A circular inset image showing a close-up of a pharmacy bin. A hand is reaching into the bin, which is filled with various medical supplies, including boxes of BD Safetyject needles and other medical equipment. The bin is part of a larger shelving unit in a pharmacy setting.

The **Visibility Crisis** in Health System Pharmacies

A national survey of US healthcare executives and pharmacy leaders reveals that only 20% have real-time visibility across care settings, leaving most organizations unprepared for looming supply chain disruptions and shortages.




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Executive summary

Health system pharmacies are facing a visibility crisis in their supply chains.

The issue goes beyond any single drug shortage, cost spike or technology failure. Findings from the Tecsyst Health System Pharmacy Supply Chain Survey show that many organizations are effectively operating without a clear, real-time view of medication demand, inventory position and emerging risk — forcing leaders to react to disruption rather than prevent it.

Our national survey of healthcare executives and pharmacy leaders reveals a widening gap between perceived preparedness and operational reality. Although most respondents say their organization is prepared to manage a major disruption, just 20% report full, real-time visibility across care settings. Most health systems and their pharmacies are still making mission-critical decisions using manual processes or siloed systems that do not connect with each other and provide conflicting data that hides risk until it's already too late.

As a result, leaders are often making high-stakes decisions with delayed, partial or manually reconciled information, even as disruptions occur with increasing frequency. Pharmacy teams are left to manage shortages tactically while the broader financial and clinical consequences remain obscured.

The operational impact is readily apparent. Inventory expires in one location while another issues urgent requests for the same medication. Rush orders replace planned purchasing. Substitutions and delays disrupt clinical workflows. Drug shortages remain the most disruptive force, while pricing volatility continues to strain financial performance.

Many organizations are looking to AI and advanced analytics for relief, but ambition is outpacing readiness. Only 15% report fully deployed AI or ML use cases in areas such as demand forecasting and inventory optimization. The constraint is foundational: Most organizations still lack full integration between clinical systems, ERP and pharmacy supply chain platforms, leaving data too fragmented to support reliable prediction. The challenge is less about access to new tools than the ability to align data, workflows and accountability across pharmacy, supply chain and finance.

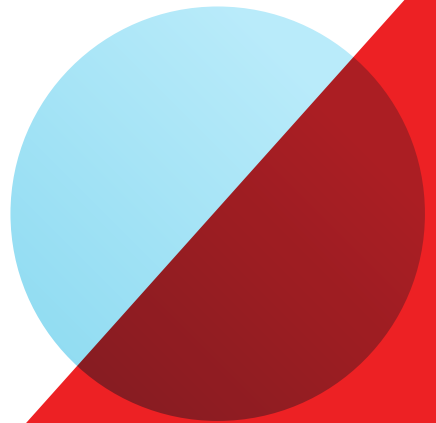
These findings reinforce that visibility is the dividing line between organizations that can anticipate disruption and those forced to manage it after the fact.



The survey findings reflect what we see every day in hospital network pharmacies: Without real-time supply chain visibility, teams are forced to make critical decisions with incomplete information."

Jeff Wagner

**Vice President of Pharmacy,
Respiratory Care and ECMO Services**
Texas Children's Hospital



This report examines where the visibility gap is largest, what it is costing health systems and how pharmacy leaders are shifting from reactive shortage management toward more resilient operations.

Key findings

Visibility is the most critical and persistent constraint

Only 20% of leaders report full, real-time visibility across care settings. The remaining 80% rely on delayed, partial or manual tracking.

Preparedness collapses under pressure

77% are not, or are only somewhat prepared for managing major disruptions, with only 23% feeling very prepared.

Drug shortages remain rampant and consistently escape line of sight

Four in five (79%) say shortages caused the most disruption to their pharmacy operations in the last 12-24 months.

Tariff and pricing pressures are building

Two-thirds (65%) are preparing for pharmaceutical tariffs by diversifying suppliers or nearshoring, and more than 80% say rising drug costs are having an impact on their organization's financial performance.

Data readiness – not a lack of ambition – is slowing AI adoption

Only 15% report fully deployed AI or ML use cases for demand forecasting, inventory optimization, drug shortage prediction or risk modeling. 35% are still in pilot phases while 17% currently have no plans at all.

Pharmacy sees itself as strategic, but the C-suite doesn't

Nearly half (48%) of pharmacy leaders say their function is strategic, but only 15% of other senior leaders agree.

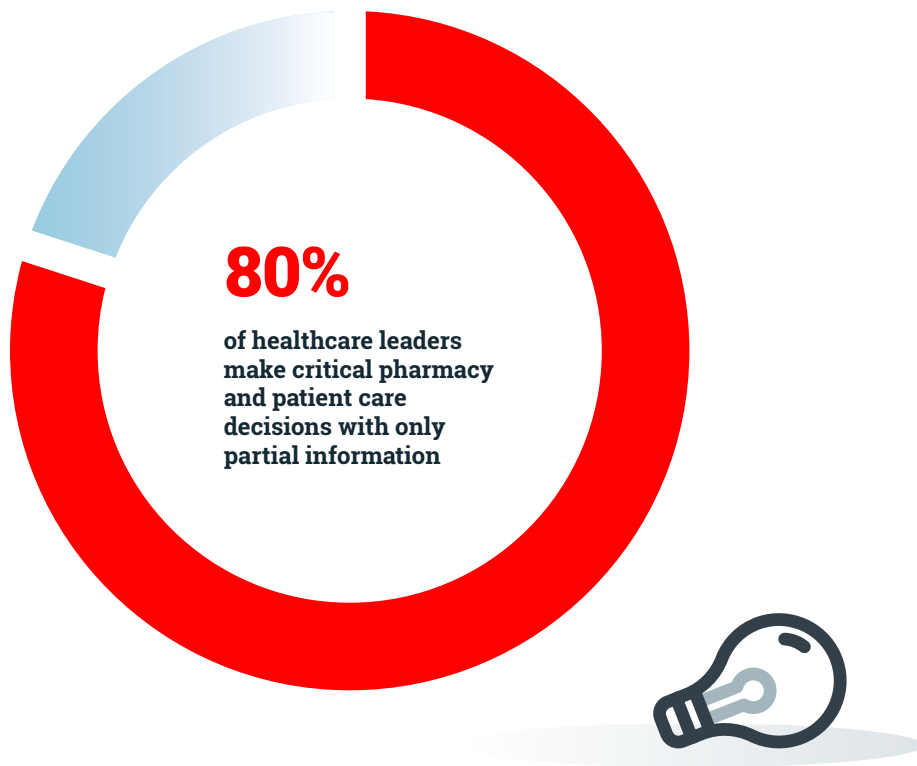
Why visibility is the defining challenge

Health system pharmacies are not struggling because they lack solutions. They're struggling because their solutions don't work together.

Over the past decade, pharmacies have added automation systems, analytics platforms, controlled substance cabinets, carousel technologies, drug-diversion tools, sterile-compounding software, and more. Yet despite these tools, our survey found that 75% of systems still lack full integration between their clinical systems, ERP and pharmacy supply chain platforms. Even fewer, just 13%, have full integration between automation, software, robotics and pharmacy supply chain platforms.

75%

of systems still lack full integration between their clinical systems



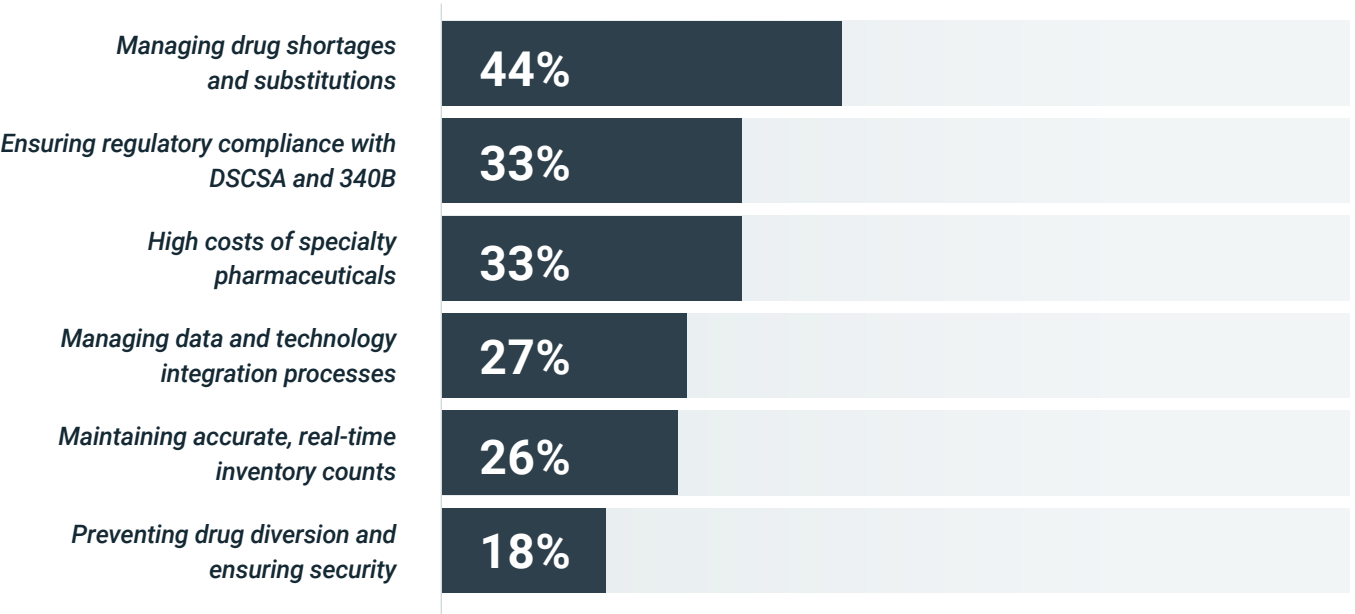
As a result, **pharmacy leaders and technicians are left piecing together a fragmented picture with minimal visibility** into how medications are moving across their organization. These gaps show up in small, routine moments that quickly escalate into operational and patient care breakdowns, including:

Inventory data that is incomplete or inaccurate	An infusion may be postponed because pharmacy discovers too late that overnight usage depleted stock.
Point-of-use data that is disconnected from purchasing	OR cabinets may run short on essential anesthetics because a real-time surge went undetected.
Manual reconciliation across spreadsheets, automated dispensing machines and EMR systems	Technicians and analysts spend hours comparing mismatched data sources that slow dispensing and verification workflows.
Disconnected workflows between central pharmacy, satellite pharmacies and care units	Unused medications sit in one unit while another has an urgent need for the same drug.
Limited visibility into supplier disruptions, raw material shortages and backorders	Clinicians discover a drug is unavailable only when attempting to administer it and must substitute or delay care at the last minute.

These examples illustrate the reality and downstream consequences of fragmented systems across pharmacy today. Hospital executives and pharmacy leaders are forced to make strategic operational and patient care decisions based on partial information instead of a full, real-time view.

What leaders say their biggest operational challenges are

According to the survey, leaders cite the following as their most significant operational challenges, and each is amplified daily when visibility is missing:



The visibility gap is undermining preparedness and resilience

Nearly three-quarters (74%) of hospital executives and pharmacy leaders said they are prepared to manage a major disruption from natural disasters to drug shortages, but fewer than one in four (23%) feel they are very prepared. And with 80% lacking full, real-time visibility, that confidence is shaky at best.

If most U.S. pharmacies are relying on delayed, partial or manual tracking of supplies and inventory, care delivery becomes nearly impossible to predict or confirm.

80%

of hospital executives and pharmacy leaders are lacking full, real-time visibility

Here's what leaders are concerned about

85% are worried about workforce productivity and labor shortages

85%

82% are worried about financial performance and margin pressure

82%

66% are worried about disaster planning and resilience

66%

62% are worried about regulatory compliance

62%

The leadership gap is also significant. Executives and pharmacy leaders feel pressure across the organization. C-suite leaders are more likely to cite regulatory disruption (60% vs. 49% of pharmacy VPs/SVPs), while frontline and supply chain teams are more likely to feel acute pressure from production delays or product shortages (59% vs. 48% of executives).



Drug shortages and costs escalate faster than organizations can respond

According to the [American Society of Health-System Pharmacists](#), U.S. hospitals and health systems have faced more than 200 active drug shortages every quarter since 2018. Our survey underscored just how persistent and widespread drug shortages have become. Seventy-nine percent say drug shortages caused the most disruption over the last 12-24 months at their organizations.

Top factors driving drug shortages

High demand spikes

Raw material shortages

Pricing and reimbursement challenges

Regulatory changes

63%

63%

49%

46%

Only 24% of systems feel very prepared for drug shortages, with 76% feeling only somewhat or not prepared at all for inevitable shortages. Executives feel even less prepared than pharmacy leaders (19% vs. 30%).

Financial and operational impacts of drug shortages

Drug shortages are having a significant impact on health systems' financial and operational performance.

For many health systems, a single shortage can trigger tens of thousands of dollars in unplanned spend as teams turn to higher-priced alternatives, rush orders or even delay or cancel procedures, eroding revenue and straining already thin margins.

During the IV fluid shortages after Hurricane Helene in 2024, hospitals were forced to ration supplies and even delay elective surgeries. Many had no alternate plan in place because they lacked early insight into supplier constraints and vulnerabilities and had to resort to replacing IV with Gatorade in some cases.

The financial consequences of drug shortages and pricing pressures are just as significant as the operational ones and leaders are feeling it across their organizations:

- **46% said drugs and pricing have a severe impact on their organization's financial performance**
- **36% said it has a moderate impact on their organization's performance**
- **Only 16% said it had minimal or no impact**

Tariffs add a new layer of volatility

Tariffs have complicated an already fragile pharmacy supply chain, amplifying uncertainty around future product availability, lead times and total acquisition costs for critical medications and supplies. As tariff policy and supplier responses shift daily, pharmacy leaders and hospital executives are constantly reassessing sourcing options and pricing.

In anticipation of future impacts from tariffs, our survey respondents reported they are taking the following steps:

- **65% are diversifying suppliers or nearshoring**
- **46% are accelerating automation and digital transformation**
- **36% are building larger inventory reserves**
- **16% are planning to raise prices**
- **10% currently have no strategy**

These findings reveal an environment where disruptions and challenges are arriving faster than health systems can detect them. The impact of shortages, pricing shocks and tariff pressures isn't felt in isolation. Each challenge compounds the others and forces pharmacy teams to navigate unpredictable conditions with delayed or incomplete information. When early signals are missed, hospitals are pushed into reactive decisions, emergency purchasing and last-minute workarounds that jeopardize care and inflate costs.



While 44% said managing shortages and substitutions were their organization's greatest pharmacy supply chain challenge, a third of leaders (33%) said that both ensuring regulatory compliance (e.g., DSCSA, 340B) and the high costs of specialty pharmaceuticals were the other top challenges in managing their pharmacy supply chain.



AI ambition outpaces readiness

AI is among the top priorities for pharmacy supply chain leaders, yet most organizations are early in their journey. Many teams see AI as critical to addressing persistent challenges such as drug shortages, inventory waste, labor constraints and rising costs, and they are actively exploring where advanced analytics, automation and predictive modeling can deliver the greatest impact.

Where AI adoption stands today

More than one-third of leaders (35%) say their pharmacy supply chain department is currently in a pilot or limited rollout phase of using AI or ML for demand forecasting, inventory optimization, drug shortage prediction or risk modeling.

- **15% have fully deployed AI or ML for demand forecasting, inventory optimization and drug shortage prediction**
- **35% are in a pilot or limited AI or ML rollout phase**
- **33% are planning to implement AI or ML within the next 24 months**
- **17% currently have no plans to implement AI or ML**

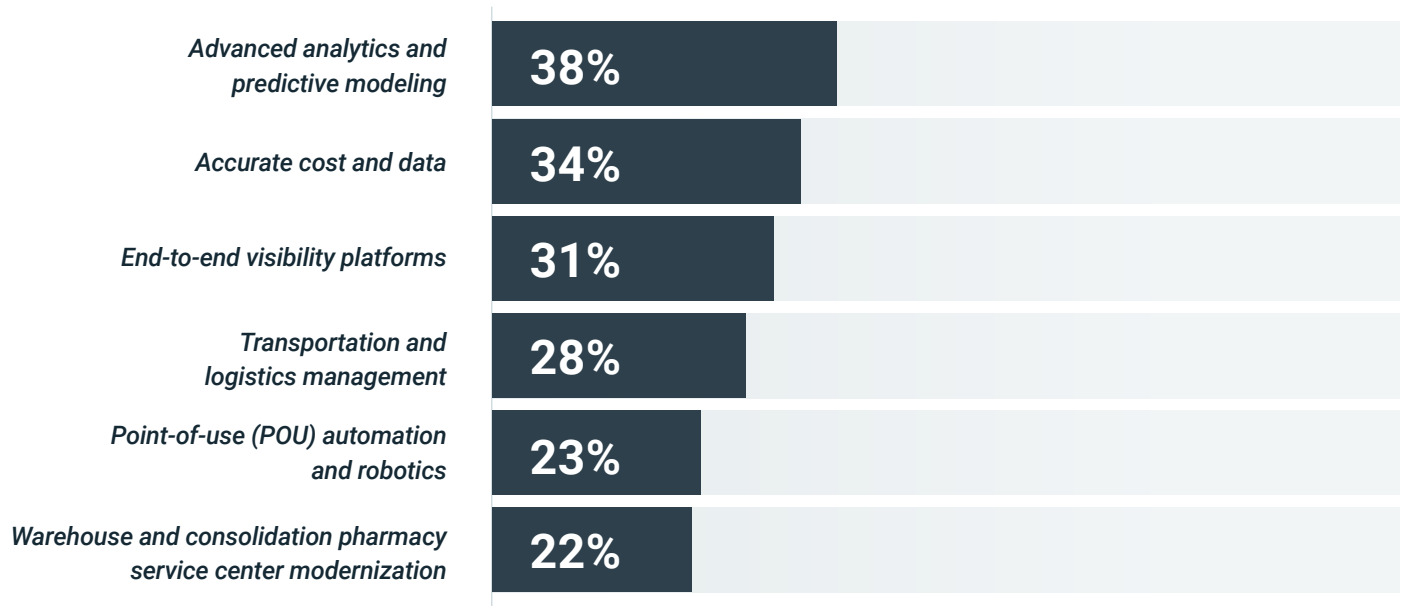
Hospital executives are more bullish – C-suite executives are more likely than SVP- and VP-level hospital leaders to say their pharmacy supply chain department is planning to implement AI or ML within the next 24 months for demand forecasting, inventory optimization, drug shortage prediction or risk modeling (38% vs. 27%) – highlighting a growing ambition-to-readiness gap among executives and frontline leaders.

What's holding AI back

- Only 13% of leaders report full integration between automation, software, robotics and supply chain systems
- 75% lack full integration between clinical systems (EMRs), ERPs and pharmacy supply chain systems
- 80% don't have real-time visibility across care settings

AI cannot perform effectively without unified, accurate and complete data. Without the right foundation, even well-designed models will produce unreliable forecasts or risk signals. AI is only as good as the data it's trained on, and today's pharmacy data is scattered across siloed systems.

Advanced analytics and predictive modeling are the highest priorities when it comes to technology investment

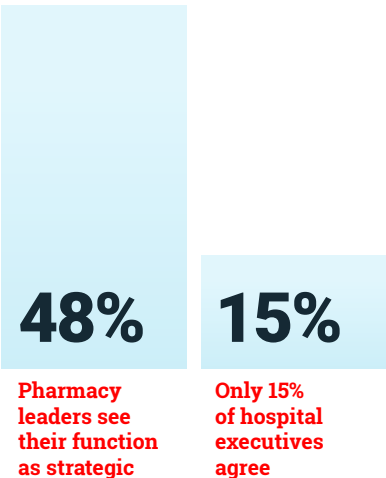


Even with rising enthusiasm for AI, most health systems remain stuck at the starting line and aren't held back by a vision, but by systems that can't support the level of accuracy, consistency and reliability that AI in healthcare requires. AI will struggle to advance beyond pilots or isolated use cases as long as data remains siloed. Pharmacies that are seeing real progress are those treating AI as the outcome of a stronger foundation where integrated systems, unified visibility and reliable data make it possible for AI to support pharmacy and supply chain decision-making.

Pharmacy cannot be strategic if its impact is invisible

Pharmacy and supply chain leaders overwhelmingly see their function as strategic – 48% consider it to be integral to enterprise performance and strategic initiatives – but only 15% of hospital executives agree.

This misalignment is not a perception issue. It is a visibility issue. Executives cannot see the financial, operational and safety impact of pharmacy decisions because the data is dispersed across disconnected platforms, spreadsheets and departmental workflows.



Pharmacy’s influence must grow because it:

- Drives a significant portion of hospital operating expenses
- Touches nearly every patient who enters the hospital
- Is central to safety, compliance, risk management and financial performance
- Plays a critical role in shortages, waste reduction, contracting and care delivery

Even with its broad and daily reach, pharmacy’s impact remains largely hidden inside systems that don’t communicate and metrics that never surface beyond the department level. As a result, executives experience pharmacy primarily through budget lines and supply challenges, not through the strategic value it provides in stabilizing margins, preventing disruptions and supporting clinical care.

As health systems navigate tightening finances, rising specialty drug costs and increasing pressure to strengthen resilience, the visibility gap is becoming a limiting factor – not just for pharmacy, but for the entire system.

When organizations integrate pharmacy data, illuminate its operational and financial contribution, and connect it to enterprise decision-making, pharmacy naturally shifts from a support function to a strategic partner. The path to elevating pharmacy begins with making its impact impossible to ignore and earning its seat at the executive table.

Without visibility

Shortages discovered only when a clinician reports a missing medication

Emergency purchasing drives up costs and disrupts budgets

Inventory sits idle in one unit while another faces shortages

Pharmacy seen primarily as a cost center managing transactions

With visibility

Shortages flagged a day earlier through real-time usage trends and supplier signals

Predictive insights support proactive contracting and cost-avoidance strategies

Inventory is reallocated system-wide before stockouts occur

Pharmacy recognized as a strategic function influencing margin protection and resilience



Consequences of the visibility crisis for key stakeholders

For pharmacy leaders

Unable to forecast shortages early

Too much time spent reconciling spreadsheets and manually tracking inventory

Hard to quantify performance improvements

For supply chain leaders

Fragmented data limits enterprise planning

Tariff and shortage strategies remain reactive

No shared view across departments

For C-suite executives

Margin pressures worsen without visibility

AI investments remain limited by data quality

Pharmacy remains under-leveraged strategically

The path forward: From visibility gaps to proactive pharmacy leadership

by Dr. Valerie Bandy, *VP Pharmacy Solutions at Tecsys*

The findings in this report reflect a reality hospital pharmacy leaders know well: Persistent disruption has become normalized. Drug shortages, cost volatility, regulatory pressure and manual workarounds are often treated as unavoidable features of modern healthcare rather than indicators of a deeper structural problem.

This lack of visibility has pushed pharmacy teams into a largely reactive posture. For years, organizations have built processes to manage shortages after the fact rather than prevent them before they affect care. This approach consumes staff time, operational capacity and financial resources while still exposing patients and clinicians to last-minute substitutions and delays. As shortages persist and supply chains grow more complex, that model no longer holds. The path forward requires moving from disruption response to disruption anticipation.

Making that shift depends on the ability to see what is happening across the pharmacy supply chain in real time: how medications are being used, where inventory resides, how demand is changing and where risk is emerging upstream. When demand planning, forecasting and inventory data are integrated across care settings, pharmacy leaders can act earlier and with greater confidence. Early signals make it possible to adjust purchasing strategies, reallocate stock, coordinate with suppliers and clinicians, and reduce emergency spending before a shortage escalates into a clinical or financial event.

Achieving this level of foresight is not about adding another system to an already crowded technology environment. Many hospital pharmacies have invested heavily in automation and software yet still struggle with blind spots because those systems do not work together. Progress depends on reducing fragmentation, eliminating manual reconciliation and establishing data that is consistent, timely and usable across the enterprise. Without that foundation, advanced analytics and AI initiatives remain limited in scope and effect.

As pharmacy operations grow more complex each year — shaped by specialty drugs, evolving regulatory requirements and ongoing supply volatility — the cost of standing still will continue to rise. Processes that feel barely manageable today will be increasingly strained tomorrow.

“

What this research makes clear is that the current state of pharmacy operations is not unchangeable. It is driven by limited visibility, something that health systems can correct.”

Valerie Bandy
VP Pharmacy Solutions
Tecsys



In that context, maintaining the status quo becomes a strategic risk. Organizations that rely on delayed or partial information will find it harder to control costs, support clinicians and maintain continuity of care as conditions change.

Responding to that risk also requires a broader view of how solutions are evaluated. No single system or vendor can address pharmacy's challenges alone. Effective pharmacy supply chains are built on connected ecosystems, where partners integrate, share data and evolve together. Health systems should seek partners that understand the regulatory and operational realities of hospital pharmacy, support ongoing improvement, and are willing to work across technologies rather than operate in isolation. The objective is not perfection on day one but an approach that can adapt as pressures and expectations continue to shift.


Visibility is key to making sure pharmacy's contributions are understood at the enterprise level. When pharmacy data is integrated and transparent, leaders can clearly show how pharmacy decisions affect financial performance, compliance, risk and patient care. That clarity changes how pharmacy is viewed. It moves the function from a department reacting to shortages to a strategic partner helping the organization navigate ongoing disruption.

The escalating visibility crisis marks an inflection point. Health systems can continue to accept disruption as inevitable or invest in the insight required to anticipate and manage it. As pressures on healthcare delivery intensify, pharmacy's role will only expand. Whether that role is defined by constant crisis response or by strategic leadership will depend on how clearly pharmacy, and the systems it relies on, can see what lies ahead.



Survey methodology

Tecsys conducted a survey of senior hospital executives and health system pharmacy and supply chain professionals in the United States to understand how they are navigating supply chain issues, investing in technology, and the level of enterprise-wide integration. The survey received 201 responses, with 100 who work in pharmacy, supply chain or operations that directly oversee pharmacy operations and 101 hospital C-suite executives. All respondents worked in a health system with at least \$1 billion in annual revenue. The survey was conducted in October 2025.



About Tecsys

Tecsys is trusted by mission-critical organizations in healthcare and distribution to build resilient, efficient and secure supply chains. A global provider of cloud-based, AI-driven software with deep domain expertise, Tecsys delivers real-time operational visibility and execution across critical workflows when performance and reliability matter most. Tecsys is publicly traded on the Toronto Stock Exchange (TCS). For more information, visit www.tecsys.com.

www.tecsys.com

info@tecsys.com

Phone: 514-866-0001

Toll Free: 1-800-922-8649

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