

National Quality Improvement Conference

IMPLEMENTATION OF KANBAN SYSTEM FOR MATERIAL REPLENISHMENT IN WARD STORE

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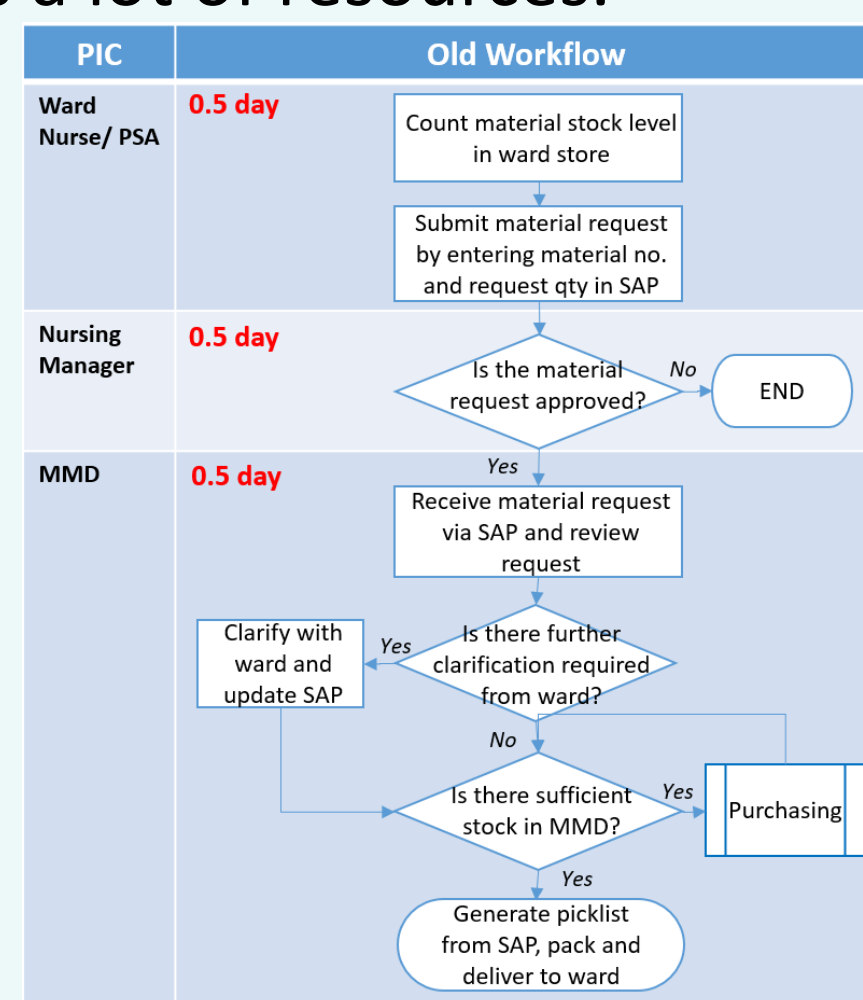
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Problem Statement

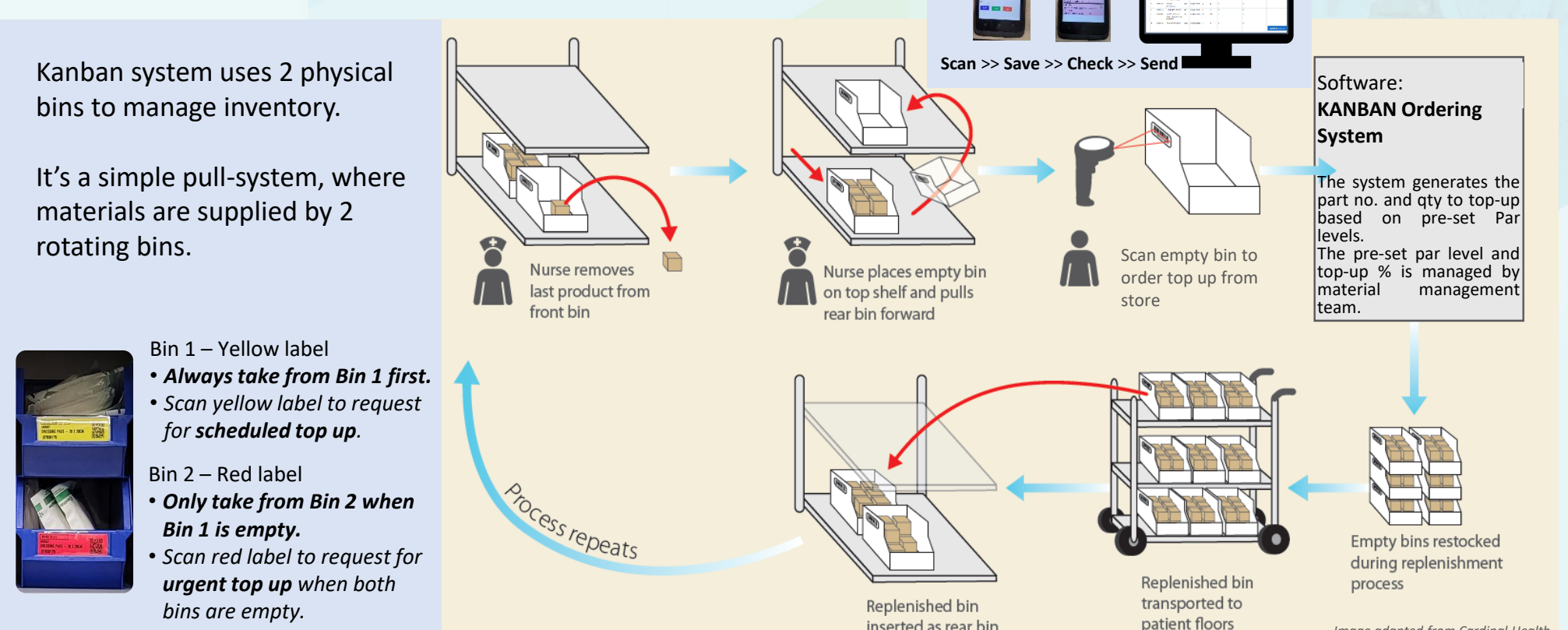
The material request and issuance process from the hospital's main store to ward store is lengthy and requires a lot of resources.

This resulted in (a) long lead time from request to issuance; and (b) high inventory storage in the ward store.



Potential Solutions

Implement Kanban system to simplify and automate material replenishment process

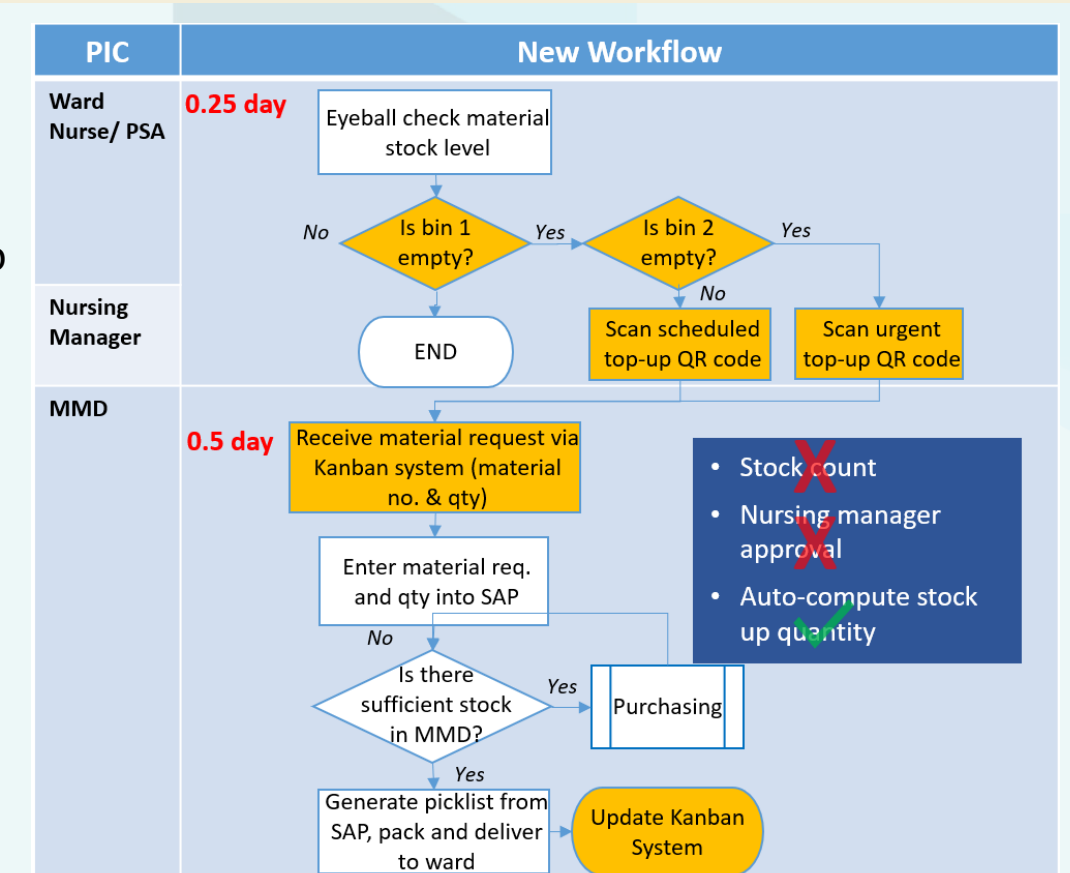


Simplify material request

- Visual management in ward store to identify material to replenish
- Remove additional approval layer

Automation

- Use mobile PC to scan & submit material request to logistic team.
- System auto-compute request quantity based on PAR level.



Project Aim

- To implement Kanban system to **automate material stock replenishment**.
- To **reduce lead time** for material stock replenishment from 1.5 days to 1 day.



Phase 1
1st prototype ward by Mar 2022

Phase 2
Implement to all 10 wards 3 outpatient services by end FY 2023

Lessons Learnt

To be agile and open when implementing a complex process change.

- This is a complex project as it involves IT system development and physical storage space setup. It was challenging to estimate a reasonable project timeline as Kanban is new to SLH, and there was lack of information on material usage and storage requirement.
- The team adapted agile project methodology to manage the project. We started with rapid prototyping using Ward 1B to test the design concept. We then refined the solution and rolled out to the other locations.

To engage all stakeholders to gain support and to manage expectations

- At the initial stage of the project, the team engaged the Head of Operations and Assistant Director of Nursing to understand management expectations and to seek staff nomination to be part of the project team.
- When we started to implement Kanban in Ward 1B, we observed that staff often misplaced the materials in the ward store and 2-bin storage system is not followed.
- The team approached the nurses on the ground to gather their feedback on how the materials could be better arranged in the store. This helps us to design a store layout that is efficient for both the nursing team and logistics team.

Outcomes & Impacts

Kanban system is **successfully implemented in all 10 wards and 3 outpatient services** by Sep 2023. Lead time for material stock replenishment is **reduced from 1.5 days to 0.75 day**.



| No | Location | Implementation Date |
|----|------------------|---------------------|
| 1 | 1B | Apr 2022 |
| 2 | 3B | Nov 2022 |
| 3 | 3D | |
| 4 | 2B | Jan 2023 |
| 5 | 4A | |
| 6 | 3A | |
| 7 | 2D | Feb 2023 |
| 8 | 1D | Mar 2023 |
| 9 | 4B | Jul 2023 |
| 10 | 2C | Aug 2023 |
| 11 | Community Clinic | Mar 2023 |
| 12 | Home Care | |
| 13 | Day Rehab | Sep 2023 |

Reduced waste

- Remove Nurse Manager approval** as this step does not add value to the process.
- Cut down waiting time** between processes. (No need to wait for OPS data entry and Nurse Manager approval)
- Reduce inventory stock** in the ward. Materials are requested based on actual usage and smaller order quantity per request due to shorter lead time
- Lesser time needed** for nurses to check material required and request from store. This time saved could be spent on providing more direct care to patients.
- All materials are consolidated** in a single storage location. Cut down the movement to look for items in multiple locations.
- Reduce potential human error** in requesting the wrong part no. and quantity from main store

"Ordering material is now very easy. I no need to count every time and ask PSA to enter into system" Nurse Yin Mon, Ward 1D.