Sustaining Margin Performance in the OR
The Mercy Story

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Introduction:
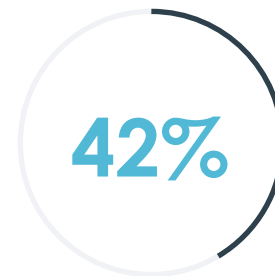## What is the True Cost of Care?

The business of healthcare is changing and Mercy recognized it needed to be ahead of the changes on the horizon. Reimbursement shifts are becoming a part of their business management reality and have required some in-depth analysis of their overall performance as 90 percent of their revenue comes from Patient Services. The ability to deliver high quality care to an expanding population base with constricting resources is a challenge that affects all healthcare organizations.

Mercy, named one of the top five large U.S. health systems in 2017 by Truven[1], serves millions of patients annually. It is a health system which includes 44 acute care and specialty hospitals (heart, children's, orthopedic and rehab), more than 750 physician practices, 300 clinic locations, eight outpatient surgery centers, one virtual care center, 40,000 co-workers and more than 2,000 Mercy integrated physicians[2]. The care delivery geography includes facilities and physicians in Arkansas, Kansas, Missouri and Oklahoma, and outreach ministries in Louisiana, Mississippi and Texas.

With 259 operating rooms, perioperative services at Mercy generates a high volume of revenue but is also a high area of expense – $2.1B in revenue and $350M in expenses. To put it another way, perioperative services generates 42 percent of the revenue in Mercy, with perioperative supplies and labor representing the the second and fourth leading expenses, respectively, in 2016. To address changing revenue models they needed a comprehensive assessment of perioperative performance and a plan to maintain the viability of this critical service line. For Mercy, the status quo was not an option. To address changing revenue models they needed a comprehensive assessment of perioperative performance and a plan to maintain the viability of this critical service line.

The leadership quickly realized it was a big job. Their processes were unstructured and labor-intensive. The staff would manually compile data from various sources, including preference cards and vendor contracts, into spreadsheets in an attempt to uncover key performance indicators (KPIs). This process would take weeks – sometimes months – to complete, and many stakeholders within the organization questioned the validity of the data. As a result, there were varying opinions as to best practice, price and product for any given procedure, and significant variation in the cost per case. They decided to focus on creating a reliable methodology that accurately calculated cost per case and helped facilitate standardization.

By doing this, they could accurately quantify the true cost of the care they delivered and then couple it with outcomes to get a holistic understanding of their overall performance. A comprehensive approach would position them strongly to weather the reimbursement and regulatory changes that are on the horizon and bound to affect every health system in a major way. This case study walks through the transformation of Mercy's perioperative care delivery area.

42%

42% of revenue is generated by Perioperative services in

259

operating rooms

A reliable methodology to accurately quantify the true cost of care per case and holistic understanding of performance to facilitate standardization was required.

1. *Press Release, "Truven Health Analytics, IBM Watson Health, Announces 15 Top Health Systems for 2017" April 24, 2017*

2. *Mercy 2016 Annual Report*

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Mercy's Journey:
People, Processes and Technology

In 2012, Mercy's leadership launched a concerted effort to understand its procedural costs, including the supplies used in the treatment of patients. According to Mercy's President of Business Integration, Vance B. Moore, they started with the organization's profit and loss statement (P&L) to identify which areas within Mercy's cost structure were the most expensive across the entire enterprise.

At the time, Mercy had two separate initiatives in place; one to address perioperative costs, and another to improve the health system's data and analytics. Because both of these areas reported to Moore, the organization decided to merge the two initiatives into one aimed at improving cost, quality and outcomes in the perioperative space through advanced analytics and reporting.

Fred McQueary, MD, Mercy's President of Ambulatory Care and Chief Clinical Officer, comments on the importance of having accurate data on product usage when working to enact change with physicians.

"Accuracy is the real crux of the matter because physicians are trained as scientists," said Dr. McQueary. "When you share data with physicians the first thing they will do is question its accuracy. If they are able to poke holes in it then you have destroyed any credibility you have had and tarnished the integrity of any future data that you share. On the other hand physicians are very willing to help and willing to collaborate if people share data openly, honestly, transparently and it's accurate."

Mercy hired Betty Jo Rocchio, CRNA, MS as Vice President, Perioperative Performance Acceleration, to assess and address the situation. She was tasked with reshaping Mercy's perioperative area so that it was better aligned with the future direction of healthcare. She chose the Institute for Healthcare Improvement's (IHI) Triple Aim as the platform for the improvements.
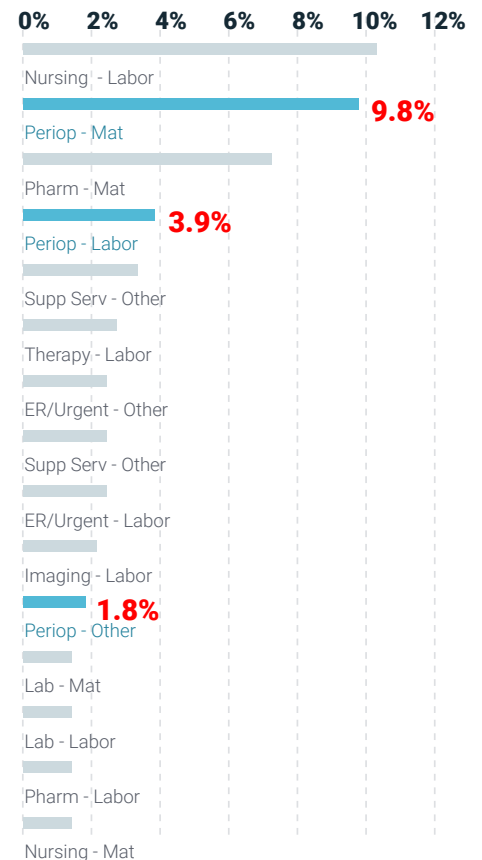
The IHI Triple Aim describes an approach to optimizing health system performance. The IHI believes that new approaches in healthcare must be developed to simultaneously pursue three dimensions:

- Improving the patient experience of care (including quality and satisfaction).

- Improving the health of populations.

- Reducing the per capita cost of healthcare.

> "The perioperative and procedural world floated to the top with regards to the amount of supplies used, the labor that is charged and the revenue generated. It was the most important area based on cost - and often times based on reputation - so we were drawn to it."

Vance B. Moore
President of Business Integration
Mercy

Mercy Expense Breakout (top 15)

Nursing - Labor **9.8%**
Periop - Mat
Pharm - Mat **3.9%**
Periop - Labor
Supp Serv - Other
Therapy - Labor
ER/Urgent - Other
Supp Serv - Other
ER/Urgent - Labor
Imaging - Labor **1.8%**
Periop - Other
Lab - Mat
Lab - Labor
Pharm - Labor
Nursing - Mat

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> "In our industry, we cannot understand our actual cost to deliver healthcare. We have a hard time going back and accounting for things, knowing what we pay and applying our actual costs – what we actually pay at the bottom line – we struggle to see that. We are trying to steer in that direction while knowing that turning a healthcare organization around is like moving a barge – it's not easy."

Betty Jo Rocchio
MS, RN, CRNA, CENP, Senior Vice President and Chief Nursing Officer, Mercy

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Surgeon Preference Cards:
The Tip of the Iceberg

A foundational component to perioperative performance that Rocchio decided to address was surgeon preference cards. This tool is used to prepare for a procedure by providing a list of supplies, instruments and equipment that a surgeon will use during a case. The information contained within preference cards drive a broad range of activities throughout a hospital, including case cart picking, patient charging, inventory management and resource forecasting.

If the information contained within a preference card is inaccurate, there are far reaching implications. These include disruptions to patient care if the correct supplies are not ready, the additional labor and time to pick missing supplies and then returning unused items to stock, inaccurate documentation in the electronic health record (EHR) of which supplies were used on a patient, safety ramifications (e.g. adverse events, recalls) and financial implications (e.g. charge capture).

Furthermore, if Mercy was not accurately capturing perioperative supply usage, it could not accurately calculate procedure costs, link supplies to patient outcomes and facilitate standardization for lower costs, higher care quality and improved financial outcomes.

Rocchio and her team engaged in a yearlong project to "lean up" Mercy's preference cards – ensuring the products contained within the cards matched the surgeon's needs. By doing so they reduced supply expense by $3.6 million in that first year.

In the second year, Mercy had a goal to reduce supply expense by $6 million, but as Rocchio and her team soon realized, the preference cards they had spent so much time manually "cleaning up" were once again outdated and inaccurate.

Not only did we have to achieve an additional $6 million in savings in that next fiscal year, but we also needed to go back and scrub the preference card data from the previous year. In a system as big as Mercy, we would never get ahead manually cleaning up preference cards year after year, and the resources needed to do this were not sustainable or efficient. We still had to press on and move forward looking for a way to reduce cost per case and optimize preference cards. (What we realized) was this a much bigger problem than preference cards.

Betty Jo Rocchio
MS, RN, CRNA, CENP
Senior Vice President and Chief Nursing Officer, Mercy

Preference Cards

This tool is used to prepare for a procedure by providing a list of supplies, instruments and equipment that a surgeon will use during a case.

$3.6M
The gap between accurate and inaccurate preference cards

12 months
The time of manual revision

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The "A Ha!" Moment:
The Role of Inventory Management

Rocchio approached Matthew Mentel, Mercy's Executive Director, Integrated Performance Solutions, for help on the preference card challenge. Mentel and his team of experts met with Rocchio and began to assess the problem with a more holistic and multidisciplinary view. Combining a unique background with expertise in finance, revenue, supply chain, technology and clinical point of use solutions, Mentel and his Integrated Performance Solutions team tried to look at the problem from every angle and determine not just the surface challenge of preference card management, but the root cause of the issue overall.

"My team's responsibility within Mercy is to identify, design and implement creative solutions to organizational challenges through people, process and technology in order to positively impact and improve upon Mercy's Five Dimensions of Excellence. It is in reality a drive to continuously improve for overall financial, operational or cultural benefit," said Mentel. "We looked at what Betty Jo was doing and right away realized the issue was not preference cards – while they are difficult to maintain – it was really an inventory management issue."

Mentel describes the preference card as "the recipe card for everything done in procedural areas" and notes that if the information on the card is incorrect, there is significant downstream impact.

He explains how these "recipe cards" were originally created to ensure all the products needed for a case were available for use when the patient was brought into the room. However, the cards were not maintained over time, but rather were "added to" or "tweaked" without solid analytics or practices. While the intention of these practices was to have the right products available for the procedure, they often resulted in wasted time, labor and inventory.

Case in point: an analysis of Mercy's process around case cart builds and inventory returns found 38 percent of items picked for a case were subsequently returned to inventory. This meant that Mercy had upwards of 38 percent of its inventory floating at any given time. This resulted in over-ordering, shortages, overstocking, damaged goods, inventory hoarding and waste if a product expired while being "shuffled" around.

"For me the real 'a ha' came in the form of looking at preference cards as an inventory management tool and not a 'card' that needs cleaning or scrubbing on a quarterly basis," said Rocchio. "I quickly realized that preference cards are really dynamic. If you manage them as the inventory management tool they are, you realize that they need to be cleaned once and optimized post every surgical case to maintain accuracy. The products used in surgery need to be managed in every case, and you need data about what occurs in that case to optimize them over time."

Based on this realization, Rocchio and Mentel began the work to completely transform Mercy's inventory management processes. They began examining how current processes were arranged, and the synergy between supply chain and clinical teams. As they dug deeper they realized the finance department and information technology teams also had roles to play in developing the solution.

38%
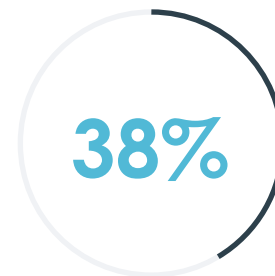
38% of items picked for a case were subsequently returned to inventory. The implication was over-ordering, shortages, overstocking, damaged goods, inventory hoarding and waste.

"Bringing in technology and having people from Tecsys really tie together the two workflows that happen – clinical and supply chain – has made these two areas reliant on each other. They can't get back into their silos, because what supply chain does impacts the OR and what the OR does impacts supply chain with this system."

Emily Tchiblakian
RN, BSN, MHA,
Mercy's Senior Clinical Consultant, Perioperative Services,
Integrated Performance Solutions

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Clinical and Supply Chain **Collaboration**

Rocchio and Mentel first had to establish collaboration between their teams, with Rocchio teaching Mentel about clinical operations and Mentel teaching Rocchio about supply chain operations. Through this process they uncovered current challenges and breaks in the inventory management process that led to increased costs (e.g. labor and supplies), impacts on patient care quality (e.g. inability to accurately record supplies in patient record), and financial losses for the organization (e.g. inability to capture products for billing).

All of this information would be used to develop an effective solution for not only preference card management – but also overall perioperative inventory management. Rocchio and Mentel discovered that many inventory management issues stemmed from misunderstandings and misconceptions between supply chain and clinical staff – and how their actions affect one another.

Today in most healthcare organizations, perioperative clinicians assume some role in inventory management. Without a thorough understanding of the supply chain and how it works, clinicians often exist in what Rocchio describes as a "culture of fear." Afraid that supplies will run out or a surgeon will not have a specific product when he/she needs it, the practice of hoarding supplies is common – stories of clinicians hiding supplies within closets, cabinets and even ceilings.

With no visibility into hidden inventory, supply chain staff struggle to determine what products have been consumed, how to set accurate par levels, how to support appropriate replenishment, and how to perform resource forecasting. There are patient safety implications as well – with no visibility into hidden inventory, supply chain cannot manage expiry dates and quickly track down products in the case of a recall.

Another common practice by clinical staff at Mercy that affected inventory management was related to the weight of supply bins or cases used for specific procedures. Clinicians were known to remove some items from the preference cards because they increased the weight of a tote that had to be physically moved. These items would be pulled in an "ad hoc" fashion for each case. This had a potential impact on visibility of use, charge capture, EHR documentation and inventory management.

"We realized that we needed to give people the ability to do what they do best," said Mentel. "So the clinician focusing on the patient and preparing for the case, the physician focusing on the patient in the case, and supply chain managing the product and the flow both before and after the case."

Rocchio and Mentel were determined to shift this "culture of fear" into a "culture of collaboration" through their initiative. They came up with a number of ways to foster collaboration and understanding between their teams. For example, the supply chain team began attending the OR team's morning huddles, and in turn the OR team began participating in the supply chain's huddles.

"Collaboration between supply chain and the OR is not a one-time thing – it is a day to day interaction that allows you to appreciate what the other person is doing and be thoughtful of the changes you might make and the downstream impacts on others," said Mentel.

> Today in most healthcare organizations, perioperative clinicians assume some role in inventory management. Without a thorough understanding of the supply chain and how it works, clinicians often exist in what Rocchio describes as a "culture of fear." Afraid that supplies will run out or a surgeon will not have a specific product when he/she needs it, the practice of hoarding supplies is common – stories of clinicians hiding supplies within closets, cabinets and even ceilings.

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Linking with **Finance and IT**

Rocchio and Mentel came to the realization that while clinical operations, supply chain, finance and IT all exist in the same space, there was almost no collaboration of process execution among them. They determined their efforts would not be successful in isolation and that interdepartmental collaboration in the inventory management transformation process was critical. Therefore, they engaged with cross-functional teams and utilized a Six Sigma approach to assess people and process elements for performance enhancements in the Mercy perioperative areas.

"What we needed was not just a change in process, but also a change in how we think and how we interact," said Mentel. "We needed supply chain, revenue, finance and clinical operations to work together in synergy owning the process for mutual success."

An overhaul of inventory management processes would directly impact not only supply chain and clinical staff, but finance as well. The solution to the problem must include improvements to how product usage is captured for patient billing and reimbursement. It must also provide a way for Mercy to gain a true assessment and visualization of its supply assets.

"The finance team wants to know the value of what they have within the four walls of their organization at all times," said Mentel. "The reality is that without having an accurate inventory management system, they never have that true visibility. So they have armies of people who do cycle counts once or twice a year – that's the value they put on their books. However, at any time the flow of inventory can change because it fluctuates significantly in the millions of dollars. That becomes the first flag for us when it comes to metrics. The ability to recognize unrecognized inventory assets."

As for technology, it was obvious that Mercy's manual inventory management processes in the perioperative space were not adequate for meeting its goals around cost, quality and outcomes. The healthcare system needed a unified, electronic and automated solution that was closely integrated with clinical, supply chain and financial systems (e.g. EHR, enterprise resource planning (ERP)), and that provided the various stakeholders with the data and workflows they needed to optimize patient care delivery.

To achieve this, Mercy's IT team needed to be involved in the solution development from the very beginning and work collaboratively with the clinical, supply chain and finance teams to ensure the resulting solution met all of their needs.

"IT isn't outside of the clinical and operational realm – it is very much part of everything we do here," said Gil Hoffman, Mercy's Senior Vice President and Chief Information Officer. "And this wasn't just a clinical project or a tech project – it was a Mercy project that was focused on better patient outcomes, with the benefit of also reducing a tremendous amount of cost."

Electronic Health Records

OR Supply Chain Execution

Enterprise Resource Planning

Analytics
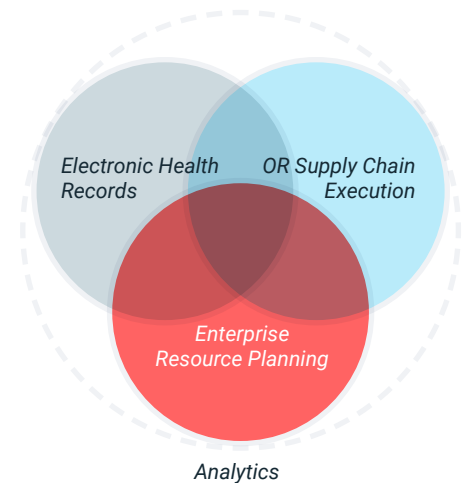
Mercy needed a unified, electronic and automated solution that was closely integrated with clinical, supply chain and financial systems, providing the various stakeholders with the data and workflows they needed to optimize patient care delivery.

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Finding a **Solution**

Mercy wanted a solution that was integrated, automated and offered many levels of visibility into key perioperative performance indicators. This would better position the organization to reduce variation in product selection, cost and surgical practices.

Rocchio and her team examined its existing technology resources, but determined it needed a new technology solution to address its perioperative inventory management challenges. They evaluated a variety of inventory management solutions that were in use at other hospitals, but none of these solutions met their needs.

"We saw inventory management systems for perioperative services at 10 hospitals, but none of them took into consideration clinical staff workflows or delivered value in their daily work," said Rocchio. "I saw a lot of front line staff working around a supply chain tool that really didn't do much, but deliver reports to supply chain. And the last thing anybody wants is front line staff scrambling to use an inventory management tool when a patient is on the OR table."

Mentel approached Tecsys, one of Mercy's current technology suppliers, which provides solutions to manage Mercy's consolidated distribution center. At the time, Tecsys was exploring how it could address the needs around perioperative inventory management.

"We had started working with Tecsys 15 or 16 years ago when we began our self-distribution journey so we had a lot of experience with the company and good success on that front," said Curtis Dudley, Mercy's Vice President, Integrated Performance Solutions. "We entered into this partnership with Tecsys to build a solution that brought the experience they had on the warehouse inventory side into the OR environment."

> "The missing piece of the puzzle was a truly consolidated software platform that marries the clinical with the back office, eliminating those performance gaps that exist when one system ends and the next one picks up where that one left off. What we needed to do was co-create a user."

Betty Jo Rocchio
MS, RN, CRNA, CENP
Senior Vice President and
Chief Nursing Officer, Mercy

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The Development Process:
Clinically Led and Operationally Driven

"The Integrated Performance Solutions team introduced me to Tecsys and we began talking about what an ideal inventory management system looks like in perioperative services," said Rocchio. "Tecsys has been a great partner and we had a shared vision that the solution needed to be clinically led and operationally driven."

Rocchio engaged the help of then Regional Perioperative Director Emily Tchiblakian because of her 20+ years of experience in perioperative environment and extensive knowledge of inventory management. She tasked Tchiblakian to work with the Tecsys team to enhance their understanding of current clinical workflows in the perioperative area, specifically around surgery and the use of supplies.

"We had an initial conversation and from there moved into a mock flow of a surgical procedure – we took them through the route the patient would take and how the supplies are intercepted at different points along the path of the patient. This built on their initial knowledge base," said Tchiblakian.

As part of the exploration process, Mercy created a variety of inventory management case scenarios – from easy to extremely complex – to highlight the range of challenges that the OR and supply chain teams face on a daily basis. These included scenarios where additional products were added to a case, or the substitution of unavailable products.

"Tecsys had never focused on a specific clinical area like this before and we certainly hadn't either so clinical involvement was critical," said Elmer Ridder, Mercy's Senior Clinical Consultant, Pharmacy Automation, Integrated Performance Solutions. "We brought in representatives from each of our hospitals during the software solution development process to ensure we were all going in the right direction and the solution was acceptable across our organization."

Hoffman and his IT team worked closely with Tecsys on both solution development and system integration. This included how the inventory management solution would integrate with Mercy's EPIC EHR and other systems so that stakeholders across the organization would have access to real-time inventory data.

"You don't find many vendors that will work collaboratively like this," said Hoffman. "Tecsys stuck with us and we stuck with them through thick and thin. They had faith in us, we had faith in them and we had trust in each other – it takes a lot of faith and trust in a partnership like this. At the end of the day we accomplished what we set out to do and this success is to everyone's credit."

> "We brought in representatives from each of our hospitals during the software solution development process to ensure we were all going in the right direction and the solution was acceptable across our organization."
>
> **Elmer Ridder**
> Mercy's Senior Clinical Consultant, Pharmacy Automation, Integrated Performance Solutions

The Technology:
A Perpetual Inventory Management System

The result of this collaboration has been a perpetual inventory management system where clinical, operational and financial workflows are driven by preference cards. Through Tecsys' Elite™ Healthcare POU solution, which is integrated with Mercy's EPIC EHR system and Infor's Lawson ERP system, the health system is able to do the following:

Use preference cards to drive product selection for a case	Real-time updating improves accuracy
Allocate the products as a procedure is being scheduled	Enables projected supply demand for planning purposes
Pull the products for a procedure, build the case cart and have it ready for consumption when the clinician walks in the room	Creates an "allocated" status for staged or pending inventory
Decrement the products from inventory upon consumption, documents the return of unused products into inventory	Provides inventory visibility across the care chain
Document product usage in the patient's clinical records	Quantifies the cost of the procedure

According to Dudley, tight integration between Mercy's EPIC EHR system and Tecsys' Elite™ Healthcare POU solution was a critical factor in the project's success. When the clinician is working within EPIC, the Elite™ Healthcare POU solution is launched from inside EPIC with an appearance that is consistent with EPIC screens. The upside is that the clinician does not have to manage a different application.

"The Elite™ Healthcare POU solution is 'context aware' so whatever record a staff member has open in EPIC, they click on the link and the application is smart enough to know what patient record that clinician is working on and automatically connects to that patient information. It is seamless," said Dudley.

During a case, OR staff use the Elite™ Healthcare POU solution by scanning the preference card, which facilitates charging of all items in the "open" position. Next the clinician scans all items in the "PRN" position when used, and all implants and add-on supplies also when used. As a result, each product that was in the OR room is categorized appropriately at the conclusion of a case, driving more accurate and efficient inventory management, patient record documentation, charge capture and billing. In addition it provides data that can be used later to analyze use and support recommendations for adjustments to the preference cards.

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With greater visibility into its inventory and products used in patient care, Mercy has also enhanced patient safety. Supply chain staff members can more accurately and efficiently identify the location of recalled products within Mercy's inventory and remove them before they are used. Because used products are accurately documented in the patient's electronic health record, Mercy can also more accurately and efficiently notify patients of a recalled device or one associated with an adverse event.

"The Tecsys Elite™ Healthcare POU solution sends me a consolidated message for the last 10 cases," said Rocchio. "So if Dr. Brown had a number five trocar listed as 'open' on his preference card but supply chain put it away after every case then we know to remove that trocar from the open category. We now have an accurate and automated way to keep preference cards clean and updated."

Next the supply chain staff uses the solution to scan any unused and unopened products and return them to inventory, which has significantly improved inventory visibility and accountability. Using the Tecsys dashboard, the supply chain team can see which products the circulating nurse billed to the patient. If there is an unused product on the cart that was inadvertently billed, or a product that was used but not billed, Mercy can make the necessary adjustments in its systems.

"Through process improvement and the appropriate technology solution, we have greater visibility into our inventory and better control over it," said Mentel. "Now we replenish products when we actually hit our reorder points rather than replenishing when we experience a false trigger, or worse yet, fail to replenish because we believe we have enough in stock. We have also decreased our number of cycle counts and the number of redundant inventory locations. There has been a significant improvement in inventory utilization by how we manage inventory, where we manage it and reduction of redundancy."

The Elite™ Healthcare POU solution has also provided the ability for Mercy to optimally manage consigned inventory. Mentel explains that in the past they had to rely on the vendor to document what consigned or "trunk stock" products were used in a case, and the price for those products. Now using Elite™ Healthcare POU solution, OR staff captures information on the product at the point of use and documents it, with the correct pricing, within their systems.

> "When you are talking about billions of dollars' worth of assets, adding visualization to that is a huge eye opener."
>
> **Emily Tchiblakian**
> RN, BSN, MHA,
> Mercy's Senior Clinical Consultant, Perioperative Services,
> Integrated Performance Solutions

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"This was a great partnership between an outside vendor, a very strong and hardworking internal clinical group, an operations group, IT department and analytics team. What I felt was most rewarding about this project is that it demonstrated to the rest of the organization the coordination and teamwork that was needed to really make something like this, of exceptional value, happen."

Gil Hoffman
Mercy's Sr. Vice President and Chief Information Officer

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The Bigger Picture:
Integration with Mercy's Unified Analytics Platform

A single "point of truth" for high-impact specialty decision-making

In Mercy's quest to understand the true cost of care, the health system developed its Unified Analytics Platform (UAP), which is a single "point of truth" for high-impact specialty decision-making. The UAP combines data from multiple technology platforms, providing users with accurate and actionable data that is used to identify best practices, drive standardization and reduce costs. Mercy's work to develop its UAP has been well documented, earning the health system a 2016 Gartner Healthcare Supply Chainnovators Award, and the HIMSS Davies Award in 2017.

In the Perioperative Transformation project, the team leveraged the work of the UAP to truly gauge and measure procedural costs. The UAP features dashboards showing the revenue and costs within each specialty, providing visibility into the total cost of care by procedure, facility and individual clinician[3].

Mercy generates a "receipt" for the surgeon at the end of his/her case that includes all of the product/supply costs. This information flows to the UAP, where Mercy's staff can compare a surgeon's costs for a particular procedure against all of his/her peers within the system. The outputs provide the data needed for discussions with surgeons around cost, outcomes and potential standardization. It enables the surgeons to look at facts to determine the best clinical pathways for various patient cohorts, which in turn should drive more consistent and predictable results. This is the most evolved state of the Triple Aim.

Rocchio explains that even if a health system doesn't have the resources to develop their own version of the UAP, they can use the Elite™ Healthcare POU solution to gain visibility into their cost per case. She states:

"The very best health systems, including Mercy, have traditionally managed cost per case after the case is done. We need to start managing cost per case in the OR where we know the cost of the products as the surgeon selects them," she adds. "The Tecsys Elite™ Healthcare POU solution does that for us – we know the cost of every single item in the OR. It's incredible when you can scan four products and tell a surgeon the individual cost of all four products so he or she can make an informed decision right there during the procedure. It enables them to make a decision that supports high quality care while being sensitive to the limitations on resources to which we are managing."

> "Today perioperative services is a revenue center in surgery but tomorrow we could become a cost center and not even realize it if we don't know our costs of doing business. Historically we were paid for every case that we did, but now we are increasingly paid based on quality measures, which will change this whole volume mentality we have today."
>
> **Betty Jo Rocchio**
> MS, RN, CRNA, CENP
> Senior Vice President and
> Chief Nursing Officer, Mercy

3. A detailed description of Mercy's UAP can be found in the 2016 AHRMM CQO Report: CQO and the Triple Aim: Supply Chain's Strategic Connection, on the Association for Healthcare Resource & Materials Management (AHRMM) website.

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The Results

Through their work on the perioperative transformation of people, process and technology, Mercy anticipates that it will save between $11M - $13M over the next four years, while at the same time driving higher quality care and improved patient safety.

Savings areas include:

Realizing Unrecognized Inventory Assets	**$2.4M** in savings	The Elite™ Healthcare POU solution enables Mercy to have complete visibility and control over its perioperative inventory assets, where it anticipates an estimated $2.4M in savings opportunities.
Improved Inventory Utilization	**$4.7M** in savings	Increased visibility into inventory assets has enabled Mercy to better manage supplies. Clinicians now trust that supplies will be available when needed, eliminating product hoarding and generating an estimated $4.7M in savings.
Optimizing Charge Capture	**$13M** in savings	By documenting at the point of use the products used in a case, Mercy has improved its charge capture processes, for an estimated $13M in savings.
Improved Preference Card Accuracy	**$459,000** in savings	Preference cards, the heart of this project, has improved accuracy and efficiency not just in the OR but throughout Mercy's operations (e.g. supply chain, revenue and finance). Surgeons now have what they need for every case while supply chain is no longer pulling unnecessary inventory and then having to return it. Mercy anticipates $459,000 in labor savings.
Automation of Replenishment	**$480,000** in savings	The Elite™ Healthcare POU solution automates supply replenishment through its integration with Mercy's ERP system. Mercy anticipates that it will save $480,000 in labor costs.
Reduction in Cycle Counts	**$167,000** in savings	With real-time visibility into and control over its inventory, Mercy has reduced cycle counts, and in turn reduced its labor for this task, an estimated $167,000 in savings.

"I believe the future of healthcare will need this type of collaboration across all departments. If I were to talk to CEOs across the country, I would encourage the development of cross-functional teams like our integrated performance solutions."

Betty Jo Rocchio
MS, RN, CRNA, CENP, Senior Vice President and Chief Nursing Officer, Mercy

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About **Tecsys**

Since our founding in 1983, so much has changed in supply chain technology. But one thing has remained consistent across industries, geographies and decades — by transforming their supply chains, good organizations can become great.

Our solutions and services create clarity from operational complexity with end-to-end supply chain visibility. Our customers reduce operating costs, improve customer service and uncover optimization opportunities.

We believe that visionary organizations should have the opportunity to thrive. And they should not have to sacrifice their core values and principles as they grow. Our approach to supply chain transformation enables growing organizations to realize their aspirations.

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