Singapore Healthcare Management 2017

Optimizing Pharmaceutical Supplies in Alexandra Hospital

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Sengkang Pharmacy Store

1. Background

As of March 2016, AH pharmacy store supplies to 25 distribution points. For ward replenishment, the topping-up will be done according to the weekly schedule. One day before delivering the supplies, store will check the stock level.

2. Current State

Currently it is time consuming to physically count the balance stock with an average of 110 items in each distribution points. About 30% of the BOM list will be re-ordered.

This quantity on hand in each distribution points will be keyed into Hand Held Terminal (HHT) manually which will sync with TOPS to generate itemised pick list for picking in pharmacy store. Counter-checks are completed before delivering the supplies to the wards/departments

3. Analysis

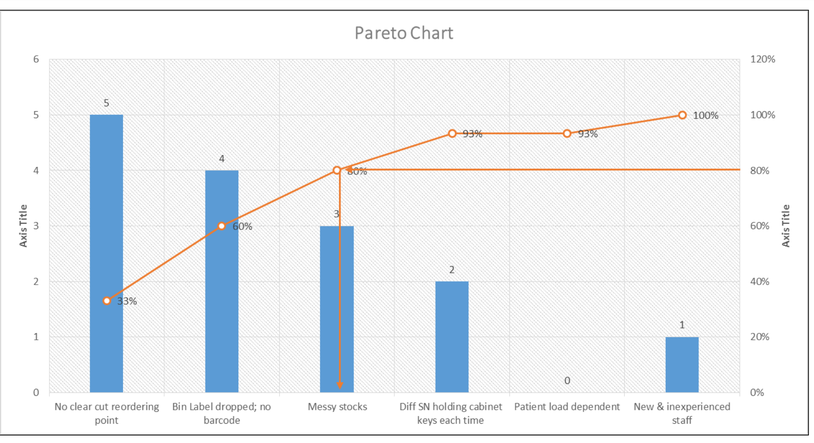

Chart 1

The team used Flow Chart as a tool to map out the sequential work processes and decision points involved. Cause and Effect Diagram and 5 Whys were used to examine root causes of the identified problem by grouping into 4 categories: Process, People, Hardware/ Software, Environment. 2 rounds of multi-voting (Chart 1) were conducted to prioritise the most important causes to work on.

4. Goals / Targets

PDSA 1: Implement Kanban Re-ordering System

Fig. 1

Fig. 2

Fig. 3

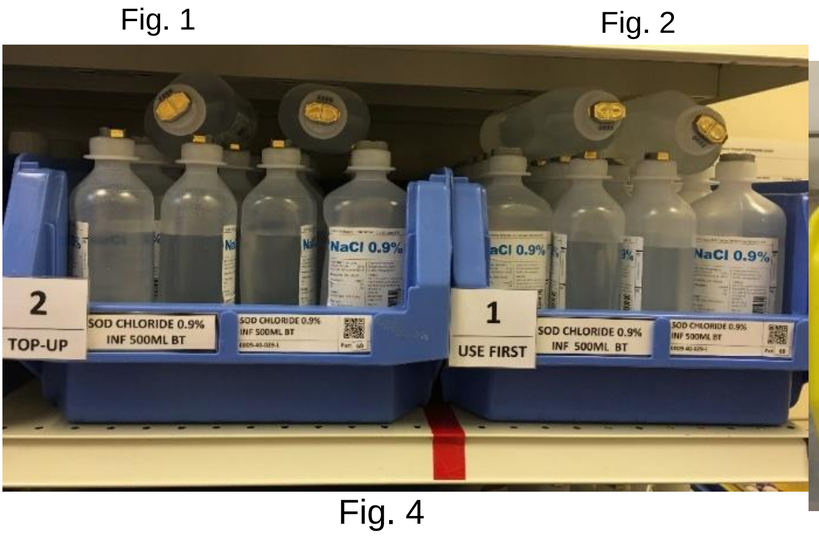

Fig. 4

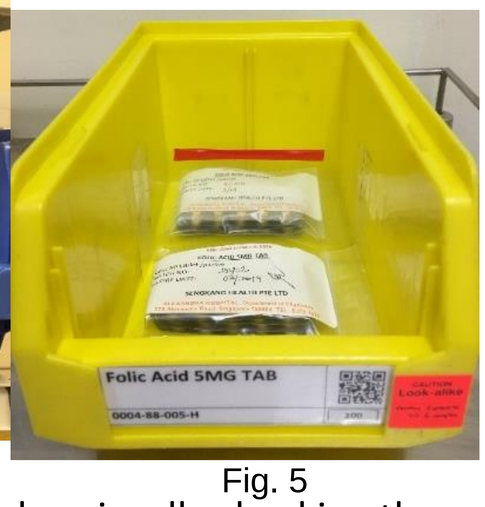

Fig. 5

Fig 1-5 are several Kanban methods which involve visually checking the re-ordering level without physically counting each item.

Par level should reflect 2 weeks usage (weekly topping-up) if consumption is regular. Usage is erratic due to unpredictable patient load. Therefore, stock-out happened frequently for really fast-moving item (as shown in Fig 7). As the consumption has not reached ":steady-state", the par level was not accurate. Due to the system limitation, there were many system re-works needed after implementation of PDSA 1.

PDSA 2: Identify WASTE by "LEAN-ing" in:

1.TOPS Rework
2.Adhoc supply on top of regular topping up
3.Inventory space

Fig. 8a

Fig. 8b

As shown in Fig 8a, items were rearranged to Fig 8b to fully utilize the available limited space. However, there were delay in implementation of PDSA 2 as the team needed to communicate with Nurse IC for par-level review.

PDSA 3: Housekeeping

Focus on 2 other fish-bone causes:-
1) Bin label dropped; no barcode
2) Messy stocks

No significant reduction in scanning time as housekeeping is necessary during inventory checks. However, after PDSA 3, correct dug labels are used at the respective drug bin. A copy of updated BOM list Is also available at the ward stock cabinet.

7. Results / Follow up

The team unable to reduce scanning time by 50% as time spent on housekeeping was substantial and could not be discounted. The usage is erratic, except for really fast moving items, which undermines the effectiveness of Kanban. For regular or fast moving items (eg bulky items or infusions), Kanban with improvised ordering system might be a good solution. The team will follow up with another QI project focusing on delivery optimization for bulk and external items. On the other hand, the team also discovered that after regular housekeeping, the topping up speed increases. The team will ensure housekeeping is done regularly to maintain or improve the topping up speed.