LUM model at Concord Hospital sees performance boost

through automated demand capture solution at the point-of-use

Success Story

Concord Hospital

Concord Hospital, a regional medical center, is the second busiest acute care hospital in New Hampshire, with 295 licensed beds and 238 staffed beds. For 10 consecutive years, Concord Hospital has been recognized as one of the "most wired" medical facilities in the U.S. by Hospitals and Health Networks magazine, the journal of the American Hospital Association.

Rigorous advocacy for Lean methodologies and efficiency through innovation prompted adoption of a Low-Unit-of-Measure (LUM) model for supply replenishment, but in order to effectively manage Just-in-Time (JIT) inventory levels, Concord Hospital sought to improve demand capture at the point-of-use, as well as data availability for its LUM provider.

This supply chain transformation is therefore in response to the regional medical center's initiative to streamline its logistics activities and increase the accuracy of its supply replenishment processes in order to recover valuable resource time, optimize inventory levels and increase supply usage visibility as it relates to internal efficiencies as well as its impact on its LUM program.

The Situation

- Clinical involvement in supply-related activities
- Labor-intensive demand capture rounds
- Elevated inventory levels despite LUM model
- Lack of real-time visibility for JIT inventory management
- Insufficient storage capacity resulting in poorly organized inventory environment and loss due to expiry

Area	Unit	Locations
Sterile	OR, Day Surgery, Central Sterile	16
Specialty	Cath Lab, Radiology, PACU	4
Nursing	ICU, Emergency	8

The Objective

- Transfer logistics activities from clinical personnel to materials management personnel
- Automate demand capture at the point-of-use to reduce manual processes and enable data-driven inventory level optimization
- Provide real-time statistics and tools for improved JIT management
- Improve layout ergonomics and product accessibility while reducing physical footprint
- Integrate product rotation workflows for supply expiry avoidance

The **Solution**

A total of 28 locations were identified as the highest impact areas for initial implementation of useIT inventory management, an RFID-enabled two-bin replenishment solution designed to facilitate just-in-time (JIT) inventory management, provide robust real-time reporting, recover valuable clinical time, and reduce operating costs.

USEIT ™
Point of Use Management

How **it works**

useIT RFID inventory management system leverages the kanban replenishment practice which begins with an established quantity of a given item divided into two batches and stored in primary and secondary compartments of a single storage module. When the primary compartment is empty, clinical staff transfer its identification tag (which contains an RFID transponder) to a wall-mounted smartpanel located near the storage unit. They then begin using items from the secondary compartment, which holds a set number of days' worth of inventory. Placing the primary compartment's tag on the smartpanel triggers an automated replenishment request before critical supply thresholds are met. The system transmits the request to a middleware application and, prompted by customizable business rules, onward to the hospital's material management information system, which then generates a pick list for stock items or a requisition for direct purchase items. During their delivery rounds, material management staff transfer the remaining supplies to the primary compartment and replenish the new supplies in the secondary one. This ensures stock rotation and helps prevent stock wastage due to expiration.

Advantages of **automation**

The inventory management solution optimizes and automates supply chain processes, allowing for improved service levels and quality outcomes while reducing operating costs:

- Automatic demand capture at the point-of-use to reduce manual processes and improve replenishment data accuracy for optimal management of a stockless LUM program

- Reorientation of resources previously assigned to replenishment tasks (mainly staff on nursing units) towards their primary mission of patient care

- Reduction of nursing staff movements and the time spent searching for and retrieving supplies in storage areas

- Improvement in turns and rotation management reducing loss due to expiry and obsolescence

- Reduction of the overall time spent on supply issues

The **Results**

A before & after analysis revealed that the point-of-use material management automation solutions had delivered significant process improvements and financial gains. Post-implementation measurements allow for remarkable gains relating to productivity, supply costs and storage space.

37% reduction in clinical time spent on supply requisitions

The implementation of useIT improved inventory availability for general supplies, reducing clinical time spent on supply-related requisition activities by 37%, as well as lowering the number of requisitions by 27%. These reductions will increase as subsequent phases are implemented to alleviate clinical personnel of their supply-related responsibilities in managing consignment and high-value items, both beyond the scope of this initial project.

23% footprint recovery and 7% storage capacity increase

Implementation of useIT with vertical high density storage reduced storage space by 22.8%, while affording a storage capacity increase of 7%. The new physical layout and ergonomics provide a well-organized inventory, fixed supply locations, and a visual location system aligned with workflows and clinical procedures. As a result, clinical personnel spend less time searching for and collecting supplies.

53% reduction in materials management time spent on supply replenishment

Despite the additional replenishment tasks transferred to them, materials management is able to increase service levels by virtue of the automation inherent in useIT, which recovers 53% of the time previously spent on supply replenishment. Time-consuming and error-prone inventory demand capture rounds have been completely eliminated, and time spent on put-away processes has been reduced by 29%, enabling materials management to focus on replenishing departments efficiently and accurately, based on real-time consumption statistics.

13% reduction in on-hand inventory value

Immediately prior to implementation of useIT, Concord Hospital conducted an aggressive inventory reduction exercise; an initiative aimed at rendering its LUM program as lean as possible by culling excess inventory. It was determined that this exercise eliminated approximately 6% of the total inventory value. The data accuracy that useIT provides, the automated information exchanges, and a reengineered layout, allowed Concord Hospital to achieve an additional 13% reduction in inventory value, despite including 4.7% more SKUs in its 'after' analysis.

63% decrease in stock wastage costs

Product shrinkage or wastage is usually caused by expired, damaged or obsolete products, representing up to 8% of the total distributed volume of supplies, primarily due to excess inventory, slow turns and inferior top-up put-away practices. Because useIT facilitates just-in-time inventory management, hospitals need only carry optimal levels of inventory, while the built-in stock rotation feature further reduces the risk of products going to waste. It is estimated that the new system has the capability to reduce this shrinkage rate to 3%, representing a 63% reduction in loss due to waste.

Invaluable real-time statistics

Critical to the success of its LUM program, Concord Hospital benefited immensely from the fully customizable business rule settings and reporting engine. In addition to continuous optimization tools that will guide future optimization opportunities, useIT automatically generates requisition orders deliverable to Concord Hospital's LUM provider for seamless JIT inventory management. Automated response decisions keep reliance on manual processes to a minimum, while compiled consumption data provide key performance indicators to enable informed decision-making.

TECSYS®
Healthcare

1 Place Alexis Nihon, Suite 800, Montreal, QC, Canada H3Z 3B8

www.tecsys.com // info@tecsys.com // Phone: 514-866-0001 // Toll Free: 1-800-922-8649