

Driving Cost Savings Through an Enterprisewide Pharmacy Supply Chain

PHARMACEUTICAL COSTS: JACK TEMPLE

THE UNIVERSITY OF WISCONSIN HOSPITAL AND CLINICS HAS DEVELOPED A STRATEGIC APPROACH TO MEDICATION MANAGEMENT.

As the third-largest cost center for healthcare organizations, the pharmacy department presents a major area of opportunity. A total pharmacy budget—80 percent of which typically is spent on medication inventory and drug costs—can make up 10 percent of a hospital's operating expense.

With this in mind, the University of Wisconsin Hospital and Clinics (UW Health) is taking a fresh approach to medication management. By leveraging new processes and tools, the health system is identifying opportunities to ensure it has the right amount of inventory and to create significant savings.

Enterprisewide Medication Management: A Phased Approach

UW Health's pharmacy currently administers 14,500 inpatient medication doses and fills 1,800 retail prescriptions each day. In addition to its own facility and clinical locations, the health system supports 14 community pharmacies across the Madison, Wis., area. UW is also rapidly expanding, adding a new digestive health center, surgical hospital, and rehabilitation hospital. To efficiently sustain this growth, our organization needed a medication management strategy that improved both financial results and clinical care.

With this in mind, leaders at UW Health created a plan for the initiative, which included the following four phases.

Phase 1: Integrate a central pharmacy foundation. The objective was to use central pharmacy robotics, carousels, and other technology to redeploy pharmacist and technician staff, enabling them to better contribute to patient care.

Phase 2: Build an integrated medication management platform. UW Health deployed automated dispensing cabinetry on a platform integrated with the central pharmacy for better inventory management. The platform also provides a common formulary and connectivity to the electronic health record for nursing workflows.

Phase 3: Achieve enterprisewide inventory visibility and management. The goal was to increase efficiency while reducing overall inventory and waste by connecting the health system's pharmacies via enterprisewide medication management software.

Phase 4: Consolidate into a centralized supply chain center. Eventually, UW Health will consolidate medication packaging, compounding, and distribution processes into a centralized supply chain center. UW Health will leverage its infrastructure and expertise to offer regional support to affiliated providers.

Setting the Strategic Foundation

As one of the first healthcare organizations in the country to focus on automating the medication distribution process from purchase to medication administration, UW Health focused the first two phases of its journey on laying the groundwork for automated medication distribution and management.

During the first and second phases, UW Health aimed to build the technology infrastructure for the move to an integrated medication management platform. This required fully outfitting the central pharmacy and the organization's facilities with automation solutions to ensure all medications could be properly tracked across the network. This also better aligns pharmacy workflows, creating more consistent processes and procedures, which yield significant cost savings and also free up time for pharmacists to adopt more top-of-license roles to improve clinical care quality. UW Health's medication distribution and management portfolio now includes robots, carousels, virtual medication shelving, a high-speed packager, 92 automated dispensing cabinets across multiple hospitals, 11 anesthesia carts for operating room areas, and five narcotics control systems.

In the third phase of the project, UW Health integrated these technologies through medication management software that provides real-time visibility and access to medications in all of its facilities and stocking locations.

As drug shortages continue to impact patient safety, technology allows us to respond to urgent needs through real-time and immediate identification of inventory across all hospital and clinic pharmacies. The pharmacy can easily locate and transfer existing medications from overstocked locations to areas of need during drug shortages, thus reducing inventory levels and diminishing medication waste due to expirations. Overall, implementation of these strategies has resulted in inventory turns increasing across the enterprise, while decreasing the total days on hand in each location.

With the recent conclusion of phase three, UW Health is now deepening its enterprisewide capabilities.

Next Steps

In the fourth phase, UW Health's pharmacy department plans to achieve further cost savings by launching a centralized medication management approach. This will require the hospital to build a dedicated distribution center with compounding and packaging capabilities. By doing this, UW Health hopes to achieve the following goals.

Enable bulk purchasing. Buying bulk medication orders at a discount and using automation to break them down into smaller packages for individual sites will enable UW Health to lower its medication inventory cost. This approach means other hospitals and clinics within the system will receive the necessary package sizes for each product, delivered in a just-in-time fashion. In turn, this eliminates the need for each individual pharmacy to purchase medications in large sizes simply to have them on hand. In fact, UW Health has already experienced \$396,397 in total savings/cost avoidance.

Capitalize on demand aggregation. In supply chain management, high demand from one customer tends to be offset by lower demand from another. UW Health will apply this concept to its pharmacy, combining medication demand from all of the facilities within the system to minimize inventory and expirations. Thus far, UW Health's inventory optimization efforts have achieved \$251,690 in savings.

Enhance visibility networkwide. UW Health will continue taking advantage of its enhanced medication visibility across the enterprise. For example, integrating pharmacy software into the health system's general ledger will ensure accurate and correctly allocated cost transfers,

resulting in better financial tracking that ultimately will further enhance the efficiency of the supply chain and may permit a reduction or reallocation of FTEs involved in the current process.

Standardize pharmacy processes. Through standardization, UW Health will better support the use of common formularies, workflows, and procedures across the health system. This will drive best practices from an operations and IT perspective, while centralized management will enable more efficient systems maintenance from a single location.

UW Health's enhanced medication management approach is projected to result in more than \$1 million in cost savings over a five-year period. The cost savings will come from the following areas.

- Enhancing capital and maintenance: \$516,602
- Reducing inventory: \$675,160
- Decreasing expired medications: \$351,200
- Reducing supply chain labor by 0.5 FTE: \$118,900
- Total impact: \$1,026,360 (ROI = \$509,758 in savings)

Medication Management of the Future

UW Health is pioneering optimization and application of virtual processes to the pharmacy supply chain across the enterprise. With the right strategies and technologies in place, other health systems also can drive operational efficiencies that ensure patients receive the medications they need at a significant cost savings.

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