's findings and tone captured the attention of the Board of Directors at St. Dominic-Jackson Memorial Hospital. The Board charged the Pharmacy and IT Departments to develop a cohesive plan for implementing technology solutions that would enhance patient safety. At the forefront of this plan was a closed-loop, bar-code-based medication management system—from the time medications arrive at the loading dock to when the medications are administered at the point of care.

The Results: Quantifiable Benefit Proof Points

1. Patient Safety: Pharmacy

Soon after the IOM report, St. Dominic selected McKesson to implement its closed-loop vision. In the central pharmacy, the hospital replaced manual tasking with automation solutions, including the ROBOT-Rx® system and MedCarousel® technology.

"My vision is to have a central pharmacy with no pharmacists. Pharmacists would use their knowledge and education on clinical intervention, working with physicians and nurses as part of the patient's medical team. The pharmacy automation that was the foundation for bedside bar-code scanning enabled us to go a long way toward achieving this vision."

Mary Helen Bowen, Assistant Vice President, Pharmacy Services



"The pharmacy is now front and center in the entire spectrum of hospital care, from the time the medication comes through the door to all the way to bedside scanning. One of the keys to the successful implementation of pharmacy automation and bar-code scanning at the bedside has been the decision to implement a single-vendor solution. A project of this scope and complexity required a vendor that had the product offerings, industry knowledge, innovation, and resources to make the project successful. The vendor had to be capable of understanding the 'big picture' and collaborating effectively with multiple departments. Partnering with one vendor has worked very well and remains a prudent decision for those at the crossroads of implementing a multi-vendor solution."

Wendell Pinegar, Senior IT Analyst



"As a result of the pharmacy automation project, our roles as pharmacists have completely changed. We now have time for clinical intervention, interacting with doctors, nurses, and patients as part of a patient's medical team. We impact patient lives by positively influencing outcomes and explaining medications to patients. We prepare medical histories that catch potential medication problems before they occur. And, we may be able to shift patients from IVs onto oral medications so that they can return home earlier. Basically, automation allows us to 'get in the game' versus being in a little room."

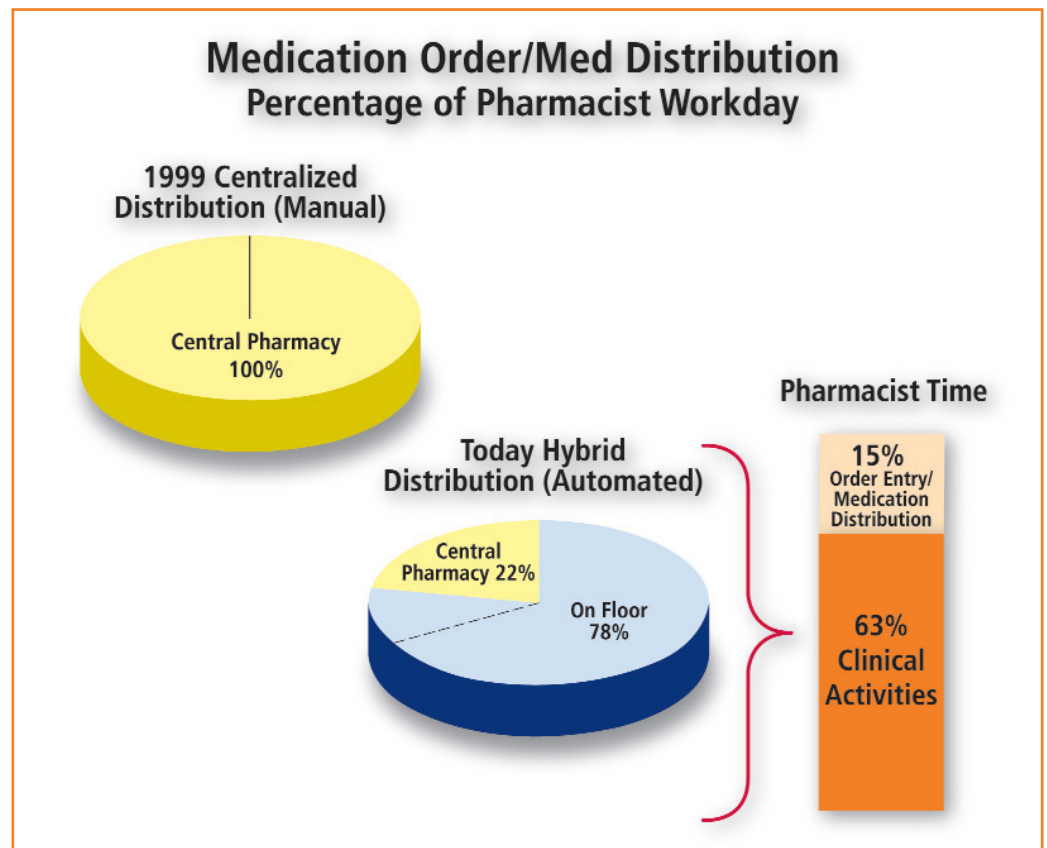
Catina White, Supervisor, Pharmacy Services

ROBOT-Rx automates the storage, dispensing, returning, restocking, and crediting of bar-coded medications. It is so accurate that the Mississippi State Board of Pharmacy waives a mandatory check of patient medications dispensed by ROBOT-Rx. Rather than having a pharmacist check each medication, St. Dominic pharmacists perform a monthly QA check. After six years in operation at St. Dominic and six million dispensed medications, the ROBOT-Rx system has zero documented errors.

MedCarousel is a medication storage and retrieval system that automates medication dispensing through a combination of rotating shelves, pick-to-light technologies, and forced-compliant bar-code scanning. To ensure that a continuous supply of bar-coded, unit-dose medications is always available, the hospital uses the PakPlus-Rx® packaging service.

This hybrid distribution system established the bar-code-based foundation sought by St. Dominic. Up to 95 percent of all medications are dispensed automatically by pharmacy in patient-specific unit doses. Nurses also can dispense some first doses, narcotics, floorstock, and PRN medications, from unit-based AcuDose-Rx® automated medication dispensing cabinets. The NarcStation™ vault units and software system comprise a self-contained, closed-loop system for controlled substances.

After just a few short months, pharmacy leaders were convinced that the new automated systems were reducing the risk of medication errors substantially, while also improving workflow efficiency and productivity. These improvements enabled the hospital to redeploy pharmacists. Instead of spending 100 percent of their collective time on manual tasking in pharmacy, pharmacists now are spending 78 percent of their time in clinical roles positively impacting patient outcomes.



"The justification for this initiative was completely based on patient safety. Patient safety has always been in the forefront at St. Dominic's. With the Institute of Medicine study outlining patient safety issues across the entire national healthcare system, our Board directed us to explore any initiatives that could yield improved patient safety and care. Other gains would be secondary, the focus was achieving the best possible patient safety."

Mary Helen Bowen, Assistant Vice President, Pharmacy Services



"The electronic point-of-care system for bar-code scanning the patient ID and medications is much faster versus the old paper-based methodology. It is easy to learn, and easy to use. It is more accurate, and provides a real-time medication schedule, giving a report at the end of the shift if medications are not administered. The patient medication history is extremely helpful in many situations. It is a great use of technology for assuring everyone—physicians, pharmacists, nurses and most important of all patients—benefit from the Five Rights of Medication Administration."

Kristen Bates, Nurse, Cardiology Unit

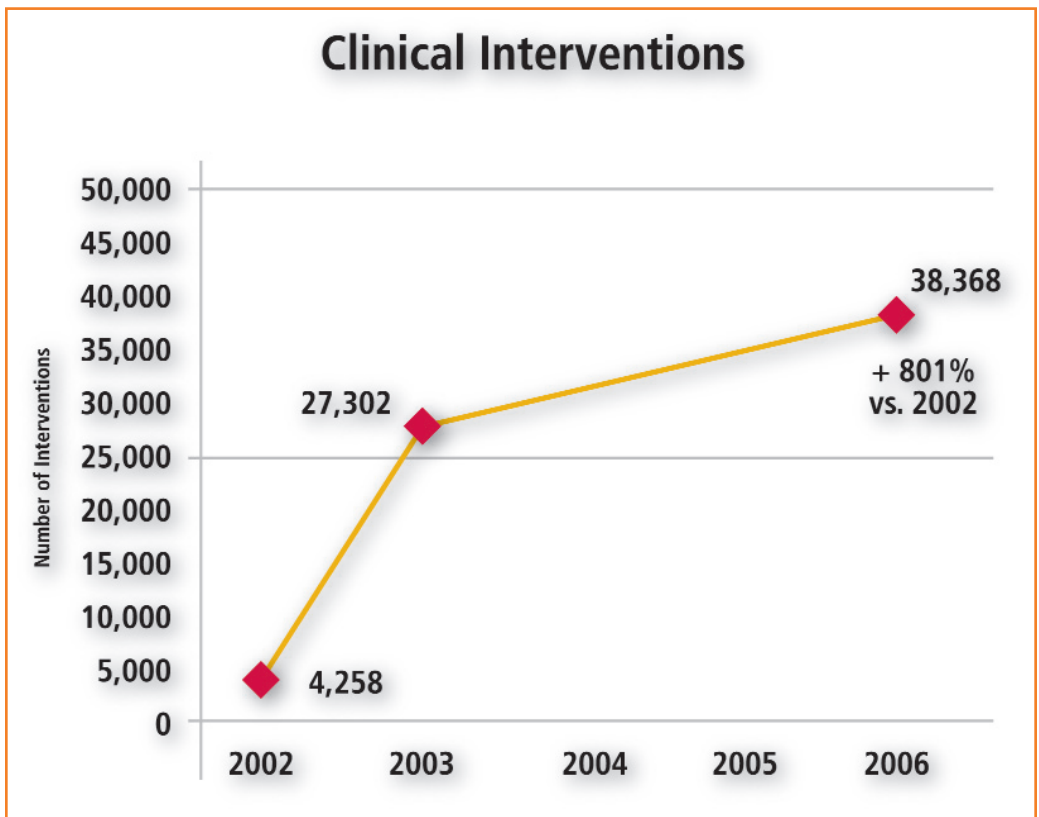
2. Patient Safety: Nursing

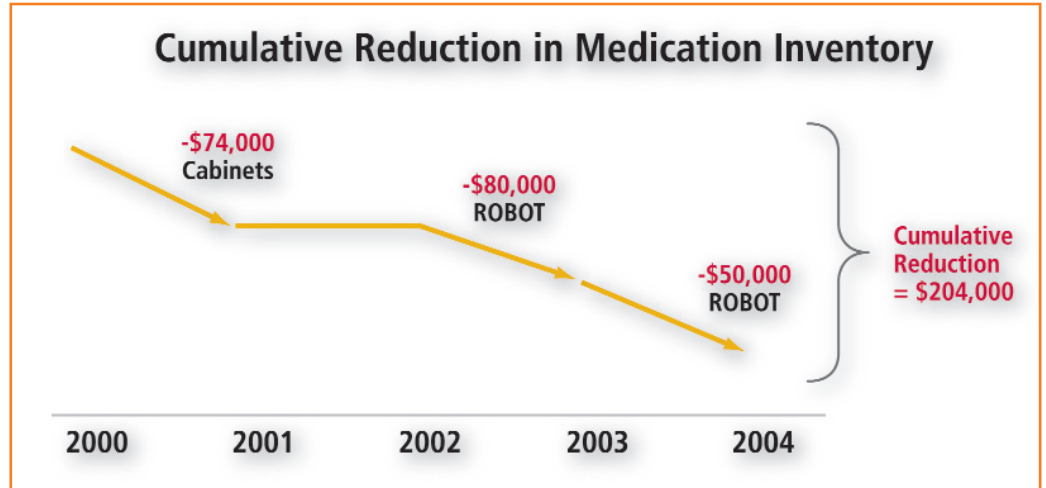
With a solid bar-code foundation established for delivering patient-specific, bar-coded medications to patient rooms, St. Dominic turned its attention to scanning medications at the point of care. Caregivers who previously had manually administered medications transitioned to the automated Horizon Admin-Rx™ system. Using bar-code scanning and software technology, nurses electronically perform "five rights" medication administration and capture critical data.

When St. Dominic went live with its BPOC program, it came out of the gate with a 99.9 percent scan rate of bar coded medications at the bedside. This would not have been possible without the foundation established by automation solutions in the central pharmacy. The fact that nurses were accustomed to receiving and using patient-specific medications in unit-dose, bar-coded form also contributed to the technology's accelerated adoption.

With BPOC fully in place, St. Dominic is among the nation's patient safety leaders in terms of medication administration. According to Patient Safety and Quality Healthcare estimates, less than 10 percent of all hospitals nationwide had adopted BPOC by 2006.

Additionally, electronic point-of-care administration gives the nurse an electronic schedule for administering medications, thereby enabling a nurse to quickly and conveniently check medication schedules at any time during the shift. It also provides patient profiles, patient drug administration history, and real-time alerts/warnings for new, changed, or cancelled orders.

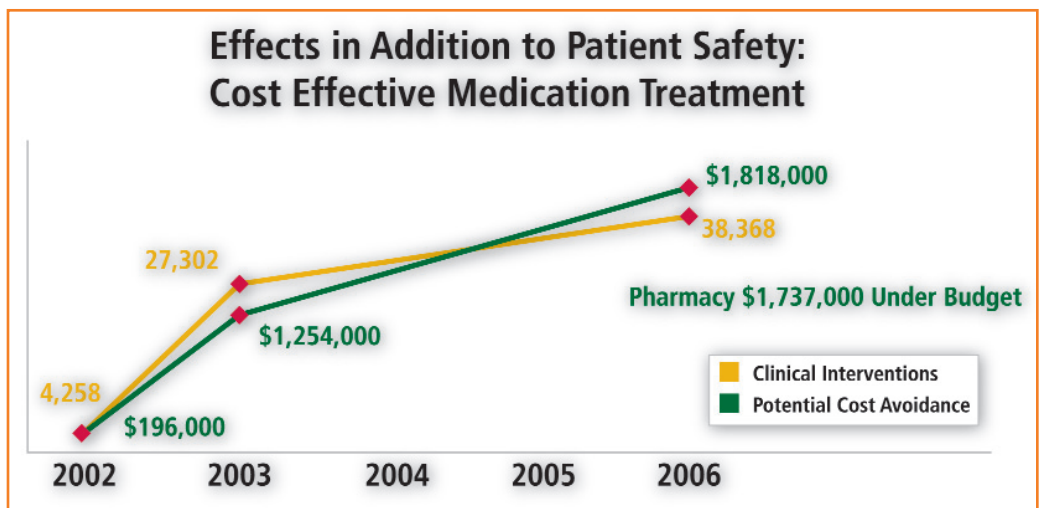




Summary

This independent evaluation demonstrates that St. Dominic-Jackson Memorial Hospital benefited substantially by introducing an integrated, closed-loop, bar-code-based system for managing medications from the loading dock to the patient's bedside. Achievements include:

- The hybrid medication distribution model, including ROBOT-Rx and MedCarousel, established the essential bar-coding foundation for BPOC.
- BPOC was implemented with an immediate 99.9% scan rate, addressing the most critical step in the medication administration process for error prevention.
- St. Dominic is now in the top 5-10% of hospitals nationwide that have achieved BPOC.
- Increased by 801% the number of pharmacist-patient interventions over five years.
- Up to 78% of pharmacist time is now spent on patient floors as part of the overall health care team. Prior to automation, the amount of time dedicated to clinical roles was zero.
- Achieved \$1.8 million in annual cost avoidance due to pharmacist-patient interventions.
- Reduced by \$204,000 the cost of medication inventory over five years.
- Partnering with McKesson as a single vendor allowed for understanding and maintaining the system efficiently.
- Collaborative efforts between all teams—IT, pharmacy, nursing, and physicians—was achieved because of a single-minded purpose: patient safety.



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