

## ORGANIZATIONAL PROFILE



### Comanche County Memorial Hospital

3401 N.W. Gore Boulevard  
Lawton, OK 73505  
(580) 355-8620  
www.ccmhonline.com

**Industry:** Healthcare

**Employees:** 1,700

## PROJECT HIGHLIGHTS

- Established a bar-code foundation to support patient safety, productivity, and inventory management initiatives.
- Forecast a 42% ROI in less than eight years, with a cost of capital of 7%, and a project net present value of more than \$1.7 million.
- Projected an eight-fold increase in time spent by pharmacists on clinical intervention activities, resulting in annual 10% reduction in ADEs and related costs.
- Cut pharmacist checking labor by 90%.
- Improved technician picking labor by 33%, and reduced technician training time by 33%.
- Cut missing doses by 92% and medication cabinet stock outs by 75%.
- Saved \$26,000 per year by buying medications in bulk.
- Gained \$80,000 in additional annual revenue as a result of automated medication charge capture during administration.
- Reduced by 54% annual cost of medication write-offs due to expired medications.

# A “Stacked” Medication Supply Chain Rollout Leads to Rapid Safety, Efficiency, and Cost Benefits

## Background

Comanche County Memorial Hospital (CCMH) was founded in 1951 by a group of community leaders with the charitable mission of ensuring the availability of medical care to all, regardless of social status. Today, CCMH is a 283-bed hospital with 1,700 employees and a network of more than 150 physicians.

CCMH received the 2008 Distinguished Hospital Award for Patient Safety, placing it among the top 5 percent of hospitals nationwide for patient safety, according to HealthGrades, a leading healthcare ratings company. CCMH also was presented the 2008 Premier Award for Quality from the Premier healthcare alliance, awarded to less than one percent of 3,800 eligible hospitals nationwide.

## The Challenge

At CCMH, the medication distribution and administration system were a loosely connected series of disparate manual processes. Unit-based automated medication cabinets served as the primary medication-dispensing apparatus. Pharmacy technicians picked the medications, and pharmacists checked 100 percent of them prior to cabinet restock. Nurses manually picked and checked the medications prior to patient administration.

In this manual environment, the possibility of human error was present in each step. The vast majority of pharmacist time was spent on medication distribution and order entry tasks, severely limiting time for clinical activities. Nurses, meanwhile, were forced to balance time constraints against the responsibility of dispensing medications from cabinets positioned long distances from patient rooms.

Other issues included:

- No real-time monitoring of medication usage and inventory levels.
- Poor tracking of medication expiration dates resulting in unnecessary costs.
- No automated method for charge capture and crediting.
- Inadequate tracking and reimbursement analysis for the federal 340B Drug Pricing Program, putting CCMH’s program compliance at risk.

Seeking to create the safest, most productive, and cost-efficient environment possible, hospital leadership built an entirely new, integrated, bar-code-based medication supply chain—from the point of entry into the hospital to the point of patient administration. While other hospitals implement similar closed-loop systems on an application-by-application basis over time, CCMH chose an aggressive “stacked” implementation to achieve its goals as quickly as possible.

## The Results: Quantifiable Benefits

In less than six months, CCMH completely transformed its medication supply chain from a collection of manual-driven, disparate processes into a single, integrated, bar-code-driven, closed-loop system. This single-provider approach maximizes enterprise value, minimizes potential failure points, reduces maintenance costs, simplifies employee training, and promotes smart, incremental growth of the automation-IT infrastructure.

The technology, from McKesson, enabled significant patient safety, process efficiency, and economic benefits, and includes:

"As a community-owned, public hospital, Comanche County Memorial Hospital's mission is to provide outstanding healthcare services to the citizens of Southwest Oklahoma. Additionally, we have a responsibility to help those in the community without proper health insurance. We provide a tremendous amount of uncompensated care; consequently there is extra pressure to deliver our services efficiently.

"The Pharmacy Automation Project, which uses bar-code-based automated technology to distribute and administer medications, has allowed us to meet two of our most important goals: keeping CCMH on the leading edge of patient safety by minimizing human error and freeing up pharmacists to spend more time on the patient floors; and making our operations more efficient, both in terms of labor productivity and the medication supply chain."

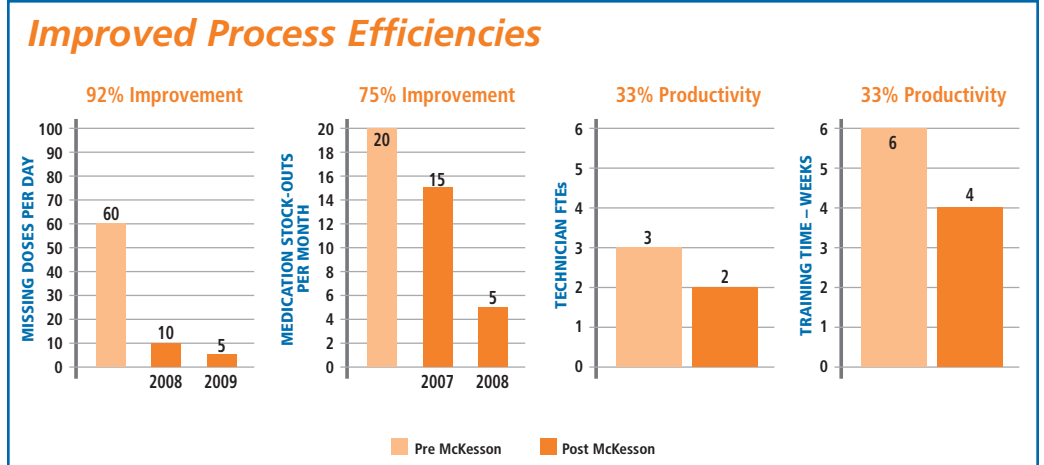
**Randy Segler**  
Chief Executive Officer



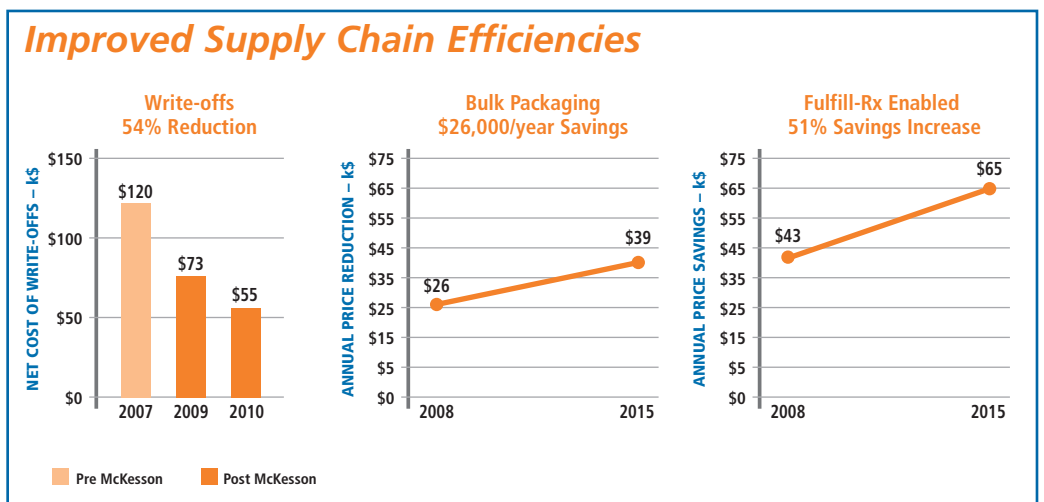
"Comanche County Memorial had a very ambitious timeline for completing this comprehensive project that would yield substantive benefits in patient care and safety as well as provide operating efficiencies. Working in partnership with one vendor allowed us to implement an integrated solution across the medication distribution and medication administration processes, using bar-code-based technology to achieve leading-edge patient safety processes.

"The quantifiable results already achieved along with even greater benefits in the future has met our patient care and safety objectives as well as enabling CCMH to operate more efficiently."

**Doug Weaver**  
Chief Operating Officer



- The Horizon Meds Manager™ pharmacy information system, which serves as the hub for the closed-loop medication system.
- The Horizon MedComm-Rx™ medication order transmission system to provide real-time, online access to patient medication orders, saving time and improving accuracy.
- The PakPlus-Rx® service to package medications into bar-coded, unit-dose form, which enables automation technology and results in savings by buying medications in bulk.
- The ROBOT-Rx® system, which automatically stores and dispenses unit-dose medications in patient-specific, bar-coded envelopes. This increases productivity and reduces the chance for human error. Pharmacists now spot check just 10 percent of medications.
- The MedCarousel® system, with bar-code scanning and pick-to-light technologies, improves accuracy in picking stock for unit-based cabinets. This contributes to improved patient care, and reduces and expedites work for nurses and pharmacists.
- Fulfill-Rx<sup>sm</sup> software, which integrates the MedCarousel to McKesson Pharmaceutical to cut in half the time required to prepare the daily replenishment order. This integration streamlines inventory replenishment, automates inventory re-ordering, and optimizes medication cabinet inventory.
- AcuDose-Rx® cabinets for dispensing narcotics, PRN medications, and select floor stock items contributes to improvement in patient safety, charge capture, and inventory control.
- The NarcStation™ vault units and software system, comprising a self-contained, closed-loop system for controlled substances.
- The Horizon Admin-Rx™ medication administration system to provide a three-way, bar-code check while automatically updating patient medication records and capturing charges.
- The 340B Manager<sup>sm</sup> software to maximize drug cost savings while complying with the federal government's inventory management, auditing, and tracking requirements.



"Patient safety has always been a primary objective at Comanche County Memorial Hospital. The new bar-code-based bedside point-of-care medication administration process that is being implemented will assure The Five Rights of the Patient regarding medication administration. The nursing profession has many stresses in dealing with patient care. Once the new process is implemented, I believe it will enable both our patients and our nurses to ensure a higher level of patient and nurse safety."

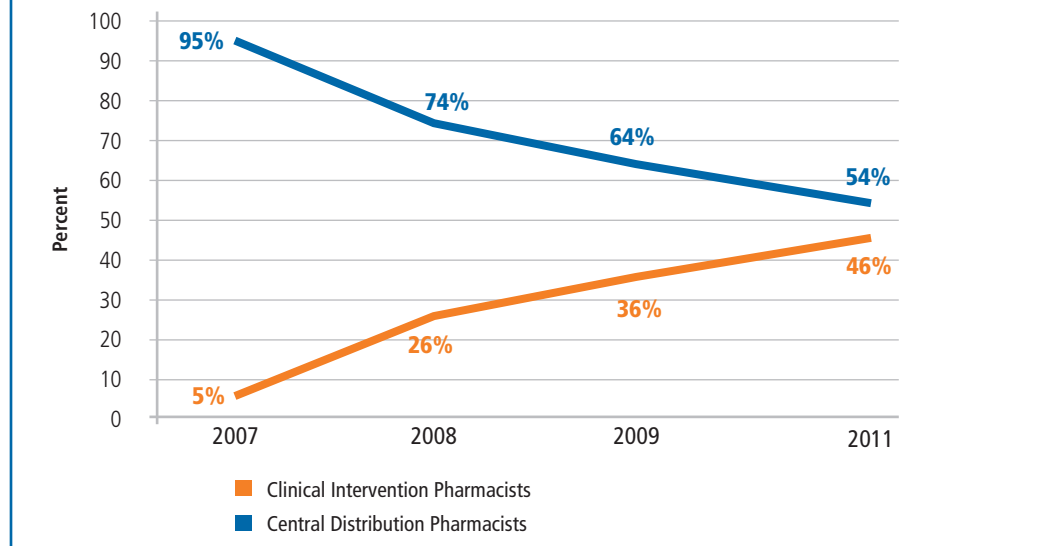
**Linda Leith**  
Chief Nursing Officer



"With less time spent on routine tasks in the medication distribution process, we have already redeployed one pharmacist for clinical intervention work on the patient floors, and anticipate redeploying two more pharmacists in the near future. This improves patient outcomes, provides more cost effective care and allows pharmacists to use their knowledge as a direct member of the patient's medical team. The challenging and fulfilling nature of this work will also help us in recruiting new pharmacists."

**Dana Strawn**  
Pharmacy Director

### The Evolving Role of Pharmacists



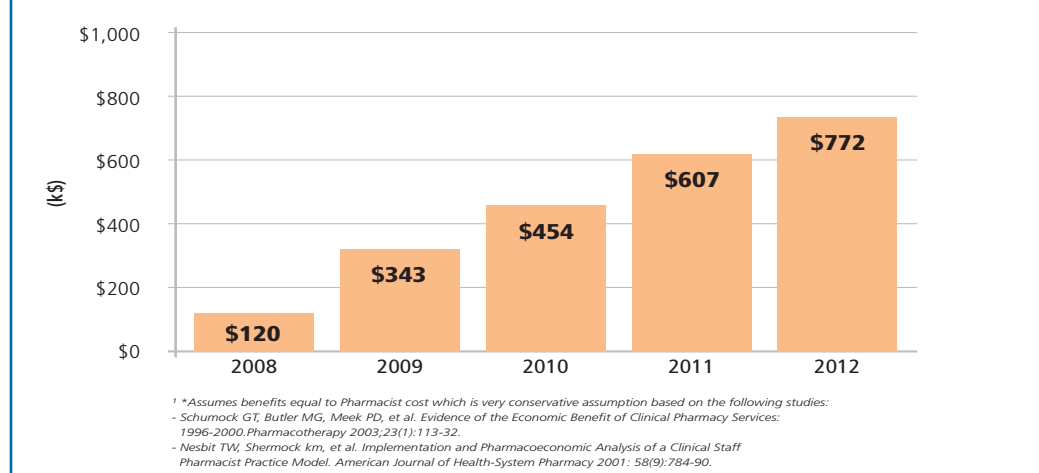
### Summary

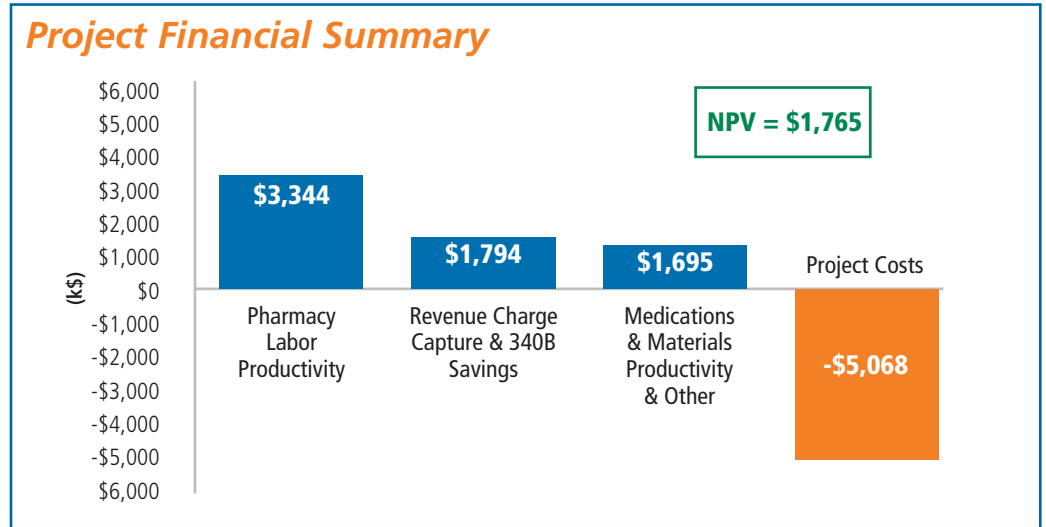
This independent evaluation demonstrates that Comanche County Memorial Hospital realized significant patient safety, process efficiency, and economic benefits as a direct result of its restructured medication supply chain. In less than half a year, CCMH redefined its processes, and went from a mostly manual system to one that scans bar-coded medications upon administration—a capability less than 10 percent of U.S. hospitals possess.

The quantifiable benefits of this project include:

- Projected an eight-fold increase in time spent by pharmacists on clinical intervention activities, resulting in an annual 10 percent reduction in ADEs and related costs.
- Cut pharmacist checking labor by 90 percent.
- Improved technician picking labor by 33 percent, and reduced technician training time by 33 percent.
- Cut missing doses by 92 percent and medication cabinet stock outs by 75 percent.
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### Cost Benefits of Clinical Intervention





Overall, these gains resulted in an eight-year project net present value exceeding \$1.7 million. The return on investment of 42 percent, with a cost of capital of 7 percent, is outstanding. An enterprise should invest in any project that returns more than its cost of capital. On average, the cost of capital for a community medical center is in the 6-to-8-percent range, further proving the value of the integrated medication supply chain project.

Among the non-quantitative benefits of the project are:

- Partnering with McKesson as a single vendor allowed for understanding and efficient system implementation, performance, and maintenance.
- The implementation timeframe and cost was condensed with the “stacked” integrated solutions approach.
- The risk of major medical errors resulting in potential litigation was reduced.
- The role of the hospital pharmacist was elevated to be an integral part of the patient’s medical team.
- Pharmacists reported improved job enrichment, contributing to retention success.
- The nursing role is elevated with the ability to spend more time with patients and less time

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