



EXECUTIVE BRIEFING

Unlock Enterprise Performance

Turning Medication Management into a More Connected Driver of Clinical and Operational Performance

Executive Summary

For health systems under pressure to expand access, improve clinical performance, manage workforce constraints and maintain financial discipline, enterprise performance may increasingly depend on what happens inside everyday workflows. Medication management is part of that equation.

Across pharmacy, nursing and other clinical functions, medications move through a complex network of procurement, inventory, dispensing, distribution, administration, documentation and monitoring. Each activity represents one part of care delivery. Repeated across facilities, departments, clinicians and patients, how those activities are designed and connected shapes workforce productivity, operational consistency and clinical performance.

The external environment adds pressure: U.S. hospitals continue to manage rising patient complexity and significant workforce and operating costs, while medication costs and supply pressures compound the challenge.

Against this backdrop, we believe automating more medication-management activities matters less than whether technology, workflow design, medication availability, information and governance work together to make the medication-use environment more effective.

The next phase of medication-management modernization is about turning technology into better enterprise performance.

Enterprise Performance Begins with Everyday Work

Large-scale performance is built from thousands of routine activities: medication retrieval, dispensing, replenishment, inventory management, discrepancy resolution, documentation, communication and administration. Individually, these tasks look operational but collectively, they shape the working environment.

A medication stored somewhere other than where it's needed means extra retrieval or communication; an inventory process that doesn't reflect real utilization means extra replenishment or stockouts; different configurations across facilities add training and administrative complexity; and information that exists but can't be acted on does little to improve decision-making.

THESE EXAMPLES ILLUSTRATE A BROADER PRINCIPLE:

Workforce productivity can be about removing unnecessary work, as opposed to asking people to do more.

For medication management, this creates a different set of performance questions:

- How easily can clinicians obtain the medications they need?
- How efficiently are medications replenished and distributed?
- How consistently are common processes performed?
- How readily can operational information be used to identify variation or improvement opportunities?
- How much unnecessary movement, searching or consumed clinical time could technology, workflow redesign or better information help eliminate?

These questions move medication management beyond the performance of individual technologies and toward the performance of the operating environment itself.

Design the System Around the Work

Medication use takes place within a complex clinical system. WHO's *Medication Without Harm* initiative treats unsafe medication practices and medication errors as a systems challenge, with errors occurring across prescribing, transcribing, dispensing, administration and monitoring; and weak medication systems, alongside human factors like fatigue, environmental conditions and staff shortages, among the contributors.

This has an important implication for technology strategy: automation can't be evaluated solely by asking whether it performs its intended function. It is crucial to account for how the technology fits into the work around it:

- Where is it located?
- How is it configured?
- What inventory does it contain?
- How does information move between systems?
- What happens when the expected process cannot be followed?
- How much additional work is required to resolve an exception?

The objective should not be automation for its own sake. It should be automation that works within a deliberately designed medication-management environment.

That principle matters most for frequently performed activities, where small amounts of friction may compound at scale. Automated dispensing cabinet research illustrates the point.

A 2024 time-and-motion study examined nursing medication rounds before and after ADC implementation across four clinical specialties. The average number of locations nurses visited to obtain required medications fell significantly, from 1.73 to 1.04.

In one surgical ward, average medication retrieval time fell from 98.1 seconds to 47.2 seconds. Across all four specialties, retrieval time also declined, from 83.3 to 62.6 seconds. While the overall reduction was not statistically significant, the value of these findings isn't the seconds saved in one environment, it's the principle that when frequently performed work is completed with fewer unnecessary movements, locations or steps, the workflow itself has changed. At scale, small improvements repeated often may become operationally meaningful, but clearly their value should be measured, not assumed.

Putting the principle into practice

At Billings Clinic, integration between Omnicell automated dispensing cabinets and the Cerner EHR was designed to remove a redundant nursing workflow. Previously, nurses moved between the EHR and dispensing system to review clinical information and retrieve medications. With interoperability, medications can be queued remotely from within the EHR for subsequent retrieval from the cabinet, reducing the need to work across two separate systems.



Treat Medication Availability as a Performance Issue

Medication availability sits at the intersection of inventory management and clinical workflow. When medications aren't available where expected, resolving takes additional searching, communication, replenishment or pharmacy intervention, which means the real question isn't how much inventory an organization holds, but whether that inventory is positioned and managed to support the work.

A pharmacist-led ADC stewardship study suggests active optimization of automated dispensing environments can improve both medication availability and inventory performance, reporting a 12% reduction in medications dispensed from central pharmacy, a decline in stockouts per cabinet per day from 0.75 to 0.61, and a 15% reduction in inventory-at-par cost.

Deployment and optimization aren't the same thing: **technology can create the capability** to manage medication inventory differently, **but we believe its value depends on how that capability is configured, governed and continuously improved.**

A similar relationship between inventory optimization and medication availability can be seen in Omnicell customer experience. At North Kansas City Hospital, the use of inventory analytics and optimization alongside its existing medication-management automation was associated over four months with approximately 1,200 fewer medication requests, a roughly 10% reduction in stockouts and a 7% increase in nursing satisfaction. The hospital also reported approximately 21,000 additional doses administered within 60 minutes.

Omnicell's 2024 systematic review of ADCs and omitted or delayed medication doses reinforces the need for caution: most of the nine included studies suggested a positive effect on omitted or missed doses, but only two directly correlated missed doses with medication unavailability.

While the authors concluded that stronger evidence is needed to establish the relationship, a more defensible proposition may be that while automation doesn't guarantee availability, availability can be treated as an operational measure connecting inventory strategy with the clinical workflow.

Use Technology to Create Visibility, Then Use Visibility to Improve

Connected medication management can generate significant amounts of operational information, but data availability and operational improvement aren't the same thing. We find that the value of enterprise visibility lies in what an organization does with it:

Visibility matters when it leads to action.

- Can leaders identify meaningful differences between facilities?
- Can pharmacy teams recognize patterns in inventory and utilization?
- Can operational teams identify recurring exceptions or workflow bottlenecks?
- Can performance be evaluated using consistent measures?
- Can successful practices in one part of the organization be identified and considered elsewhere?

ASHP's PAI 2030 recommendations provide useful professional context: they call for pharmacy leaders to apply advanced analytics to performance monitoring, medication-use optimization and business management, and to build analytics capability spanning financial and clinical performance data.

Visibility matters when it leads to action. It can help an organization identify where performance differs, investigate why and determine whether change is warranted.

Omniceil customer experience also illustrates how visibility can be applied across a multi-site health system. Saint Luke's Health System implemented intelligence capabilities to address siloed inventory practices and limited visibility across its hospitals and campuses. Omniceil reports that Saint Luke's subsequently reduced drug inventory by 12% systemwide and reduced drug waste by approximately \$20,000 per month.

Standardize Where Consistency Creates Value

Scale can create both opportunity and complexity. Different hospitals, clinical environments and patient populations may legitimately require different practices, so enterprise performance shouldn't be confused with uniformity. The useful question to consider is where variation reflects a genuine requirement and where it just makes the organization harder to operate.

Potential areas for consideration include technology configuration, inventory practices, reporting conventions, training, governance and selected routine workflows.

ASHP's PAI 2030 recommendations similarly support an enterprise view of medication management, including integrated pharmacy services, enterprise leadership, financial stewardship, analytics and risk management.

Common enterprise principles can make the medication-management environment easier to operate, measure, support and improve, without removing local judgment.

Standardize where consistency makes the system easier to operate. Preserve flexibility where it is most important.

Flexibility remains appropriate where patient, clinical or operational needs genuinely differ.

Measure What Changes

Technology programs are frequently measured through implementation milestones:

- Was the system deployed?
- Was the facility converted?
- Was the integration completed?
- Were users trained?

Those measures are necessary, but they don't tell leadership whether the work actually improved.

An enterprise-performance approach adds a second layer of measurement, which, depending on the organization's priorities and available data, might include:

- Medication availability and stockout patterns;
- Inventory levels and utilization;
- Workflow and replenishment activity;
- Operational variation between facilities;
- Administrative effort and user experience; and
- The ability to identify and extend successful operating practices.

Individual measures should be selected by the organization according to its objectives, baseline, clinical environment and available data, since modernization shouldn't be judged by assumed benefits. A baseline shows what's happening today; measurement shows whether something changed; continued measurement shows whether it held.

The question is about both implementation and whether the operating environment became measurably better.

Turning Medication Management into an Enterprise Performance Capability

Modernization has often centered on individual technology decisions: dispensing, inventory, software, analytics, point-of-care automation. Those capabilities matter, but for organizations operating across multiple hospitals, enterprise performance increasingly depends on a coordinated environment that connects automation, inventory, information, workflows, governance and continuous optimization.

Cloud-enabled, connected automation may provide part of that foundation, making it easier to manage technology across locations, share information, understand variation and adapt practices over time.

Omniceil's evolving medication-management platform strategy is intended to support this more connected approach, bringing together automation, software, data and services across medication-management workflows.

The enterprise test is whether the medication-management environment has become easier to operate, measure and improve.

The goal is an operating model capable of turning automation, information and better-designed workflows into sustained enterprise performance.



Questions Worth Discussing

- Where does medication management create avoidable operational friction today?
- Where would greater consistency reduce complexity without compromising appropriate local flexibility?
- How consistently is medication availability understood and measured across the enterprise?
- Are current measures focused primarily on technology deployment, or on what changes after deployment?
- What would a genuinely high-performing enterprise medication-management environment look like three years from now?

Contact your Omnicell representative to discuss how you can create an enterprise medication management operating model for your organization.

About Omnicell

Omnicell helps health systems to create more connected medication management environments through enterprise visibility, interoperable cloud technology, standardized workflows, and operational intelligence.