

Streamlined, automated supply chain processes help healthcare providers optimize inventories by improving availability and eliminating waste while easing the administrative burden on medical practitioners.

Standardized, Streamlined, and Digitized Supply Chain Processes Improve Patient Outcomes

April 2025

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Introduction

In today's healthcare industry, disparate, disconnected systems strain resources and the medical providers that strive to consistently deliver optimal patient outcomes. A patchwork of legacy and homegrown systems and localized processes overburdens practitioners with manual, cumbersome tasks, challenging their ability to deliver world-class care in a more controlled and cost-effective setting.

Supply chains that must provide the right products at the right cost, in the right condition, and to the right location commonly fail to deliver consistently and accurately due to disconnected tools and processes. In this environment, comprehensive oversight and management of critical processes are often lacking (see Figure 1). This results in suboptimal outcomes and excessive waste that contributes to the rising costs of medical care that impact everyone. Channeling critical medicines, supplies, and equipment through procurement, storage, and consumption requires end-to-end inventory management and automated processes that remove the administrative burden from practitioners whose attention is better directed at their patients.

The state of supply chains across the medical industry calls for system modernizations that streamline storage and consumption processes through automated workflows. Driving accuracy across processes such as inventory management, consumption, and replenishment helps teams ensure that the required tools and resources for critical medical procedures are available when needed. Simultaneously, automated processes at the point of consumption drive accuracy and visibility across the supply chain while easing the burden on highly trained medical specialists, who are tasked with performing repetitive administrative tasks. To achieve the stated mission of hospitals, clinics, and pharmacies calls for digital tools that help synchronize processes and instill best-in-class supply chain practices to address current challenges across the medical industry.

AT A GLANCE

KEY STATS

- » 53.6% of healthcare organizations lack the supply chain visibility and agility to see necessary changes in time to react to them effectively.
- » Higher rates/costs and staffing experience are the top 2 warehousing challenges facing organizations.

FIGURE 1: **Technical Gaps Challenging Medical Supply Chain Orchestration**

Q When you think about the future of your supply chain, what current gaps are likely to be the most problematic if not addressed in the next three years?



n = 305

Base = life science respondents, which includes pharmaceutical/biotech, medical devices, and distribution

Notes:

Data is managed by IDC's Global Primary Research Group.

Data is weighted by IT spending by country.

Multiple responses were allowed.

Use caution when interpreting small sample sizes.

Source: IDC's Global Supply Chain Survey, April 2024

Challenges Facing Supply Chains

Several key challenges impede the supply chain, such as the need for:

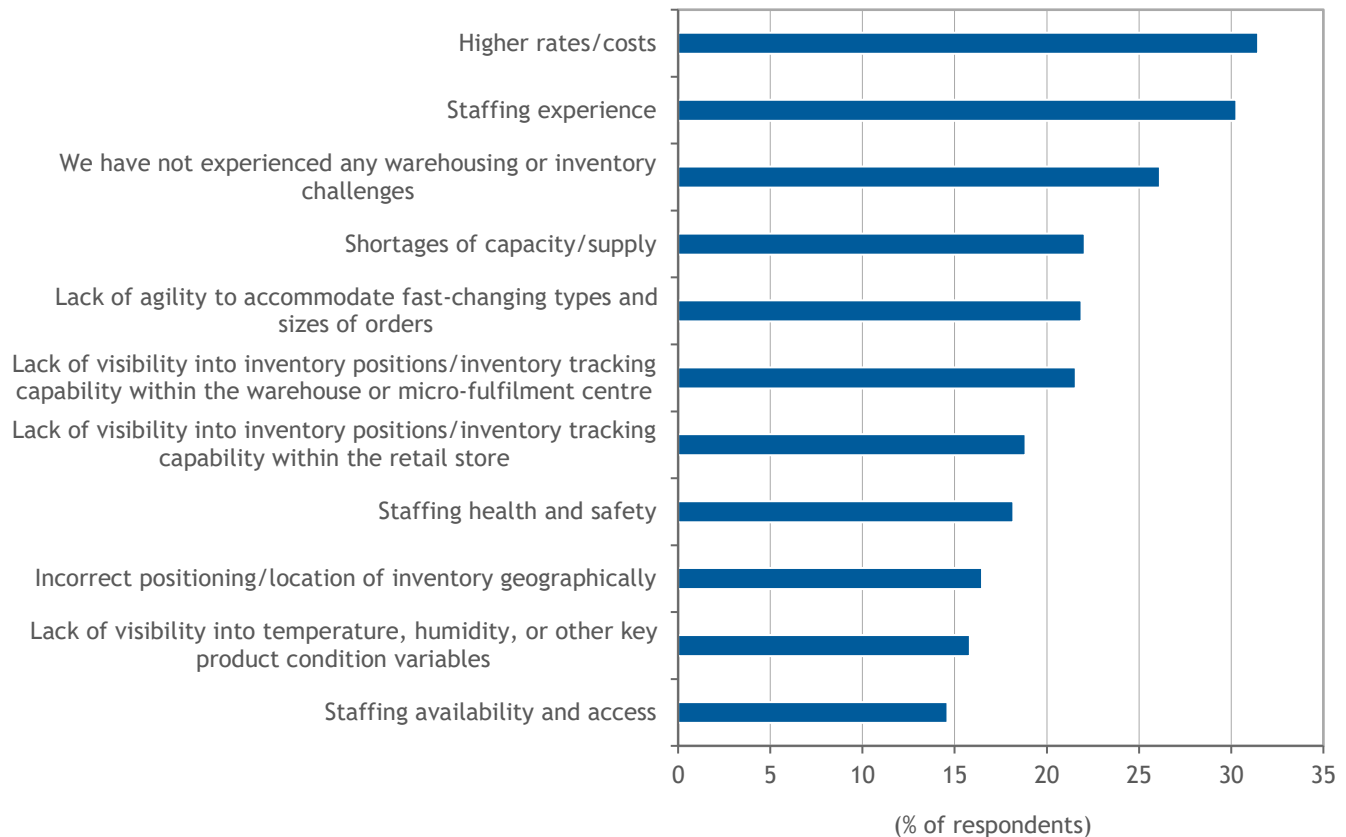
- » **End-to-end visibility and control:** When IDC asks leaders operating medical supply chains about their most pressing near-term gaps, the ability to see and react in a dynamic, fast-moving environment tops their list. Significant gaps across the end-to-end supply chain prevent teams from holistically managing the supply chain to mitigate risks and capture opportunities. The lack of real-time visibility across inventories hinders medical supply chain teams striving to support individual medical facilities' needs and optimize them collectively as part of a broader network.

- » **Predictive/prescriptive forecasting:** Visibility data, in combination with other data sources across the supply chain, helps feed analytics models that generate insights so teams can better manage inventories up and down their supply chain. The ability to proactively identify and mitigate risk remains aspirational for many supply chains that support medical facilities, with many stuck in a reactive stance where firefighting persists and missed opportunities become the norm. The inability to intelligently balance inventory levels with forecast consumption commonly results in overstocking, erring on the side of caution to avoid compromising the ability to deliver. While this supports practitioners' ability to deliver at the time of need, it also results in excessive waste when inventories exceed shelf life, expire, and are discarded. This consistent underperformance is a drain on profitability, contributing to rising costs and inhibiting the efforts of medical providers aiming to provide timely, effective, and affordable care.
- » **Streamlined processes:** Overly complex, disconnected processes unnecessarily absorb the time and energy of care providers. Forcing them to remain at the center of these processes distracts them from their core mission while introducing human error in urgent care settings, with many providers pulling from the same pool of supplies. These inefficiencies contribute to inflated costs and challenge the ability of supply chains to consistently provide the right products, tools, and medicines when and where they are needed to support planned and emergency services (see Figure 2).
- » **Improved safety, security, and compliance:** Disjointed systems and processes along the supply chain leave organizations vulnerable to security breaches that compromise safety and compliance. Ensuring the security of critical inventories demands modern technologies that help shore up gaps across healthcare supply chains. Handling and distributing critical medicines require structured, streamlined processes to prevent waste and abuse that compromise patient outcomes and are a drain on profitability.

As business leaders across the healthcare industry aim to enhance processes that support their teams' ability to improve patient outcomes, a streamlined supply chain helps relieve the constant drain that results from outdated and disconnected systems and processes. Modernizing digital capabilities that support supply chain processes across the healthcare space allows teams to implement best practices to help deliver value by improving transparency, coordination, and the ability to meet shifting demand patterns.

FIGURE 2: **Cost and Labor Concerns Facing Healthcare Supply Chains**

Q What have been the specific warehousing or inventory challenges your organization has faced in the past year?



n = 305

Base = life science respondents, which includes pharmaceutical/biotech, medical devices, and distribution

Notes:

Data is managed by IDC's Global Primary Research Group.

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Benefits

Digital tools that modernize supply chain processes can deliver the following benefits:

- » **Holistic visibility and control:** Holistically managing inventories allows teams to better respond to shifting and unpredictable demand but requires visibility that is real time or as close to it as possible. Comprehensive and timely visibility across inventories, whether in motion or storage, facilitates timely intervention to address unplanned demand and allows teams to effectively share inventories between facilities, easing the capital burden across

organizations. Through a data-driven approach, medical facilities can deliver consistent and predictable outcomes that do not compromise the ability to meet the unique needs of individual locations within their network.

Comprehensive oversight and management capabilities across the supply chain ensure that all processes are transparent and manageable. Real-time visibility is crucial for consistently making timely and informed decisions to mitigate potential stock-outs, fulfill customized clinician demands, and optimize operations to help eliminate unnecessary costs.

- » **Automated inventory tracking and workflows:** Cultivating continuous, dynamic supply chain intelligence allows teams to transition away from planning supply chain tasks through spreadsheets exchanged between teams, something 84% of supply chain organizations do today, according to IDC's 2024 *Global Supply Chain Survey* (n = 255). Integrated supply chain systems allow teams to proactively manage inventories and facilitate flow by better understanding trade-offs across the value chain. For example, this means reducing stock-outs by ensuring inventories are readily available when and where needed while reducing waste that results from expired/discarded medicines or misplaced/stolen supplies. Shoring up these capabilities improves the ability to consistently support medical providers and control costs through a supply chain that more capably meets the demands of those that rely on it while relieving them of the need to manually interact with systems to obtain the materials they require to accomplish their tasks.
- » **Product integrity and security:** Automated consumption and replenishment systems generate digital breadcrumbs that help organizations track critical medicines as they travel through medical facilities up to the point of consumption. Generating a transactional record of events improves compliance while providing objective data on where breaches occur so organizations can address them promptly and meaningfully. Alongside physical protection is the mandate to safeguard sensitive data. Modern technology allows organizations to control data utilization and access. Ensuring proprietary information safety and patient data security gives healthcare organizations the confidence to utilize information to generate insights that deliver value back into their operations without sacrificing security protocols to protect and maintain sensitive patient data.
- » **People-focused operations:** At the core of any business process is people, empowering and enabling them with technology to deepen their impact and expand their capabilities. Enlisting supply chain technologies to support and enhance healthcare providers increases satisfaction, productivity, and the ease by which business processes support their mission to provide the best patient care possible. Freeing practitioners from rote tasks outside their core competencies enables healthcare workers to redirect their focus toward patients and away from transactional interactions with systems that store, maintain, and replenish inventories. Streamlining processes removes repetitive, cumbersome tasks that are error prone and a drain on efficiency, facilitating profitability while allowing supply chain teams to deliver more effectively for hospitals, clinicians, pharmacists, and patients.
- » **Improved serviceability:** Harnessing visibility data enables healthcare teams to adapt to changes in very dynamic environments more effectively. Predictive and prescriptive analytics modeling allows teams to proactively manage inventories to avoid stock-outs that complicate emergencies and generate frustration by forcibly rescheduling procedures. Ensuring an efficient and accurate product supply enables healthcare providers to deliver promised outcomes without compromising the quality of care. Integrated inventory storage and management systems facilitate these efficiencies by aligning planning and execution in a live environment, thus improving outcomes and increasing patient satisfaction.

- » **Controlled costs:** Inefficient and ineffective processes erode margins and contribute to the rising costs of healthcare. An intelligent, streamlined supply chain helps address these challenges by generating and activating intelligence to support efficiencies across healthcare's most prominent resources. Streamlining interactions with systems frees providers to focus on their core competencies, which are the sources of revenue generation for healthcare organizations.

Trends

Supply chains are becoming increasingly complex across industries. Balancing the needs of various stakeholders requires teams to understand the nuances that enable success while remaining focused on simplified solutions that help deliver value by addressing distinct business problems. IDC sees a few key trends that can help medical organizations balance the push for greater control with the need to reduce costs, improve resilience, and drive sustainable operational practices.

Digital Transformation

Across the healthcare industry, organizations have assembled a patchwork of legacy and homegrown systems to serve their needs over time. In this environment, localized, disconnected processes strain resources, most prominently medical providers persistently dealing with manual tasks that detract their attention from the patients they care for. Adopting digital tools and technologies to modernize operations, improve efficiency, and enhance overall performance starts with comprehensive visibility, which improves inventory control and distribution across the supply chain.

Organizations are demanding the holistic, end-to-end visibility and control that digital transformation across the supply chain can provide to remain competitive or to craft an edge that sets their business apart from competitors. Technology is readily available to help relieve this strain by aligning the underlying processes that can deliver true end-to-end inventory control throughout medical supply chains.

Analytics and AI/ML

For years, organizations have generated troves of data but continue to struggle with understanding how to activate it to deliver value back into the business. AI allows organizations to understand trade-offs across operations, enabling real-time decision-making through systems that allow teams to dynamically balance the needs to drive efficiencies to reduce costs, improve serviceability by increasing resilience, and understand where they can achieve sustainability gains. As resource scarcity is a growing concern across the healthcare industry, integrating analytics and AI/ML is becoming increasingly important to optimize resources in real time by delivering meaningful insights and streamlined, automated processes.

Focus on Patient Care

New systems, tools, and processes must allow healthcare professionals to do their jobs better. Relieving healthcare workers of manual, repetitive tasks by automating administrative jobs enables them to focus on patient care. This can contribute to increased job satisfaction and help reduce attrition, ultimately helping medical practices deliver more consistent and impactful outcomes. Digitalized processes facilitate this transformation by enlisting technology to do what technology is good at while allowing humans to do what they are best at.

Adopting technologies to align inventory levels, movement, consumption, and replenishment supports teams in delivering best-in-class medical care through an intelligent supply chain that dynamically supports changing needs without compromising the timeliness and quality of the overall healthcare experience. Driving consistency across the

value chain contributes to underlying business goals by ensuring the right goods are available as needed without the excessive waste that drains medical care affordability.

About Tecsys and Terso

Tecsys is a global leader in supply chain solutions, empowering businesses to achieve agile growth. The company's solutions and services help healthcare providers improve patient care and operational efficiency by optimizing inventory management, offering advanced tools for cost control, standardization, product tracking, and end-to-end supply chain visibility.

Terso Solutions is a leading provider of automated inventory management solutions for tracking high-value medical and scientific products in healthcare and life sciences. The implementation of RFID-enabled enclosures from Terso Solutions, integrated with Tecsys software, aims to help hospitals achieve annual savings while meeting strict compliance regulations and improving patient outcomes.

Challenges

Organizations digitally transforming their operations must ensure that data integrity remains a top priority. Governance and mapping protocols are critical to ensure that high-quality, low-latency data underpins efforts to generate meaningful insights that could impact their businesses if they act on them. Overlooking data quality in the rush to automate processes will only lead to inaccurate, highly scrutinized decisions that will undermine patient care and potentially expose healthcare practices to liabilities.

Tecsys and Terso must ensure their interfaces are seamlessly integrated and easy to use. Simplified solutions must provide relief from, rather than a shift to, different tasks to allow clinicians to move seamlessly through their work. Delivering simplicity out of complexity creates end users that will champion solutions across organizations, helping secure further engagement by practitioners in promoting them across organizational end users while delivering sustainable efficiencies.

Last, digital tools must be capable of quickly and seamlessly integrating with and across the broad range of disparate solutions that exist in healthcare. In an environment lacking standardized processes and tools, providers must deliver swift and effective integrations, regardless of the digital maturity of the organization aiming to streamline its inventory management processes. Supporting ongoing ROI analysis helps teams express the delivered value within the organization and can lead the way for future investments to transform the supply chain into a competitive advantage that supports healthcare providers, aiding in consistently delivering better patient outcomes.

Handling and distributing critical medicines require structured, streamlined processes to prevent waste and abuse that compromise patient outcomes and are a drain on profitability.

Conclusion

Healthcare organizations benefit from more agile, responsive, and intelligent supply chains to support their operations, employees, and patients. Automated tools and processes are available to improve end-to-end visibility of inventories as they flow from suppliers, through facilities, and to the point of consumption. Aligning the physical flow of medicines/supplies and the accompanying data provides an opportunity for healthcare providers to make more precise

and comprehensive decisions that drive value back into their operations while helping improve safety, security, and compliance across operations.

Automated procurement, consumption, and replenishment systems free the strain on high-value medical practitioners whose time is better spent focused on patient outcomes, not the administrative tasks associated with managing and controlling inventories. Preserving these high-cost labor resources is a primary consideration for healthcare organizations aiming to deploy resources where they are best positioned to provide better patient care.

Ultimately, enlisting technologies that allow teams to more capably see, understand, and act helps healthcare organizations to better manage their supply chain and how it serves their business. Analytic insights uncover opportunities to drive standardized processes where needed to deliver efficiencies and eliminate waste without sacrificing the customization that is required to fully support medical providers in their task to deliver the best care possible. Transforming inventory management and control processes allows organizations to leverage data into impactful insights, holistically integrating supply chain processes into the business in a way that can create more engaged, productive clinicians and ultimately deliver better patient outcomes.

About the Analyst



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Travis Eide is the research director of the IDC Worldwide Supply Chain Strategies Program, responsible for providing research, analysis, and guidance on key business and IT issues pertaining to manufacturing, retail, and healthcare supply chains. He currently leads the Worldwide Supply Chain Strategies: Transportation, Warehousing, Logistics, and Global Trade Management practice, providing fact-based research, analysis and insight on best practices and the use of information technology to assist clients in improving their capabilities in these critical supply chain fulfillment areas.

MESSAGE FROM THE SPONSOR

From the warehouse to clinical and pharmacy environments, healthcare organizations can optimize supply chain processes, ensure timely delivery of critical supplies and achieve operational excellence all while prioritizing patient care. For more information about Tecsys' healthcare and pharmacy solutions, please visit: [Tecsys healthcare provider solutions](#).

Terso Solution's automated inventory solutions — such as smart cabinets, refrigerators, freezers and mobile devices — integrate with cloud-based software to streamline operations, improve patient care, and reduce manual effort. Learn more about Terso's technology [offerings](#).



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