

A photograph of three healthcare professionals, two women and one man, all wearing blue scrubs and smiling. The man on the right has his arms crossed. The woman in the middle has her hand on the shoulder of the woman on the left. The background is a bright, modern clinical setting.

WHITE PAPER

A Holistic, Integrated Approach to the Healthcare Supply Chain



Introduction

The healthcare supply chain today is complex and costly. Supply chain represents the second largest area of expense for hospitals (behind only labor), consuming approximately 40-55 percent of the average operating budget. One to six studies have shown that hospitals can avoid between 5-15 percent of that cost through better supply chain practices, thereby increasing operating profits by anywhere from two to seven percent.¹⁻⁶ So why hasn't this happened?

Unlike retail and other industries where the supply chain is viewed as a strategic asset, the healthcare supply chain has often been underleveraged – and even neglected. Most healthcare organizations are managing supplies using outdated information technology systems that cannot communicate with one another. As a result, supply chain processes are largely manual, with staff keying data into various systems as they procure products, manage inventory, capture its use and trigger replenishment needs.

The implications are far-reaching. The manual labor required among supply chain, operations and clinical staff is inefficient, error prone and expensive. With disjointed systems and data, healthcare organizations have little visibility into/control over their supplies. This leads to significant waste. Clinicians waste valuable time tracking down the supplies they need for patient care. Supplies are wasted as they go unused and expire in areas with excess inventory. In areas with inadequate inventory, departments waste time searching for supplies elsewhere in the hospital, and money by procuring additional supplies, often incurring rush charges and high freight fees. Hospitals and health systems waste time and money managing multiple courier services to transport medical-surgical supplies and clinical service items (e.g. patient specimens, records, mail, laundry) throughout their facilities. Without a centralized means to manage supply procurement and management enterprise-wide, organizations cannot accurately assess their supply chain performance and engage in strategic business activities, such as forecasting and demand planning.

For decades, experts have pointed to the inefficiencies, costs and waste in the healthcare supply chain as a significant drain on the industry's financial resources. They have urged healthcare organizations to take a holistic, integrated approach to their supply chains where the procurement, management and movement of supplies is facilitated on an enterprise-wide level using an automated and integrated approach.⁷⁻¹¹ Those that have heeded the experts' advice and implemented technology to build efficient, effective and sustainable supply chains have significantly cut costs and reduced labor, while improving patient care delivery by ensuring the right products are at the right places at the right times.¹²⁻¹⁵



*Supply chain consumes
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In this paper, we explore the challenges of today's disjointed and manual healthcare supply chain processes, the drivers that increase complexity and cost, and the significant opportunities that exist for healthcare organizations to achieve greater operational efficiency and hard dollar savings through supply chain improvements.

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The Healthcare Supply Chain Current State: **Fragmented, Wasteful and Costly**

The supply chain in healthcare is unlike that in any other industry. For most hospitals, the parties and processes required to get a product from the manufacturer to the point of use are many and varied, resulting in high costs and significant waste.

In a 2015 survey of 150 hospital decision makers on supply chain issues, commissioned by Cardinal Health and conducted by healthcare data provider SERMO Intelligence, only one-third of hospital decision makers rated the management of their hospital's overall supply chain as "very effective." On the other hand, two-thirds of those surveyed "strongly agreed" that improving the effectiveness of their supply chain will reduce overall costs, increase revenue and lead to better quality of care. Of the 150 hospital decision makers, 85 percent said their health systems are currently working to identify or implement new ways to reduce supply chain waste and related costs.¹⁶

Here are some of the challenges hospital executives are working to overcome.

Multiple Players

Each day, thousands of people work to ensure the right products and supplies are at the right places at the right times to support patient care. To run smoothly, the healthcare supply chain requires the efforts of manufacturers, distributors, group purchasing organizations (GPOs), healthcare systems and hospitals, and other third-party vendors, such as shipping services (e.g. UPS, Fed Ex) and couriers. In a hospital alone, there are multiple stakeholders who play a role in procuring and managing the products and services used for patient care (e.g. supply chain, clinicians, operations, finance). Researchers note how it is not uncommon for a product to be touched 10 times before being used by a patient.¹⁷

- GPOs: 90 percent of hospitals use national GPOs, routing most of their product purchases (56%) through their primary national GPO, and an additional 19 percent of purchases through regional and local GPOs.¹⁸
- Distributors: Nearly 100 percent of patient procedures are supported by medical products delivered by a distributor.¹⁹

Healthcare organizations are increasingly moving to self-contracting and/or self-distribution models to reduce the complexity of multiple players, increase control and avoid paying unnecessary markups while allowing the organization to leverage volume discounts by buying in bulk. As of 2016, there are over 50 known consolidated service centers (CSC), with a dozen or more healthcare organizations currently known to be evaluating, planning or developing a CSC. This is an increase of over 25 percent since 2014 and over 47 percent since 2012.²⁰

Top performers who have adopted a CSC model have seen a significant drop in operating expenses. However, none of them have completely removed their GPOs and distributors from the equation. Rather, they focus their efforts on higher value-add categories while relying on GPOs and distributor relationships for lower value commodity items.²¹

Unconnected Systems and Manual Processes

Adding to this complexity, each party to the healthcare supply chain typically uses its own internal information technology (IT) systems. These systems cannot communicate with one another, and in most cases, do not speak the same language when it comes to product identification. This is the case not only between trading partners (hospital – distributor – manufacturer) but also within healthcare organizations, where lack of system integration among departments (e.g. supply chain, clinical, financial) and between facilities is well documented.

This problem has only increased as mergers and acquisitions (M&As) grow within the healthcare industry. As health systems attempt to integrate with the hospitals they have acquired, they are faced with the challenge of disparate systems, processes and data that are not easily reconciled.

A Deloitte study identified that organizations focused on supply chain cost as the synergy-driver in their post-acquisition integration efforts have performed better compared to peers.²² This highlights the need for a unified end-to-end supply chain management (SCM) platform that can consolidate capabilities and all material-related information while driving standardization across newly acquired entities in an easy and scalable way. Standardization and automation simplify processes, alleviate complexity and provide enterprise visibility for informed decision making, which avoids corrective actions.

Compliance Risk and Data Integrity

Because most hospitals lack system integration – both within their four walls and with business partners – supply chain processes are manual and unique to the hospital itself. Manual processes increase the risk for human error, resulting in supply chain data that is inaccurate, inconsistent and incomplete.

Lack of data visibility and access, and poor quality data, are frequently cited by experts as a major roadblock to supply chain improvements in the healthcare industry.²³⁻²⁴ Bad data slows processes, increases costs and labor, and prevents healthcare executives from making strategic decisions on their supply spend and management.

In a 2016 study²⁵, the top two challenges ranked by supply chain management executives were “data capture compliance” and “access to reliable data”. A system is only as good as the data being entered into it. The mitigation and control of compliance risk drives sustainable data integrity. Organizations that have implemented radio frequency identification (RFID) technologies at the point of use have achieved very low compliance risk due to the reduced effort required to track and trigger business rules for replenishments.

Results of this Complexity

Today's complex, fragmented healthcare supply chain drives up costs, labor and waste for everyone involved. It prevents healthcare executives from assessing the true costs of managing supplies, and from taking steps to become more efficient and cost-effective in this area. Here are some of the challenges hospital executives are working to overcome.

High Costs

Supply chain represents 40 to 45 percent of hospital or healthcare system's operating expense.²⁶ One out of every three dollars that health systems spend is for supply chain operations.²⁷

The seventh annual UPS Pain in the Chain study reports even higher supply chain costs, noting that the average healthcare firm draws 60 percent or more of its cost in purchases from suppliers.²⁸ And it is a problem that is not going away; experts predict that supply costs will supersede labor costs in healthcare as early as 2022.²⁹

Inefficiency/Waste

Supply chain inefficiencies are everywhere within a healthcare organization due to lack of automation and process standardization – from warehouses to the bedside. The time and labor spent on moving and managing supplies increase costs and take time away from patient care. The inability to effectively locate and track products and supplies within a hospital leads to waste as items expire on shelves.

- Transportation: 60 percent of hospital C-suite executives surveyed incurred unnecessary transportation fees because they didn't have enough of the right products on hand at the right time.³⁰
- Labor: Nurses can spend up to half their shifts running errands, waiting for transport, and looking for equipment and supplies. Inventory has been referred to as one of "The Deadly Wastes in Healthcare Processes," representing 50 percent of labor waste.³¹
- Inventory: Inefficient manual business processes and lost, wasted and expired products result in an estimated \$5 billion in annual loss in the implantable device market.³² Additionally, eight percent of distributed volume is wasted due to inefficient inventory management practices in healthcare.³³

In many cases, this waste is due to the fragmented nature of systems in healthcare. There are multiple legacy systems for different supply categories within each department type, and even within departments. For example, nursing units typically manage general supplies within an enterprise resource planning (ERP) system, catheterization laboratories (Cath Labs) manage stents in a hemodynamic (Hemo) system, and the operating room (OR) manages medical devices in an OR information system.

The core competency of these legacy systems is either clinical documentation or finance with inventory management capabilities as an afterthought. Because they were not built with inventory management best practices in mind, information is siloed and disjointed, which prevents enterprise visibility and control. This, in turn, leads to erratic inventory levels with inconsistent turns, increasing the risk of expiration and obsolescence with one swing of the pendulum, while risking undersupply and expensive reactionary processes at the other end.

Lack of Visibility/Control

“You can’t manage what you can’t see and you can’t improve what you can’t measure”, is a common saying among healthcare supply chain executives. While most healthcare organizations have a wealth of data, it is rarely standardized, complete or accurate. Healthcare supply chain data is often stored in siloed systems, or locked up in Excel files or paper documents.

Executives cannot access the information they need to gain an assessment of supply chain related spend, let alone manage and control it. As many experts point out, healthcare is an industry that is “data rich and information poor.” With healthcare legislation in flux and hospitals under pressure to comply with the transparency of changing payment models, they must have the ability to accurately calculate the cost of supplies used in the delivery of patient care.



A Holistic, Integrated Healthcare Supply Chain

Yes, the healthcare supply chain today is costly and wasteful, but it also presents a significant opportunity for improvement and savings. Hospitals can only cut so much when it comes to their largest area of expense – labor – before negatively impacting patient care. On the other hand, improvements to their second largest expense category – supply chain operations – can not only cut costs, but also enhance patient care by improving the accuracy and efficiency with which products and services are delivered.

This Approach Requires **the Following Elements:**

Automation Through Technology

Healthcare has traditionally lagged behind other industries when it comes to supply chain technology investments. In order for a hospital to transform its supply chain from a major liability into a strategic asset, it must transition from manual to electronic processes. This requires the use of enabling technologies for supply chain automation.

Technologies enabling standardization, consolidation and integration within a unified platform are a prerequisite to overcome the complexity and challenges previously mentioned as more point solutions and manual processes only amplifies the problem and further prevents the objective of enterprise visibility and control.

Automation via auto ID technology streamlines and improves processes such as inventory management, asset tracking and charge capture for billing. It supports many different clinical processes and patient safety initiatives, including product tracking for recalls and adverse events. Data capture via auto ID reduces the required effort to enter data, and therefore compliance risk, for a more accurate data feed providing sustainable data integrity.

Healthcare supply chain experts at Arizona State University (ASU) conducted a study of healthcare IT capabilities and financial performance and found IT investments enhanced inventory efficiency, which, in turn, resulted in increased stock market returns. IT capabilities also reduced stock market risk and enhanced stock market value.³²

Holistic Management Through Integration

In its current state, it is impossible for healthcare executives to gain full visibility into or control over their supply chains because they are so divided. Within a hospital, multiple individuals are using various IT systems to perform their role in the chain – from inventory management to supply transport to charge capture and replenishment – and these systems can't communicate with one another.

A Cardinal Health survey revealed that primary obstacles to improving supply chain management include the lack of a full, end-to-end view of the supply chain from manufacturer to patient, and low awareness of current technology, such as automated solutions that utilize high-frequency RFID tags.³⁵ Experts agree that hospitals need a holistic, integrated and automated supply chain approach in order to improve efficiency, cut costs and reduce waste.³⁶⁻³⁹

In this model, well-performing legacy systems can integrate with the platform, while poorly performing legacy systems are replaced with best-in-class capabilities. This drives best practices for certain areas, while consolidating all material-related data into a measured performance overview aligned to goals and objectives and the strategy to achieve them. Through integration, captured supply data can be consolidated in a central location and leveraged for strategic decision-making.

Just-in-Time Not Just-in-Case

A supply chain should support just-in-time (JIT) inventory management, where supplies are delivered to the right places at the right times based on user demand. Accurate demand capture is a necessity to establish JIT inventory levels as an erroneous replenishment practice will lead to hoarding and excess “just-in-case” inventory.

According to the Healthcare Industry Distributors Association (HIDA), approximately 50 percent of hospitals rely on JIT or low-unit-of-measure (LUM) programs. Benefits of these programs include: reduced inventory levels, fewer resources required for receiving and stocking, and the elimination of touch points - that traditionally included placement of products in ‘general stores,’ picking the product, and subsequent delivery to the using location.⁴⁰

Analytics

In order to harness the power of supply chain data, a hospital must not only be able to collect and consolidate it, but also have the ability to act on it. That is where analytics comes in. Hospitals need a supply chain management solution that provides flexible analytics capabilities so that they can understand their current state, make changes and track improvements over time. Continuous improvement is a journey that should not be walked blindly.

Benefits of This Approach

Hospitals that have taken a holistic, integrated approach to their supply chains are cutting costs, achieving better financial outcomes and improving patient care quality at a time when many healthcare organizations are struggling to stay viable.

Hard Dollar Savings and Greater Profitability

For a healthcare organization with a two percent operating margin, one dollar of expense reduction is worth \$50 in gross revenue – so \$100,000 in supply chain savings is equivalent to \$5 million in gross revenue.⁴¹ Research has shown that hospitals can cut supply chain costs by anywhere from five to nearly 50 percent through greater supply visibility, management and control, with experts stating that even small improvements can yield significant financial results.

- Gartner: Many healthcare organizations can reduce supply chain costs by five to 15 percent if they better analyze, plan and control the purchase and use of goods and services, translating into a profit increase of two to seven percent.⁴²
- McKinsey: Healthcare supply chain transformation can impact hospital profits by anywhere from 12 to 21 percent.⁴³
- Oracle: Supply chain managers should be able to produce supply costs that are a full two percent to four percent lower than their peers and do it with fewer personnel, equating to a savings between \$20 million and \$40 million annually.⁴⁴
- PricewaterhouseCoopers: Even small improvements in supply chain performance can have an enormous impact on a hospital's bottom line, helping to reduce supply chain costs by as much as 10 to 12 percent. Inventory optimization can account for 10 percent of the overall savings.⁴⁵
- UPS: It is very feasible for healthcare organizations to realize a 15 percent reduction (or more) in cost in the short run with much more possible.⁴⁶
- CSC: Based on its review of healthcare industry practices, and drawing upon its past work on similar supply chain initiatives in other industries, CSC determined that the healthcare industry could reduce its overall supply chain costs by more than \$11 billion - 48 percent - of current process costs.⁴⁷

Productivity and Efficiency

In addition to hard dollar savings, supply chain improvements boost staff productivity and process efficiency, allowing hospitals to focus resources on where they need it most. With a holistic approach to supply chain, a hospital knows exactly where supplies are located and can transport them to where they are needed in an efficient and effective manner, reducing excess inventory and over-purchasing. When processes are in place to electronically capture supply movement and usage, manual labor is decreased and the risk for human error is lower – as is subsequent rework.

This can significantly improve patient care quality. In nursing satisfaction surveys conducted by health systems themselves, 93 percent of RNs agree that: “The current stocking process **NEGATIVELY** impacts patient care.”⁴⁹ Effective and efficient supply management minimizes the risk of stock-outs, the chance that expired or recalled products will be used on patients, that specimens will be lost, and myriad other incidents and accidents.

Visibility

An enterprise-wide approach based on a unified platform enables healthcare executives to not only see their supply chain “big picture” but also drill down on the details for strategic decision making. They can make educated decisions related to supply and service standardization, procurement, inventory management and logistics based on concrete data rather than guesswork. This is particularly important as the direction of healthcare shifts from volume-based to value-based care.

The savings derived from supply chain analytics can be significant. For example, Mercy and ROi were granted the Gartner 2016 Healthcare Supply Chainnovators Award for saving upwards of \$9 million in surgery-related costs through the development and use of a comprehensive analytics platform. The platform allows the organization to see the total cost of care, including labor, product selection, product cost, length of stay and inventory holding costs by procedure, and compare them across the health system.⁵⁰

Control

Improvements to the quality of patient care begin with planning for the future. With visibility into supplies and their movement into and throughout the health system, executives gain control over their current state and can plan for the future. A holistic approach to supply chain management facilitates effective forecasting and demand planning by providing information on supply spend, usage, inventory levels and supply location.

Intermountain Healthcare saved \$4.5 million in item cost savings, and achieved an additional \$23 million in value creation by reducing clinical commodity product variations. Critical to this initiative was clean item master data so that the organization could gain visibility into its purchasing history. Intermountain also worked on contractual and pricing agreements with its supplier partners to achieve improved availability. Furthermore, it introduced new controls in purchasing, accounts payable and receiving to detect rogue purchases and secure customer service opportunities.⁵¹

A 2015 survey from the GPO Premier revealed the variety of ways supply chain improvements reduce staff resource related costs:⁴⁸

Resource use in purchased services

43%



Staffing and labor efficiency, nursing

43%



Length of stay

38%



Staffing and labor efficiency, outsourcing

30%



Staffing and labor efficiency, physicians

29%



Level of care

27%



Conclusion

For decades, the healthcare industry has known that it loses billions of dollars annually through its supply chain processes. While in the past, hospital executives could turn a blind eye to this problem because revenues were strong and there was no real impetus for change, today they have no choice but to tackle supply chain challenges – their organizations' survivals depend on it.

The recognized value of supply chain in healthcare is growing. Whereas in the past it was considered a back office function, today, supply chain managers are increasingly getting a seat at the hospital C-suite table. Organizations such as Mercy/ROi and Intermountain Healthcare have proven the strategic value of supply chain operations in cutting costs and driving revenue, and other hospitals and health systems are following suit.

Leading healthcare experts have long voiced the need for an enterprise-wide, integrated and automated supply chain strategy that enables a hospital to have full visibility into and control over its supplies, and the data necessary to make changes that will lower costs and increase profitability. The technology to support this strategy now exists and those hospitals that have embraced it are reaping the benefits, with documented savings and improved performance.

The time for change in the healthcare supply chain is now. As an industry we cannot afford the luxury of waste – it is unsustainable. The journey starts with a goal, the strategy to get there, and the foundational structures and technologies laid out for a solid footing.

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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.



www.tecsys.com

info@tecsys.com

Phone: 514-866-0001

Toll Free: 1-800-922-8649

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