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## Denver Health: Getting LEAN

Denver Health is comprised of a 477-bed acute care hospital in downtown Denver, Colorado, a network of clinics throughout the city, a correctional care unit, a community detoxification program, and a variety of other programs for the residents of Denver. With a \$700 million annual operating budget, it serves as Denver's primary "safety net hospital," providing \$318 million in uncompensated care in 2008.

Denver Health has operated "in the black" every year since 1991, but in 2002, when the health system's financial situation was not as stable, executive management decided to identify and implement a system-wide program to keep costs down. They evaluated a number of options and decided on the LEAN program, a systematic approach to identifying and eliminating waste that results from non-value added activities.

The LEAN program touches every aspect of the health system's business, with the supply chain playing a significant role in its operational improvements. As a result of the LEAN program, Denver Health has increased revenue/reduced costs system-wide by nearly \$20 million in three years.

### Inventory Management

Denver Health increased its visibility to utilization data, collaborated with clinical staff, partnered with suppliers and distributors and maximized existing resources to significantly improve its inventory management processes. Elements of this program include:

- **Just-in-Time Inventory Model:** A major initiative was to transition from a "just in case" to a "just in time" inventory model. As a result, Denver Health eliminated its off-site warehouse, reducing inventory by \$600,000 and annual operating expenses by \$400,000 per year.
- **Automated Processes:** Denver Health's Materials Management team transitioned from a manual to an automated system that utilizes barcodes and handheld computers to manage inventory, improving accuracy and efficiency.
- **Supply Replenishment:** Denver Health also partnered with its distributor, Owens & Minor, to maximize the use of automated supply replenishment cabinets in its in-patient and outpatient clinics since nursing compliance for these cabinets was at only 63 percent. By gaining visibility to and leveraging utilization data, the materials management staff was able to adjust par levels, thereby reducing stock-outs by 80 percent while increasing nursing compliance by 50 percent. Furthermore, they reduced the number of replenishment trips to the floors by 67 percent.

Denver Health implemented new technology to automate processes and improve efficiency, thereby improving the accuracy of their purchasing, inventory management and accounts payable processes without adding a single full-time employee.

## OR Inventory Control

Denver Health also took steps to improve inventory management in the operating room (OR). According to Phil Pettigrew, director of Materials Management for Denver Health, the OR had been running three inventory turns per year and they knew this wasn't an efficient way to manage supplies. They launched a focused effort that included:

- **Product Storage:** By storing products in C-Lockers that can be used for multiple cases, Denver Health was able to reduce OR inventory levels by 20 to 30 percent and double the number of annual inventory turns.
- **Inventory Buy-Back:** Denver Health partnered with its suppliers on a program where the suppliers take back obsolete/unused inventory in the OR in exchange for dollar for dollar credit. This has not only reduced inventory levels, but also reduced costs related to expired/unused items.

## Automation and Standardization

Denver Health implemented new technology to automate processes and improve efficiency, thereby improving the accuracy of their purchasing, inventory management and accounts payable processes without adding a single full-time employee.

- **Order Management:** Denver Health utilizes GHX My Exchange Order Center and AP Center to monitor exceptions and improve its use of touchless orders. Furthermore, they implemented a standard work process for purchasing where every buyer conducts transactions in a standardized fashion.
- **Contract Management:** Combining its experience with My Exchange Order Center and the new standard work processes, Denver Health is looking to utilize the new GHX Contract Center platform starting in July 2009 to manage its contracts and pricing exceptions.

Process automation enabled Denver Health's Materials Management team to assume responsibility for all purchasing and inventory management functions for the healthcare system's outside clinics and specialty clinical areas, including the emergency department, labor and delivery, gastroenterology lab and catheterization lab.

As a result of this "Supply Chain Extender Program," Denver Health cut inventory levels for these departments and cut the clinics' inventory by 70 percent. The program has also improved the healthcare system's contract compliance since it enables purchasing and legal to view all of Denver Health's contracts and make educated purchasing decisions to maximize contracts and decrease costs.

