

## Surgical supply chain

# Kanban, 'pick paths' aid OR supply management

**S**tock-outs were the "burning platform" that caused staff and managers to jump into a 2-year project to overhaul a 22-room OR's supply management.

The previous "system" had been a dissatisfier for OR clinicians and supply staff. Supplies in the OR storeroom weren't kept in any order. Reordering was hit or miss. "It was incredibly frustrating for folks to go to the shelf and not find what they needed," says Brian Whorley, who fostered the project at 400-bed Boone Health Center in Columbia, Missouri.

It was also urgent because the OR represents a large part of the hospital's operating expense, and a significant chunk was spent on supplies.

### Supply 'supermarket'

Two years later, supplies are neatly arranged in a supply "supermarket." Supply ordering relies on a kanban system that uses divided bins, making it easy to see what needs to be ordered.

Not only is frustration down, but the inventory value also has been reduced by several hundred thousand dollars. Stock-outs now are fewer than 4 or 5 a day for the 1,200 supply items.

Credit goes to the OR Supply Redesign Team, a dozen nurses and surgical technologists (STs) who developed the new system. Whorley facilitated the project as manager of surgical services for business and supply chain, drawing on his background in engineering and quality management. Executive support came from Julie Miller, RN, director of surgical services, with partnership from OR clinical supervisors George Henstorf, Heidi Woods, and Kevin Hall.

"Improving how we manage supplies in the OR was foundational to our strategic goals of cost management and sustainable growth. It made sense to get a team together and start making change happen," says Miller.

### A supply 'pick path'

The supply supermarket is organized in the order the preference cards are picked, termed a "pick path." Previously, items were stored in 4 or 5 different locations, Whorley says.

After the team agreed on a plan, 16 to 18 staff members volunteered to come in over a weekend to set up the new "Robmart," nicknamed for the senior distribution tech, Rob Myers, and Rob Dunn, the materials coordinator.



*In the kanban system, supplies are organized in bins divided into left and right sides. Staff pull supplies from the left side until empty and then remove the supply card and place it on an "order" peg.*

At Boone, nurses and STs pull their own cases. Initially, Whorley thought that was inefficient. Now he thinks it's a good strategy.

"It creates a vested interest in maintaining the preference cards and in only picking what they need most of the time," he says.

When the materials management staff pick cases, he notes, nurses tend to request everything on the card to be sure they have it.

"There's no 'moral hazard' in keeping the cards neat and tight," he notes. "With this system, we have nice, neat cards."

### **Kanban for supplies**

To create a more reliable system for supply re-ordering, the team decided to trial "kanban," a Lean manufacturing method that relies on visual signals and standard work.

This is how the trial was set up:

- Several hundred products were organized into plastic bins, divided into left and right halves.
- Each product's par level was divided in half, with half placed on the left side of the bin, and half on the right. Each bin has a bar-coded supply card kept in a pocket on the front.
- The supply room has 3 pegs labeled "order," "ordered," and "on back-order."
- Staff were instructed to pull supplies only from a bin's left side. When the left side is empty, staff remove the supply card, hang it on the "order" peg, and then pull supplies from the right side. Picking their own cases gives them an incentive to pull the cards as a trigger to reorder products.
- Every afternoon, a supply tech takes the cards from the order peg and walks through the storage area to make sure no other bins are empty. He scans the bar-codes on the backs of the cards into the computer to place an order and hangs the cards on the "ordered" peg. That way, the staff can see what supplies have been ordered.
- When the items arrive, Myers pulls the cards off the order peg and puts the supplies and cards in the proper bins while refilling the bins from right to left, effectively rotating the stock.

Cards still hanging on the "ordered" peg are placed on the "back-order" peg so the staff can tell the status.

The trial proved successful. "It started to build confidence that this could actually work," says Henstorf.

The trial showed that the most arduous tasks in setting up the kanban system were sizing the bins to the OR's great variety of products and determining the products' lead time for ordering, Whorley notes.

An engineering intern, Kara Bono, from the nearby University of Missouri helped with the original quantity and bin-size calculations. Though instrumental, this plan needed tweaking. For example, some bins were too tiny and hard to manage. The team decided to standardize to 3 bins sizes for the full implementa-



*Boone Health Center's "supply supermarket" for OR supplies is organized in "pick paths" according to the order in which the preference cards are picked.*

tion.

To help sustain the kanban system, colored stickers with the month's abbreviation (eg, a red dot with JAN for January) are periodically placed on every box or package of a high-dollar item.

"It's pretty obvious then what isn't moving or being rotated," Whorley says.

### **Supply chain reporting**

Along with the overhaul of the supply area and ordering process, a clearer reporting structure for the OR supply chain was created.

The former structure with multiple reporting paths had proved inadequate. The clinicians, who were users of the supplies, reported to the OR director. An OR buyer, responsible for specialty items, reported to an off-site purchasing manager. The supply techs reported to the materials management director, whose office was in the hospital's warehouse. The information services department maintained the supply interfaces.

The new structure consolidates accountability and has built a more cohesive team. Surgical supplies come directly to the OR storeroom, rather than being routed through the warehouse. Whorley, previously a project manager reporting to the COO, is now dedicated to the surgical supply chain, reports to the OR director, and oversees the personnel who manage OR supplies.

Through the new systems and reporting structure, says Whorley, "We've been able to achieve the paradox: Reduce cost and inventory while improving the availability of supplies." ♦

—Pat Patterson

**Have a question  
on the OR  
revenue cycle?**

*Keith Siddel will respond to questions in the column. Send your questions to [editor@ormanager.com](mailto:editor@ormanager.com)*

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