

WHITEPAPER

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FIXING THE FAILURE TO COMMUNICATE
INVENTORY MANAGEMENT SYSTEMS CLOSE
THE GAP BETWEEN EHR AND ERP

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“Hospitals are settling for systems that are not integrated — they’re sticking a square peg into a round hole.”

RET. U.S. ARMY COL. FRANCISCO C. DOMINICCI

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Hospital clinicians and administrators have a common goal: Deliver quality patient care as efficiently as possible. Yet the technology systems they use to achieve that objective differ, and often live in siloed domains. This causes data-sharing gaps that hinder enterprise-wide efforts to drive quality care and cost savings.

The chasm between clinical and administrative systems is particularly problematic in the surgical theater, where the electronic health record system (EHR) and the enterprise resource planning system (ERP) are critical. While these systems are highly proficient at capturing data, they have significant data sharing limitations that result in missed charge capture, lost inventory, higher waste, and burdensome manual data entry for staff members.

“Hospitals are settling for systems that are not integrated—they’re sticking a square peg into a round hole,” says retired U.S. Army Col. Francisco C. Dominicci, Chief of the Defense Health Agency’s Solution Delivery Division. “That raises critical problems related to operational efficiencies, real-time reporting, and staff workflows.”

A small but growing number of hospitals are fixing the disconnect between EHRs and ERPs by implementing point-of-use inventory management systems (IMS). These systems—which procure and track inventory levels, orders, sales, returns, and deliveries—also automatically capture data from EHRs and ERPs in real time—saving staff time, enhancing supply chain accuracy and visibility, and closing the loop between inventory and clinical use.

This paper further explores how an IMS improves patient safety, staff satisfaction, productivity, and cost savings. It also offers recommendations for fostering collaboration between departments to successfully launch and deploy an IMS.

Lack of Integration

Between ERPs and EHRs

Contributes To:



Missed Charge Capture



Lost Inventory



Manual Data Entry



Data Gaps



Less-Informed Decision Making



ERP Gaps in Perioperative

Areas Include Their

Inability To:

- 1 Provide real-time inventory visibility
- 2 Track when and where supplies move within the organization
- 3 Monitor products used in patient care (or returned afterward)
- 4 Warn clinicians when items are expired or recalled (or are about to be)
- 5 Control high-cost supplies, such as consignment products or pharmaceuticals
- 6 Provide analytics, reporting, or insights about supply return rates, damage, loss, and waste

LIMITATIONS OF ERPs IN INVENTORY MANAGEMENT

Since the late 1990s, many healthcare organizations have looked to ERPs to improve accuracy in finance, operations, supply chain, billing, reporting, payroll, and human resources. Yet, while ERPs have enabled hospitals to make significant administrative and operational efficiency gains across several departments, their reach within the perioperative environment—a hospital's largest revenue driver and an area where supply chain, patient safety, and billing overlap—is limited.

Also significant: Once supplies transition to the procedure environment via a pick list, ERPs lose track of them. This affects returns and charge capture while furthering inefficiencies, since returned items must be manually entered into the EHR or documented by hand—which often fails to happen.

A 2017 study in [Applied Clinical Informatics](#) of one ERP system adapted for real-time OR process-steering showed an “increased speed and quality of the accounting and billing of operations and materials, but not that of medical process control.” The study reported that extending the use of existing ERP software to manage processes in the medical realm raises multiple issues, patient safety among them. *Two-thirds of clinical users deemed the ERP system workflows to be “too complicated,”* especially when their capacity to focus on complex data during surgery is limited.

[A recent survey](#) of 100 frontline OR nurses and OR leaders found that only 3% said their hospital's preference cards are always accurate. That means 97% of nurses are dealing with inaccurate preference cards.

LIMITATIONS OF EHRs IN INVENTORY MANAGEMENT

EHRs have transformed our ability to capture and share clinical information, but because they were not purpose-built for inventory management, their documentation workflows aren't streamlined. Surgical preference cards and pick lists are a good example. While many EHRs offer preference card-related tools, they typically generate pick lists based on past cases, rather than using machine learning to modify pick lists over time based on actual supply usage. Pick lists generated by EHRs also tend not to include warnings about expired, recalled, or obsolete items.

Additionally, EHRs do not automatically take account of return rates. If an item needs to be returned to inventory, a clinician must manually enter it in the EHR, which may not happen due to caseloads, time restraints, and patient care needs. Even when clinicians do document returns, the EHR does not close the loop on inventory tracking and charging. For example: When a clinician zeroes-out a pick-list item in the EHR consumption screen, the item is not categorized as a return. This information is then not shared back with the ERP system, resulting in inaccurate inventory data and analytics.

THE DISCONNECT BETWEEN ERPs AND EHRs

Hospitals are further hampered by the lack of integration between EHRs and ERPs. For example, in the perioperative and surgical arenas, hospitals rely heavily on the ERP's "item master"—which serves as a record of key information about inventory—including description, dimensions, ordering quantity, current inventory levels, purchase price variances for materials, etc. This one source of truth for products, medications, and supplies is essential to the bottom line and patient outcomes, as it drives supply chain and purchasing decisions and helps ensure enough items are always on hand.

However, ERP item master updates are rarely pushed to the EHR in real time. That means clinicians who are pulling preference cards, packing carts, and documenting supplies are constantly working from an outdated source of truth. It also means executives are making decisions based on inaccurate data.



How pervasive is this problem? An average hospital uses about 5,000 implants and medical devices per month, according to [Chief Healthcare Executive](#), however, less than 60% of these uses are reported. If a supply needed for a surgical case is not listed accurately in the ERP item master, it will not appear in the EHR. In that case, a clinician, sometimes in the midst of a procedure, must manually look up and input the item number into the EHR. This is a cumbersome process, requiring the clinician to research the item, find the cost, apply the appropriate markup, and create a miscellaneous charge. Miscellaneous charges are generic, hindering accurate inventory data and analytics. Worse, this burdensome workflow associated with manual supply documentation results in many clinicians choosing to forgo the process entirely.

As former administrator of the Centers for Medicare & Medicaid Services (CMS) Seema Verma, MPH, said in a [Kaiser Health News report](#), “Billions of dollars spent building electronic medical records software that does not share data has resulted in an electronic bridge to nowhere. We didn’t think about how all these systems connect with one another. That was the real missing piece.”

How an IMS Addresses Gaps and Enhances EHRs and ERPs

A point-of-use IMS connects the ERP and EHR to improve workflows for both nurses and supply chain teams. It extends clinical systems’ capabilities by enabling an enterprise-wide mobility solution that integrates and updates essential EHR and ERP data in real time.

The most effective IMS systems include:

- Automated point of use tools, such as integrated barcode and RFID scanning
- Streamlined delivery management and cart count processes, including support for multiple replenishment methods so that staff can more easily capture product ID, expiration date, and lot serial numbers, and quickly identify and verify locations as well as FDA recalled items
- Tools that enhance traceability, visibility, and accuracy of all supplies and resources
- Robust analytics to evaluate case costs and variances by procedure or physician
- Machine learning to continually improve demand forecasting and reduce inventory waste

The IMS Delivers Benefits in

Four Key Areas:

1 **More accurate data and more strategic decisions**

When ERP finance, purchasing, payroll and coding functions are not integrated with the EHR, executives miss significant opportunities to save costs, according to Black Book [research](#). An IMS serves as the bridge between the ERP and EHR, helping to ensure that no data is missed—from receipt through point-of-use—and enabling hospital executives to make more-informed, accurate, and strategic supply chain decisions.

2 **Higher margins and less waste**

Hospitals and health systems consistently operate on thin margins, making it imperative to minimize waste, especially in high-cost surgical and supply chain departments. When products are unused, recalled, or expired due to inventory management failures, or when ordering excess inventory takes up scarce storage space and increases costs, that hurts the bottom line.

In the face of supply shortages, it is even more critical to have accurate inventory counts to avoid hoarding and unnecessary carrying costs. An inventory management system solves this problem by continually monitoring supplies in real time and delivering analytics that support highly accurate, lower-cost orders and storage.

3 **Enhanced patient safety**

Whether a healthcare organization runs perpetual or PAR inventory management, months sometimes pass before product expiration dates are checked, which poses patient safety risks. Health systems can minimize liability and enhance safety by digitally tracking expiration dates, recall data, and damage in accordance with [The Joint Commission guidelines](#) for product inventory, storage, and handling. An IMS helps automate these functions, including monitoring the supply chain for products that are expired or close to expiration so they can be used, returned, or donated.

4 **Higher staff satisfaction and retention**

Poor inventory management workflows are a fundamental contributor to the rising rates of nurse burnout and shortages, with a [recent report finding](#) that 43% of hospitals have lost nurses due to supply chain problems.

The more nurses can be relieved of tedious administrative and manual tasks, the more time they can spend at the bedside, which has [proven to improve patient outcomes](#) and increase job satisfaction. By automating many of the functions associated with tracking supply usage, an IMS helps free clinicians to spend more time caring for patients and performing higher level tasks.



Benefits of Deploying an IMS

to Bridge the Gap Between EHRs and ERPs

SUPPLY CHAIN MANAGEMENT WITHOUT AN IMS

- Inaccurate or incomplete preference cards and pick lists
- Inability to input or code supplies added to cards
- Higher return rates
- More expired and recalled items
- Less accurate demand forecasting (and more shortages and cancelled surgeries)
- Higher rates of lost or misplaced items (and more OR delays and prolonged surgeries)
- More staff burnout and waste due to manual processes (for example, staff must manually input supply usage and returns into EHR, with no link back to ERP)

SUPPLY CHAIN MANAGEMENT WITH AN IMS

- More accurate preference cards and pick lists
- Greater ease in inputting or coding supplies added to cards
- Lower return rates
- Fewer expired and recalled items
- More accurate demand forecasting (and fewer shortages and cancelled surgeries)
- Lower rates of lost or misplaced items (and fewer OR delays and prolonged surgeries)
- Optimized PARs due to real-time visibility into shortages & overages
- More satisfied staff and more efficient processes due to automated tasks

Collaboration and Transparency:

Key to IMS Implementation

The successful implementation of a point-of-use IMS solution depends on two key factors: collaboration and transparency. Many departments, including finance, IT, clinical, and supply chain, must work closely together to ensure a successful IMS selection, design, and roll-out.

“Each party should bring its requirements to the table, and leaders should put funding discussions on the backburner,” Col. Dominicci advises. “The focus should be on requirements first, what each department needs and why. That eliminates distrust and power battles over dollars from the beginning.”

Each department should also include front-line users in the planning and implementation processes. Nurses, for example, will be the chief users of the EHR and the IMS. They will be more likely to buy-into the new technology if they have a clear understanding of why the technology is being implemented and how it will benefit their patients and their workflows. Key benefits an IMS provides nurses include:

- Automated tasks
- Streamlined workflows
- More time caring for patients

ABOUT THE AUTHORS



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Betty Jo Rocchio is senior vice president and chief nursing officer at Mercy. Previously, she was the chief nursing optimization officer at Mercy after serving as vice president of perioperative services. Prior, Betty Jo held several leadership positions in the Mount Carmel Health System in Columbus, Ohio. These included chief nurse anesthetist, system director of surgical services, and vice president of nursing and chief nursing officer.



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Lee Smith is chief nursing officer at Syft, a GHX company, a leading provider of AI-enhanced inventory control and end-to-end hospital supply chain management software and services, where she is responsible for guiding customers through the implementation of the Synergy point-of-use and analytics solutions. Lee has more than 35 years of experience in healthcare, including 21 years in supply chain and information technology. In her career, she has served as director of surgical services and leadership positions at Cardinal Health, CareFusion, and BD.

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