

Project Title

Smart Inventory Management Systems (SIMS)

Project Lead and Members

Project lead: Albert Ho

Project members:

- Tong Kim Loo, Assistant Director (Nursing, NUH)
- Cindy Tan, Senior Nurse Manager (NUH)
- Florence Yeo, Nurse Manager (NUH)
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- Dr Tang Chien Her, Senior Vice President (ST Logistics)
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Organisation(s) Involved

National University Hospital, ST Logistics

Project Period

Start date: Jul 2017

Completed date: Sept 2018

Aims

To mitigate the issues faced while managing consignment stocks; To improve accuracy in stock-taking and forecasting

Background

See attachment

Methods

See attachment

Results

See attachment

Lessons Learnt

During the 14 months of developing SIMS, we envisioned a fruitful end goal where everyone would adopt and embrace a technologically enhanced inventory system. Disruption to the normal process practiced also requires time for users to buy in. Biggest takeaway from this whole journey was rightful communication and traceability. However, it also highlights on further improvement to be made, such as, further traceability, down to case number for billing accuracy between vendors and user.

Conclusion

Innovation in the way we do things is critical even though the change may be challenging and takes much effort at the beginning of the process. Eventually, everyone benefits from the innovation and enjoy the gains from the effort spent. Hence, innovation should always be on everyone's mind.

Project Category

Automation, IT & Robotics

Keywords

Automation, IT & Robotics, Productivity, Process Improvement, Inventory Management, Error Reduction, Safe Care, Waste Reduction, Nursing, National University Hospital, ST Logistics, Smart Inventory Management System, Medtronic Singapore, Main Building Operating Theatres, Real-time Reporting and Analysis

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SMART Inventory Management Solution (S.I.M.S)

Transforming Singapore's Healthcare Supply Chain

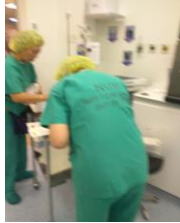
After analyzing current issues like: manual stock taking process, loss of time due to searching for products and the long waiting time for product replenishments, a new approach to the inventory management services was envisioned, leveraging on technology to improve accuracy in stock-taking and forecasting.

NUH, Medtronic Singapore and ST Healthcare (STHC) worked together to develop this innovative solution, leveraging on technology and data analytics to improve processes, reduce waste and increase productivity of staff.

Key Challenges

Inventory Management

Stock-taking is conducted regularly and manually counted, a process that is both laborious and prone to error.



Handling

Missing or misplaced items due to improper handling translates into write off costs, in addition to increased manual processing.



Storage

No proper segregation of products, resulting in lack of visibility and additional time wasted to locate a product for use.



Solution

An end-to-end inventory management solution was implemented, deploying a SMART cabinet with RFID readers in the OT to provide real-time inventory visibility and activity tracking. Products to be used are scanned out and replenishment requests are automatically triggered. Usage patterns are captured and used to inform par levels and anticipatory replenishments.

A data driven solution enabling a more proactive approach to ensuring the Right product, at the Right place and at the Right time.

End-to-end Inventory Management

Centralized Storage

RFID tagging of products

Interactive user interface

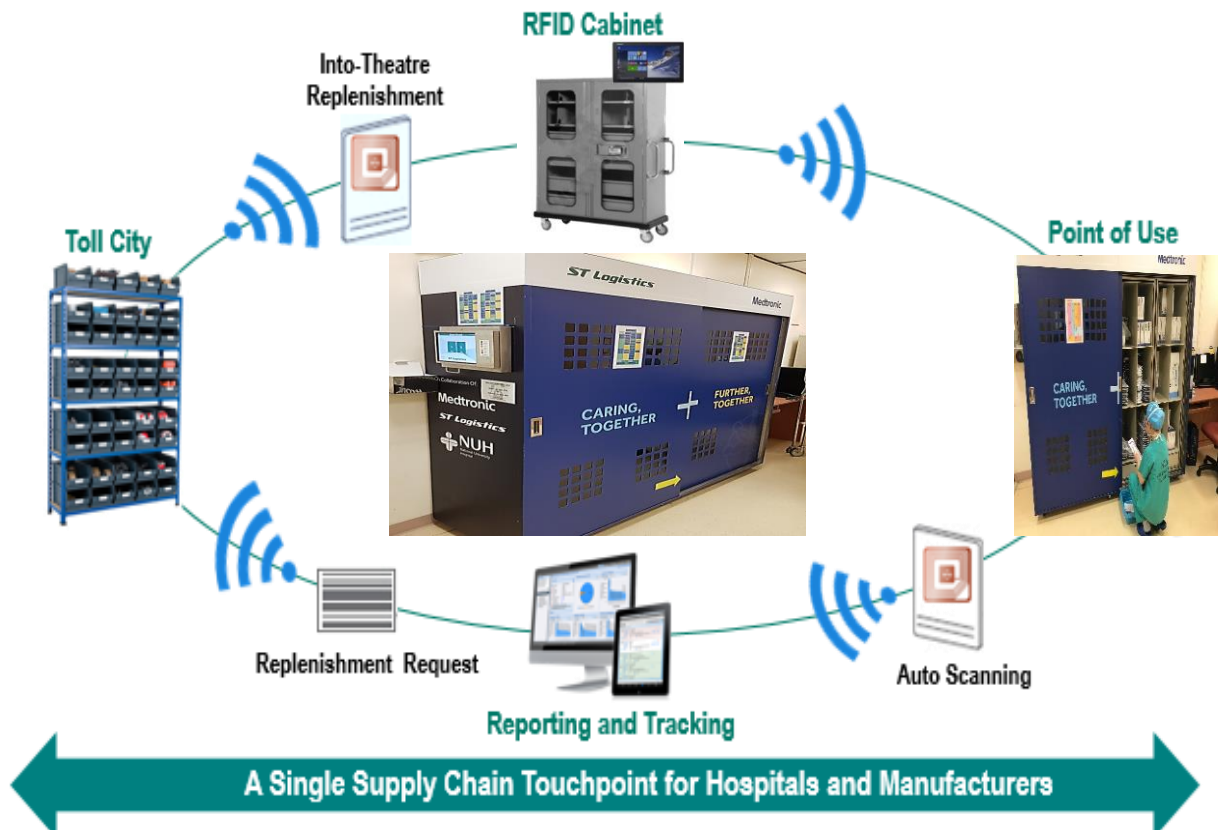
Real-time inventory analytics

Automated top-up triggers

Predictive usage patterns

Anticipatory replenishment

Systematic reconciliation



Benefits



Real-time inventory count and activity reporting



Enhanced patient safety with automated product expiry tracking



Reduced human intervention, increasing productivity



Just-In-Time replenishment process to minimize waste and redundancy



Robust 'track and trace' audit trails to promote user accountability