ENGAGING SURGEONS TO ENHANCE CARE DELIVERY AND REDUCE COSTS

INSIDE: We’re working to eliminate unnecessary variation in surgical procedures to improve care delivery and reduce supply chain costs.

Aligning physician preference cards creates better outcomes, improves efficiency, and reduces supply costs in the operating room.
In 2017, a U.S. health system and Medtronic Integrated Health Solutions (IHS) worked together on an initiative at a metro-area hospital. The goal was to improve supply-chain practices and reduce excess spending, thereby decreasing costs on laparoscopic cholecystectomy (lap chole) procedures — the minimally invasive technique to remove the gallbladder.

For each procedure, surgeons use preference cards that list their preferred items and how they must be used in the procedure. For this project, IHS clinical and operational subject matter experts worked together with the hospital surgeons and staff to improve these cards, which in turn helped increase efficiency and lower the cost of lap chole procedures without negatively impacting patient outcomes.

The effort achieved significant results after only a few months. The hospital reduced variation across preference cards, decreased the number of OR door openings during procedures, and considerably reduced the time nurses spent pulling supplies for surgery and returning unused items to their proper supply locations. The estimated annual savings was $42,000 on lap chole procedures at the one hospital.

Lap chole procedures were just the beginning. The health system and IHS expanded this preference card optimization process to two other procedures at the hospital.

**VARIATION ADDS TIME, AND TIME IS MONEY**

Preference cards typically include a surgeon’s “supply pick list,” which directly affects both the supply chain and clinical performance in the OR. Every year, the healthcare industry wastes $5B from manual processes and lack of visibility to supply demand and consumption.\(^1\) Outdated or inaccurate preference cards cause 23 percent of the OR door openings during a procedure,\(^2\) when nurses must leave the room to find missing supplies. Each time the OR doors open during a procedure for a supply run:

- Patients could be at a higher risk of infection due to surgical delays\(^3\)
- Nurses spend more time running for supplies and moving around the OR
- Physicians wait
- Procedures take longer

In short, both patient and health system suffer from the inefficiency and added expense.

**IMPROVING UPON A CENTER OF EXCELLENCE**

The hospital serves a metro area with a Level III Trauma Center and outstanding heart, stroke, and cancer care. It also provides specialty services, including approximately 450 lap chole procedures each year — representing 30 percent of the lap choles performed annually across the health system.

The health system received an award in July 2017 for its supply chain management, particularly its “center of excellence” approach to managing all aspects of supply chain activities. By taking this approach, the system helped reduce the risk of unnecessary supply variation used by surgeons across departments. Although the center of excellence was in place, the system still needed to assess procedures and find ways to improve efficiency.

While the health system had operations experts in-house, IHS expedited the improvements by employing a proprietary analytics technology platform and engaging on-the-ground operational and clinical experts, who were able to implement changes quickly and facilitate sustainable actions.
ANALYZING THE ISSUE
Using a Medtronic proprietary data analytics platform — Performance Analyzer — IHS assessed the hospital’s perioperative performance, including surgeons’ lap chole preference cards. Preference card data was uploaded into Performance Analyzer's interactive dashboard. IHS reviewed the data and found that current performance could pose potential risks and identified several opportunities to standardize and achieve better performance.

IHS found a lot of variation in surgical line items, which was contributing to supply chain inefficiency, avoidable costs, OR downtime, and differences in clinical methods. For example, at the end of 2016, 114 unique line items were requested for lap choles across seven surgeons’ preference cards. But 63 percent of all listed items were requested by less than half of the surgeons. The more item exceptions surgeons had on their cards, the more time was needed to pull supplies, and the more opportunities for potential supply errors.

Clearly, the health system and IHS needed to address the high variation in the lap chole preference cards. However, to achieve efficiencies and sustain process improvements, they needed to take on another challenge: gaining buy-in and engagement from the hospital’s busy surgical staff to change the way they select procedure items.

ENGAGING THE STAFF
Working closely with the surgical staff who were affected by the current inefficiencies, IHS integrated clinical, operational, and economic data from the health system into its web-based Performance Analyzer platform. Based on the assessment, IHS was able to show that the system could reduce line items by 10 to 20 percent, with associated cost reductions of approximately $50–150 per case. This would also help improve OR efficiency.

IHS worked with the hospital’s surgeons and staff to:

▪ Decrease the number of line items and variability of items between preference cards
▪ Reduce staff time associated with pulling, setting up, and returning supplies
▪ Improve inventory management, sterility, efficiency, and costs through kitting
▪ Develop a culture of collaboration and continuous improvement with clinical staff

To help achieve these goals, the IHS team applied a multi-step process framework. The framework guided the health system through an array of data analysis, review, decision, and validation steps. To help simplify decision-making, IHS and system leaders worked in three phases to engage staff and surgeons along the way. At each step, the team used recommendations backed by transparent data and improvement calculations, and they validated all changes with EPIC, the hospital’s electronic health record supplier.

First, the health system’s supply chain organization worked with vendor partners to review the data from Performance Analyzer. They made corrections to existing preference cards, which took out obsolete items and administrative errors. This removed five line items and aligned one item across all surgeons.

Second, the team worked with the OR staff to address items that did not require surgeon input — resulting in eight fewer items and three aligned items.

Finally, the team facilitated a roundtable discussion with the surgeons to discuss their rationale for particular supplies and make collective decisions based on data. This helped to align surgical best practices and supply usage — resulting in the removal of additional items, standardization of multiple items, and better alignment across surgeons.

CREATING KITS FOR CHOLANGIOGRAMS
Out of 450 lap chole procedures conducted at the hospital every year, only 42 — or 9 percent — are cholangiograms. Even so, items for cholangiograms were always selected as a part of every procedure and returned to the supply shelves if not used.

To rectify this, a team of instrument and surgical techs created a prepackaged cholangiogram tote that could be easily pulled for procedures requiring those items. The team determined the tote makeup, quantity of items, and replenishment processes. Communications materials, job aids, and charge sheets were developed to educate clinical staff on the tote’s use.

Creating the tote resulted in:

▪ Eight line items removed from each preference card
▪ Three more items standardized
▪ 16 hours saved per year in put-back labor
▪ 19 miles less walking between the OR and supply room per year
▪ $28K less in hold-cost risk
KEEPING THE DOOR CLOSED

One indicator of OR efficiency is the number of times the OR door opens during a procedure. IHS observed staff movement during lap chole procedures at the hospital and recognized that process inefficiencies were causing unnecessary door openings during the cut-to-close time of the procedure, creating a higher risk of patient infection. To remedy this, the team made supply chain and materials management changes, and installed signs on the OR doors to create awareness of the link between door openings and surgical site infections.

THE RESULTS

The health system improved its operational and economic outcomes — thanks to a well-defined process and highly collaborative team. By bringing together the right health system and hospital staff and using IHS as an expert resource and facilitator, the health system was able to achieve better outcomes and a more engaged and satisfied staff. The nurses could shift more of their time from materials handling back to patient care, and lap choles could be performed more efficiently with fewer resources.

To be honest, when we started, I wasn’t 100 percent into it and didn’t believe lap chole had a lot that could be changed. The Medtronic team showed the different supplies across all surgeons, which was great to see. The best part for me was someone was able to get all the surgeons together — THAT WAS A MIRACLE. Without that part, this would not have happened.

— OR Team Leader

Results of the preference card optimization effort include:4
(based on an annual volume basis of 450 lap chole cases at the hospital)

- 30% fewer line items across preference cards
- 50% less variation in surgical supplies across surgeons
- 50% fewer door openings during lap chole procedures
- 30% less time spent on picking and putting back supplies
- $90 decrease in cost per case
- $42,000 overall savings annually from efficiencies made to the OR

To learn how Medtronic Integrated Health Solutions helps health systems build a better patient and provider experience, visit: medtronic.com/integratedhealthsolutions

REFERENCES
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