Introduction: Inventory management in an age of health care reform

The need to address barriers to effective supply chain management has become increasingly pressing for hospitals and health systems in recent years, as they face demands to contain costs while improving patient outcomes under the Affordable Care Act.

Ruth Damron, a former nurse manager and current member of the Strategic Solutions team at Cardinal Health, recalls talking to a vascular resource nurse working for an academic medical center in the Midwest who reported spending hours accounting for missing supplies. “This is one of the highest paid nurses on staff, spending three hours a day tracking down supplies borrowed by other departments, reordering and doing all the paperwork to charge to the right patient and department,” Damron says.

That nurse’s situation illustrates larger issues with hospital and health system supply chains and inventory management nationwide. Cumbersome and redundant manual processes for documentation and charge capture for supplies used in the OR and cardiac catheterization laboratory (cath lab) can have a significant negative impact on an entire hospital or health system. In fact, senior hospital executives report that supply chain deficiencies lead to higher costs and slower organizational decision-making, according to a 2013 survey conducted by KRC Research and released by the Global Healthcare Exchange (GHX). Supply chain inefficiency, waste and lack of visibility result in a $5 billion loss each year in the implantable device market alone, according to the report.

Cardinal Health™ Inventory Management Solutions

The cloud-based analytics software communicates with on-premise Cardinal Health RFID-enabled Smart Cabinets, 2-Bin Kanban, RFID-enabled Smart Wands and Barcode scanners. The system has visibility to the current state of your inventory, can identify usage trends and make actionable recommendations.
Supply spend management challenges in the OR and cath lab

Under pressure to control costs, supply chain and clinical area leaders face a number of challenges in the OR and other procedural areas such as the cath lab.

In the OR, a supply chain manager’s biggest hurdle is lack of visibility into spending and usage. Historically, scrub techs, resource nurses and even OR managers have assumed responsibilities for maintaining relationships with manufacturer reps, placing orders, managing inventory and reordering, Damron explains. Additionally, “soft” costs such as those related to workflow inconsistencies drive up the cost of care.

“The biggest challenge for supply chain management is simply getting into the operating room,” she says. “Supply chain professionals need to understand the clinical culture and collaborate with clinicians.”

For OR directors, gaining visibility into data that will keep them informed about “slow move” and “no move” products is a major difficulty, as is managing surgeons’ preferred items. Finally, on the clinician side, more awareness and understanding of the supplies cost per case is needed, according to Damron.

The situation is no different in the cath lab, says Ken Shastany, a solutions consultant with the Cardinal Health Strategic Solutions team and a former nurse manager. “Historically, supply chain has been very hands off in the cath lab. Part of it is due to poor communication, and also because purchasing decisions for ‘physician preferred’ items have historically been left to the clinical team as a way of maintaining good relations with physicians,” he says. “Building trust between supply chain professionals and clinicians is critical to being able to effect change.”
Using automation, analytics interfacing to optimize inventory management

Implementing an automated inventory management system with advanced analytic capabilities can significantly improve efficiency in both the OR and the cath lab. Interfacing to critical IT, administrative and clinical systems means clinicians will no longer have to document the same information multiple times.

"Interfacing prevents redundant data entry, reduces related errors and ensures data continuity to various systems," Damron says.

Second, analytics paired with automation and interfaced systems allow the OR and cath lab to keep more accurate patient records and improve patient safety. With the right technology, such as radio-frequency identification (RFID), providers can eliminate manual data entry that could result in errors in patients’ records, according to Shastany.

Additionally, analytic dashboards that display expiration dates and recalled products help ensure proactive removal of those items from the shelves. Even if expired or recalled products are unintentionally missed earlier, the point of charge station serves as the final checkpoint.

Third, an inventory management solution with analytics as its foundation enables informed decision making around purchasing and inventory control by providing complete visibility into product utilization. Without the ability to track and forecast, providers tend to base future purchasing decisions on their previous buying habits without knowing if everything they bought was actually used, Damron explains.

Cardinal Health has witnessed firsthand how automation, analytics and interoperability lead to increased efficiency in inventory management, cost savings and other benefits through clients, like Bellevue Medical Center in Nebraska and Emory St. Joseph’s Hospital in Atlanta, Georgia.

Case Study:

RFID solution boosts Emory St. Joseph’s clinical, financial and operational performance

Responding to requirements to reduce waste and cut costs, Emory St. Joseph’s Hospital decided to automate product tracking and utilization monitoring. The hospital learned about Cardinal Health™ Inventory Management Solutions, which uses RFID tracking. This solution offered immediate returns in a short time frame and with minimal information technology resource investments.

Following implementation of the inventory management system, Emory St. Joseph’s has reported $300,000 in chargeable product costs recovered through active alerts and automated notifications about expired and recalled products have helped to support their patient safety initiatives.

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Tackling the biggest inventory management barriers

Technology and automation can help health care providers overcome the following barriers to effective inventory management.

1. **Physician preferences items and product type variability**
   Physician preferences for certain types of supplies can stand in the way of standardization efforts that allow health systems to leverage economies of scale for better pricing, according to Damron. Without a technology-based inventory management system, it can be difficult to carry out standardization efforts. “If you don’t have data, it’s hard to get physicians on board and aware of the expenses associated with stocking many similar products,” she explains.

2. **Charge capture inaccuracies**
   Manual input requirements for charge capture often don’t support efficient and optimized clinical workflows. Health care providers are hiring experienced, and expensive, nurses whose sole duty is to review charts and charges to ensure accuracy. Implementing automated inventory management solutions can significantly improve charge capture by reducing the steps necessary to associate a product with a patient record.

3. **Diversity of procedures and service lines in the OR**
   ORs can struggle to track inventory effectively due to the overabundance of supplies and wide range of procedures. For example, Damron assessed one hospital where she found that orthopedics and neurosurgery used nearly identical types of suction tubing. “Unless you are a nurse who works in both of those service lines,” she says, “you may not know that there are two very similar supplies in two different locations, when it’s very easy to reduce variability and use one supply across the system.” Implementing technology that identifies what products are on the shelves can resolve issues from having too many products stocked, ultimately reducing variability for the enterprise.
Expired, obsolete and recalled products
Manual methods for keeping expired, obsolete and recalled products off shelves and away from patients are “fraught with problems,” according to Shastany. An automated system makes it easier to proactively remove expired, recalled or obsolete products, according to Damron. For instance, Cardinal Health® Inventory Management Solutions — which uses technology to control inventory, provides insights on cost containment opportunities and more — tracks the lot, serial and expiration date of every product that has an RFID tag associated with it. If an item is expired or subject to recall, the system will alert clinicians. “Automated systems pull data into a dashboard in real time — and can be programmed to alert you ahead of impending expirations,” she says.

Limited data visibility
If a hospital has limited data on supply usage, the likelihood of stocking out greatly increases, according to Damron. “The only workaround is to have a person physically look at every location, every day,” she says. With analytical capabilities and automation, it’s possible to ensure adequate stock without substantial manual effort.

Manual procedure card management in the OR
Manual management of procedure cards results in a number of issues that hospitals could easily remedy with automation, Damron says. “A surgeon might ask for a supply to be used on just one specific case, and someone may interpret that to mean the card should be changed for all cases moving forward.” Keeping procedure cards updated manually also makes it difficult to understand what types of supplies clinicians use across categories — an insight that can reduce variation.

Consignment
Consigned products constitute a major cost driver in the OR. “You’re paying a premium for having a consigned product on the shelf, available at a moment’s notice when you need it,” Damron says. Similarly, Shastany says consigned products in the cath lab make supply chain management more expensive.

Complicated clinical workflows
Performing documentation, tracking supplies and managing other processes manually can complicate clinical workflows. “There are many manual inputs that clinicians are required to do during a procedure that don’t fit into optimized clinical workflows,” Damron says. Adopting an advanced inventory management system can streamline and automate those processes.

Misaligned priorities between supply chain professionals and clinicians
“Capturing data on product usage can help supply chain employees and clinicians collaborate on par levels,” Damron says. “For example, a supply chain professional might recommend that the par is set at two, [but] a clinician could say, ‘No, our par has to be 10 because we ran out once.’ If you have data, that helps everyone come to an agreement and take emotion out of determining the optimal amount of inventory.”
Unknowns related to cases in the OR

Because many of the procedures in the OR are emergencies, it’s easy for hospitals to feel they should have extra inventory on hand just in case, Damron states. However, data related to the procedures performed can show that OR cases and inventory needs are actually more predictable than providers realize. “When you have data to look at what actually happened, providers can set pars based on actual usage,” she says.

Overall, hospitals and health systems must address barriers to effective inventory management in order to survive and succeed despite declining reimbursement, the transition to value-based payment models and other aspects of health care reform. Automation, interfacing and analytics can help health care providers optimize inventory management while cutting costs and promoting better care. Hospitals can reduce supply chain costs without sacrificing quality by implementing more effective inventory management systems.

“Safe, effective care is not at odds with smart, economically sensible care,” Shastany says. “Both can be accomplished with the right tool.”

References


About Cardinal Health
Headquartered in Dublin, Ohio, Cardinal Health, Inc. (NYSE: CAH) is a $103 billion health care services company that improves the cost-effectiveness of health care. Cardinal Health helps pharmacies, hospitals, ambulatory surgery centers, clinical laboratories and physician offices focus on patient care while reducing costs, enhancing efficiency and improving quality. Cardinal Health is an essential link in the health care supply chain, providing pharmaceuticals and medical products and services to more than 100,000 locations each day and is also the industry-leading direct-to-home medical supplies distributor. The company is a leading manufacturer of medical and surgical products, including gloves, surgical apparel and fluid management products. In addition, the company operates the nation’s largest network of radiopharmacies that dispense products to aid in the early diagnosis and treatment of disease. Ranked #26 on the Fortune 500, Cardinal Health employs nearly 35,000 people worldwide. More information about the company may be found at www.cardinalhealth.com and @CardinalHealth on Twitter.