

## HCA, Inc.

### HCA Averts More Than Two Million Potential Medication Errors Across 180+ Medical Centers

#### Customer Profile

Based in Nashville, Tennessee, HCA is the nation's leading provider of healthcare services, comprising 182 locally managed hospitals and 94 outpatient surgery centers in 22 states, England, and Switzerland. At its founding in 1968, HCA was one of the nation's first hospital companies.

#### A National Call for Improved Patient Safety

Since it was founded nearly 40 years ago, patient safety has remained a top priority for HCA. While HCA has made a number of process improvements over the years to ensure a high level of patient care, the healthcare provider's commitment to patient safety was taken to a new level in 1999 when the Institute of Medicine (IoM) released its now well-known report on medication errors. Aptly titled *To Err Is Human*, the report estimated that between 44,000 and 98,000 Americans die each year as a result of preventable medication errors.

In direct response to the IoM report, HCA embarked on a dedicated and multidisciplinary medication safety project in February 2000, bringing

together nurses, pharmacists, physicians, and administrators to address the issue. Led by HCA's Quality Department, the Medication Safety project focused on all aspects of the drug process: ordering, transcription, dispensing, administration, and monitoring. As a result, pharmacy processes and pharmacists became critical to the project development.

"Since medication errors represent the largest proportion of preventable inpatient injuries, we decided that the best way to deal with this problem was to create a proactive team of people dedicated to improving the medication use process. We started at the last step—drug administration at the bedside—and worked our way backward to identify the necessary requirements and changes. We found that all changes required a critical analysis to ensure that the new process would not create additional challenges. Throughout the process, the healthcare mantra *primum non nocere* (above all, do no harm) became more than just an expression," says HCA Director of Pharmacy Services Jim Eldridge.

**"At HCA, we are continually identifying new and better ways—through best practices and modern technology—to support our caregivers' efforts to treat patients. Our focus on improving the medication use process and our overall focus on patient safety is an extension of our 'putting patients first' culture. The tools and resources found in the High Performance Pharmacy initiative are invaluable to improving processes and providing patients with the highest level of care."**

- Jim Eldridge, Pharm.D., MBA, Director, Pharmacy Services, HCA



The Skyline Medical Center in Nashville, Tennessee, is one of HCA's 180+ medical centers.

#### Goal

- Improve medication safety

#### Solution

- Implement a combination of new procedures and technologies to improve patient safety throughout the full medication use process: prescribing, transcription, dispensing, administration, and monitoring

#### Results

- Averted more than 2 million medical errors in 2005 across 182 hospitals

## The Road to Achieving Large-Scale Medication Safety

Implementing such a widespread medication safety initiative was not an easy task. Although the initial decision at HCA to pursue a more focused and widespread medication safety initiative was quickly embraced by corporate HCA leaders, the project team faced several challenges. For one, the various HCA facilities had not previously worked together to resolve clinical care issues. Up until that point, clinical care processes were always defined at the local level by

each hospital's medical staff. For the first time, the corporate office was proposing that it go into hospitals to discuss the details of how each facility should handle medication safety.

Another challenge was that HCA's facilities were not in sync with each other regarding medication safety regulations. Some were well ahead of the regulations, while others lagged behind. This discrepancy made it difficult for the team to establish a common starting point from which all the hospitals could work toward a shared goal.

To address these challenges and ensure that all HCA facilities operated according to the same set of regulations, the project team created and administered The Plan for Medication Safety. "The Plan," as it is usually referred to, describes the processes by which HCA assures the safe delivery of medications to patients," explains Eldridge. "It was designed based on patient needs and rights, HCA's mission and vision, and standards of professional practice."

# A Closer Look: Inside an HCA Hospital Pharmacy

## Emory Eastside Medical Center

Founded in 1980, Eastside Medical Center is a 200-bed, full-service healthcare facility on a rapidly growing, dual campus in Snellville, Georgia. Employing 23 full-time equivalents (FTE), the Eastside pharmacy department faced a 30 percent staff shortage and an understaffed nursing department. Without automation, it was time-consuming to administer bar-coded medication. Decentralized medication dispensing formulary posed productivity challenges, as nurses spent too much time walking back and forth between cabinets. Eastside began the initial planning stages of its electronic medication administration record (eMAR) implementation in fall 2002 and went live in fall 2003.

### Solutions/Strategies

- Created an internal flowchart of the medication administration processes for all nursing units to identify eMAR implementation goals and procedures
- Implemented a robot to automate the process of bar-coded unit dose medication packaging
- Established an internal eMAR task force to secure key stakeholder approval

throughout all implementation stages, and to educate and train pharmacy, nurses, and other relevant staff

### Key Results/Benefits

- Reduced serious medication errors by more than 70 percent
- Increased clinical involvement by pharmacy—from 260 to 4,800 interventions per year

- Raised pharmacy's profile as a valued and strategic contributor to improved patient care

### Biggest Lessons Learned

- The amount of resources required should not be underestimated
- The unexpected should always be expected

**"One of the biggest challenges we faced in implementing eMAR was ensuring we had enough resources—you cannot underestimate the number of people or planning it will take to coordinate a large-scale initiative like medication safety. Ensuring you have buy-in early on from all key stakeholders, such as hospital administration and nurses, is also critical. Since going live with eMAR in 2003, we've not only seen over a 70 percent reduction in serious medication errors, but the biggest unexpected benefit has been the dramatic increase in clinical involvement by pharmacy. Through greater automation and our role in spearheading the eMAR implementation, we now have more time to spend with patients and are receiving increased recognition for our role in improving patient care."**

**“Achieving a High Performance Pharmacy is not all about spending millions on the latest technology—it's about rethinking and improving processes. Every organization can and should be doing at least that.”**

- Jim Eldridge, Pharm.D., MBA, Director, Pharmacy Services, HCA

Creating “The Plan” was only half the battle. Next, the project team had to ensure the plan would be fully and consistently adopted across all HCA facilities. According to Hayley Burgess, Director of Medication Safety, HCA's secret to success was its commitment to bringing in key stakeholders and champions from each facility at a very early stage. HCA's systemwide culture and long-standing commitment to patient safety also contributed to the project's success. “HCA's medication safety initiative stems from a corporate-

wide passion for doing the right thing—it represents why we entered healthcare in the first place and our enthusiasm for making things better. This passion is shared by HCA's leadership and extends all the way down. It's because of this attitude, and our commitment to involving key champions early on, that we have achieved the success we have.”

### **From a Dream to a High Performance Reality**

In only five years since it began its full-scale medication safety initiative, HCA has

successfully increased patient safety across all of its 182 hospitals. HCA's adoption of electronic medication administration record (eMAR) and electronic provider order management (ePOM) technologies has played a key role in the organization's success.

After studying how standardized bar-code technology could reduce the risk of medication errors and increase documentation accuracy, HCA was convinced that implementing eMAR was the right approach. With eMAR in place,

## **A Closer Look: Inside an HCA Hospital Pharmacy**

### **Medical Center of Plano**

Founded in 1975, the Medical Center of Plano is a 423-bed, JCAHO-accredited medical/surgical hospital in Plano, Texas, that offers a broad array of patient services including a high-risk antepartum and a Level III NICU. Employing 46 people (39 FTE), the pharmacy department lacked resources and automation technology to bar code more than 100,000 medication unit doses per month and faced high automation costs. Decentralized formulary caused delays in medication administration; nurses often waiting in line at automated dosing machines. As the first hospital in the Dallas-Fort Worth area to implement an eMAR system, the Medical Center of Plano began the initial planning stages of its eMAR implementation in winter 2002 and went live in summer 2003.

### **Solutions/Strategies**

- Implemented an automated packaging system that produced patient-specific unit medication doses; teamed with 10 other HCA facilities in North Central Texas to secure highly competitive pricing
- Established a medication safety steering committee comprised of pharmacy, nursing, and respiratory to identify project goals and strategies

- Re-evaluated medication dispensing formulary; transitioned from a decentralized to a cart fill model

### **Key Results/Benefits**

- Increased patient safety through accurate medication error prevention, tracking, and reporting
- Enhanced communication between pharmacy and nurses; pharmacy now seen as having a greater impact on patient care

- Improved workflow and medication administration processes

### **Biggest Lessons Learned**

- Closely assess the medication dispensing formulary and its potential effects on planned projects
- Carefully evaluate new technology purchases with a focus on equipment lifespan and if/when it will need to be replaced

**“The implementation of eMAR has impacted the quality and future direction of patient care at our facility in so many positive ways. The improvement of patient safety has clearly been the number one benefit, but we continue to recognize so many more. Because of the steps we went through to achieve a higher level of patient safety, we've also significantly improved a number of workflow processes for greater efficiency, improved the dialogue and relationship between pharmacy and nursing, and substantially raised pharmacy's profile and reputation within the hospital for our important contributions to serving patients.”**

- Celene Bishop, Director of Pharmacy, Medical Center of Plano



*The 8 Dimensions of High Performance*

**A High Performance Pharmacy is one that demonstrates the highest levels of patient safety, clinical quality, and financial performance. McKesson and the Health Systems Pharmacy Executive Alliance completed a landmark study that identifies the 8 Dimensions of High Performance—the programs, services, and practices at which a health system pharmacy must excel to be able to deliver the best clinical outcomes for patients and financial results for the entire health system. For more information visit [HighPerformancePharmacy.com](http://HighPerformancePharmacy.com).**

## McKesson Corporation

One Post Street  
San Francisco, CA 94104

[www.mckesson.com/pharmaceutical](http://www.mckesson.com/pharmaceutical)  
1.800.571.2889

©2006 McKesson Corporation  
All rights reserved. MHS-724-11/06

each patient admitted to an HCA facility receives an armband with a bar code, which corresponds to the patient's current medical record, including drug history, allergies, and lab results. Bar-code identifiers also appear on shrink-wrapped doses of medication. Before a medication is administered, bar codes on the patient armband and the medication are scanned, allowing the nurse or therapist to verify that the right patient is receiving the right drug in the right dose at the right time. The software checks each medication against the patient's drug history and lab results. If conflicts or potential drug interactions are identified, warnings alert the nurse to double check, verify and/or call the doctor before administering the medication.

While the process of implementing eMAR may seem straightforward, the project was not without its challenges. For one, the eMAR infrastructure had to be built from the ground up. Standardization of policies and procedures across HCA were also met with many exceptions that had to be addressed. Packaging processes to create bar-coded unit doses of medication had to be developed. And, a system was

needed to integrate the bar-code scanners with the hospital information systems. In total, a number of hardware and software technologies had to be identified, modified, or developed for the successful implementation of eMAR.

Today, all 182 HCA hospitals are using eMAR, resulting in the aversion of more than 2 million medical errors in 2005 alone. Without eMAR, HCA estimates that 2 percent of medication doses would be given in error.

To complement eMAR, HCA is also in the process of implementing an ePOM system across all of its facilities, by which physicians submit medication orders for their patients using a software application in HCA's Clinical Patient Care System (CPCS). Through the company wide use of ePOM, HCA anticipates that it will be able to reduce medication ordering errors, improve accuracy and completeness of physician orders, and reduce physician time spent on admission, discharge, and transfer orders. To date, ePOM has been rolled out to 12 HCA facilities.