



Helping Clinicians Get Out of the Supply Room and Back to Their Patients

How Medical West Hospital transformed its supply chain

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Since August 2014, Medical West, based in Bessemer, Ala., has improved product visibility and streamlined workflows, allowing clinical staff to spend more time with patients instead of managing inventory in supply rooms and manually entering data. Medical West has reduced its supply spending by 10 percent based on a per-patient, per-day scale. Instead of reactively retrieving supplies on an as-needed basis, Medical West now has data and analytics to inform its supply decisions. But that wasn't always the case; before, products were not organized or easily traceable. In fact, prior to August 2014, the 310-bed acute care hospital was struggling with how to manage its medical and surgical supplies.



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—Allen Brazelton, Supply Chain Director, Medical West

In 2014, Medical West was only one year away from its Joint Commission accreditation. The hospital was experiencing a myriad of challenges with their supply chain, and it knew it had to take action to improve efficiencies, optimize workflows and maintain quality of care.

One of the most visible problems was the layout of supply closets. “We had nursing supply closets on every floor and old cabinetry, some of which dated back to the 1960s,” says Allen Brazelton, Medical West’s supply chain director. “On some floors we had products in cabinets behind doors, and we also had bins on the countertops.”

While nursing cabinets are common in most hospitals, poor organization, clutter and a lack of visibility make it difficult to detect expired supplies.

In addition to the layout of supply space, Medical West was experiencing setbacks related to supply efficiency. It struggled to manage par levels, or the amount that should be available at any time for a given item. Without consistent and real-time data to inform its ordering decisions, the hospital faced overstocks of some supplies and stock-outs for others. “We were overstocking on nursing units, and in some cases we were running out of things,” says Mr. Brazelton. “We didn’t have a way to manage the par level and determine whether items were overstocked or not.”

The hospital had 25 storage locations at the time, 17 of which were managed by materials management staff using an inventory replenishment model. To manage par levels, staff followed a process that

required traveling between floors, counting numerous items and printing off tickets. The tedious process was extremely manual, meaning mistakes were probable.

Staff in the other eight storage locations — all of which were specialized areas such as labor and delivery — didn’t have materials management support for supply replenishment, resulting in overstocking to compensate for potential stock-out situations.

These recurring problems spurred Medical West to rethink its supply chain management strategy. The hospital had one year to implement a solution, and Mr. Brazelton, who has been with Medical West since 2010, began researching available options. His organization sought a solution that would increase supply visibility and reduce the amount of time clinicians spent identifying and retrieving items. Further, Medical West wanted this solution from an experienced leader that would solve its challenges around inventory and related workflows.

Medical West eventually decided to leverage its existing relationship with Cardinal Health. As the hospital’s main distributor, Cardinal Health possessed the strategic

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know-how to end the pain points Medical West was experiencing.

Mr. Brazelton was very interested in the benefits of the 2-Bin Kanban inventory management solution offered by Cardinal Health. “I’d already researched some hospitals that had used the 2-Bin Kanban solution from Cardinal Health and liked the success they’d had,” he says.

Kanban, which literally means “signal,” aligns inventory with the actual consumption of goods or use of supplies. The 2-Bin Kanban inventory management solution is supported by cloud-based software designed to aid in determining the exact amount of on-hand supplies that are needed, so there is never too much or too little inventory. The right supplies are available whenever a nurse or clinician needs them, and no money is tied up in surplus supplies. This saves time, labor and revenue, and it supports patient safety initiatives for supply rooms.

Mr. Brazelton was confident the 2-Bin Kanban would drive the immediate and long-term changes needed at Medical West. As for immediate change, the organization needed a method to more efficiently organize supplies to reduce the time clinicians spent looking for items. “We already knew we wanted to gut [the nursing cabinets] out and have wire racks,” says Mr. Brazelton. “We looked for a solution that you could just roll in and work off a wire rack.”

In the long-term, Mr. Brazelton was drawn to the 2-Bin Kanban’s data and analytic

capabilities, which are powered by the solution’s Integrated Advanced Analytics. As part of the cloud-based software, Integrated Advanced Analytics connects the dots to identify trends related to product par levels, changes in utilization and opportunities for standardization. By unlocking this actionable information, organizations are better positioned to drive down costs and reduce waste. The Integrated Advanced Analytics tool can be implemented in one department, numerous departments or even at an IDN level, depending on the type of solution — the 2-Bin Kanban system or Smart Cabinets — the customer chooses. No matter what the customer prefers, the solution’s uniqueness lies in its scalability. Customers can start small with it and easily expand it into other areas of the hospital as desired.

Under the 2-Bin Kanban system, each item is stored in two bins placed on shelves with one toward the front and the other behind it, ensuring first in, first out usage (FIFO). This helps prevent expiration of supplies managed at the bulk level. Nurses and staff retrieve the item they need from the front-most bin. If they take the last item, they remove the empty bin from the shelf and place it upon the shelving unit’s collection area. They then pull the full stock bin forward to retrieve desired supplies.

When a bin is empty and placed in the collection area, a simple workflow is followed:

- Empty bins in the collection area signal more supplies are needed.
- The materials management team

takes these empty bins and scans each using its barcode or radio-frequency identification (RFID) tag, triggering replenishment. During assessment, the customer determines whether a barcode or RFID tag is used for scanning.

- Through the cloud-based software, the scan sends information about refilling low items to the materials management information system.
- Once the order is received by the distribution center, supplies are packed and labeled for each point of use.
- The supplies are delivered straight to the hospital. The materials team unloads the supplies into the correct bins, and scans each one to update the software that the bin has been refilled. The materials staff then places the full bins back in the rearmost position.

After learning about the benefits of the 2-Bin Kanban system from Cardinal Health, Medical West gave the go ahead and implementation began in August 2014. “I liked Cardinal Health — [the solution] fit our hospital,” says Mr. Brazelton. “It was really a simpler system than some of the

other systems out there.”

By the end of 2014, Medical West and Cardinal Health were already discussing expansion of the 2-Bin Kanban inventory management solution to other parts of the hospital.

After implementation of the 2-Bin Kanban solution, Medical West contributes their abundant success to five key outcomes.

1. Patient safety and regulatory compliance was upheld as top priority.

Effective inventory management is about more than keeping the shelves stocked. It's also about supporting patient safety initiatives and regulatory compliance. Hospitals may treat overstocked supplies as a safety net, but these items become a liability when they expire.

At Medical West, the 2-Bin Kanban solution and its Integrated Advanced Analytics “learn” the hospital's consumption patterns in real-time. The result is that the right amount of supplies are properly calculated for each bin while factoring variation in patient census, clinical practice and seasonal effects. The software also shares updates about supply status, stock-outs and pending expirations, all of which could impact patient safety.

Medical West completed its Joint Commission survey in summer 2015, and the results were remarkable, especially related to expired products. “The results of the survey showed there were no

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expired products found on the nursing units because of the way the 2-Bin Kanban system automatically rotates the inventory.”

2. Over- and under-stocking was eliminated. The principal goal of the 2-Bin Kanban solution is to have the right amount of inventory — never too much or too little — on the shelf at all times. Reinforced with the Integrated Advanced Analytics, the inventory management solution prevents supply chain surprises at Medical West. This analytic capability “learns” and “remembers” the hospital’s consumption patterns in real-time, letting it calculate the proper quantity of supplies needed at any given time.

With access to powerful data like this, hospital supply chain leaders and members of the materials management team can strategically monitor supplies and gain a deeper understanding of the supply chain — upstream and downstream. With this understanding comes opportunities for greater cost savings. Because the Integrated Advanced Analytics tool breaks down inventory volume all the way to the SKU level, hospitals can thoroughly analyze product utilization and determine potential savings opportunities.

Armed with this data, Medical West soon began to see financial results after implementing the 2-Bin Kanban system. “We reduced our inventory in our storeroom by about 15 percent in three months from the start date,” says Mr. Brazelton. “As far as product costs, we’ve reduced our spend by about 10

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percent. It’s the 12-month average we have spent less than prior to going live.”

3. The new system optimized clinicians’ time. Clinicians also reap benefits from a highly visual and automated solution like 2-Bin Kanban. Mr. Brazelton sees benefits of the reduced complexity, not only in daily practice but also when training new staff members. “It’s easier to teach clinical staff this process,” he says.

Reducing the time clinicians spend in the storeroom means they have more to spend at the bedside with patients. In fact, the recent case study conducted by Cardinal Health at Bellevue (Neb.) Medical Center found some nurses and clinicians spend 80 percent less time retrieving supplies with the 2-Bin Kanban system compared to a point-of-use system.

Clinical team members now have one task at Medical West; using iPads, they simply scan the bin barcode. Upon scanning, the solution’s cloud-based software collects data about the product. The scanning triggers necessary replenishment and initiates any needed ordering of products, eliminating the previous process that required travel between floors, manually counting items and printing tickets.

4. Products and supplies were made easy to see. Products must be visible and accessible for a supply chain to function seamlessly. In the past, this wasn't the case at Medical West. But switching to the 2-Bin Kanban system involved a transformation visible to the naked eye: The hospital's opaque cabinets were removed and replaced with open-rack shelving.

Now, upon walking into the supply rooms, nurses and clinicians immediately see the entire inventory and can access items without opening or closing doors. The bins are never overfilled and Medical West staff does not need to parse through items. Labeling and color coding help them find the very items they came to retrieve.

Nurses and other staff members have noticed a difference with the newfound visibility of supplies. The change has bolstered staff satisfaction and optimized workflows. "I have had a lot of positive comments from nurses about how easy it is to find the product," says Mr. Brazelton.

5. The new efficiencies let the hospital staff act strategically. Within four months of implementing the 2-Bin Kanban solution, Medical West planned to amplify its progress and install it in other departments of the hospital. It has already installed the system in its new freestanding ED — the first of its kind in Alabama — which opened in May 2015. The 2-Bin Kanban and its ease of use has made a difference in how that ED is staffed.

Scanning a barcode takes less time than manual counting. As a result, the system is able to effectively reallocate its resources and better plan its ordering, all while

effectively managing and optimizing their physical space in the supply rooms.

Conclusion

Ultimately, the goal of every care team is to provide patient care, not focus on materials management. After implementing the 2-Bin Kanban inventory management solution from Cardinal Health, Medical West gained immediate organization in its supply space and unlocked the data and analytics needed for operational, clinical and financial improvements. "It's a much more organized way of managing the process and, at the same time, saving money for the hospital and getting clinicians back to their patients," says Mr. Brazelton.

