Singapore Healthcare Management 2018

Singapore General Hospital
SingHealth

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Streamline Inpatient Consumables Supplies Process

Background

Retail pharmacy handles over 300 ward nurses' orders for consumables daily. The process for supplying consumables start from the ward nurse who fills the orders in the hardcopy retail item order form (ROF, Fig 1), and faxes/tubes down to Retail pharmacy till a porter transports the consumables to the ward. The turnaround time of supplying retail items to the wards will normally take about 2 - 3 hours. Between 2014 - 2016, the total number of items supplied to the wards increased by 30% (Fig 3). Some common items were repeatedly ordered from the ward nurses on a daily basis which had made the process very inefficient, repetitive and labour consuming.
By streamlining this process, retail pharmacy can better meet our patients needs and fulfil SGH priorities such as releasing resources for better frontline patient services, and creating operational efficiency and cost savings.

Fig 1. Retail item order form (ROF)

Fig 2. The porter collected processed items in batch to send them to the wards

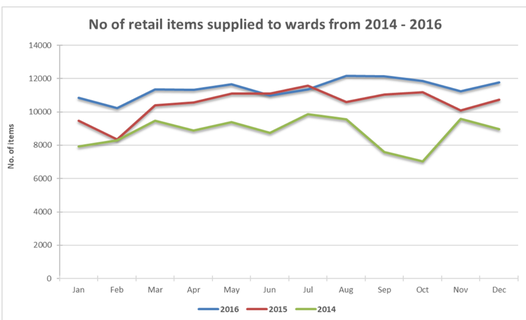

Fig 3. The chart shown trend of number of retail items processed from 2014 - 2016

Analysis of problem

A cause and effect analysis (fishbone diagram) was performed to brainstorm the team for the perceived causes of the increasing number of retail items supplied at the pharmacy (Fig 4).

There were 6 major causes identified and highlighted in red.

Each team member was allowed to select 2 causes which they considered as "High Impact" for the increased supplied. Based on a summation of the number of votes from the selection of 2 causes from each member. The top 3 "High Impact" causes were identified and circled in Fig 4.

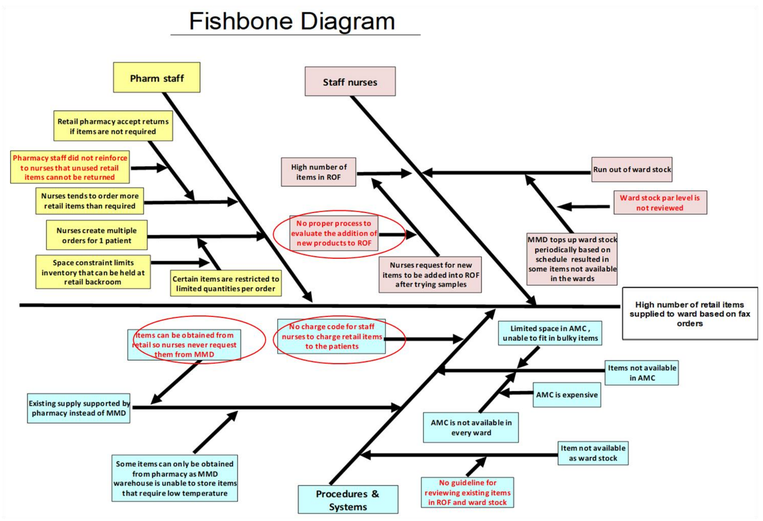

Fig 4. Fishbone diagram for the identification of "High Impact" causes of increasing number of retail items supplied at the pharmacy

Interventions / Initiatives

The tree diagram was used to guide the project team for the process steps required to implement changes for the interventions (Fig 5).

The interventions focused on 3 primary drivers:

1. Identify items to be kept in the wards.
2. Ensure charge codes are ready for charging.
3. Proper evaluation process for new items to be added to ROF.

From each primary driver, action steps were identified and executed.

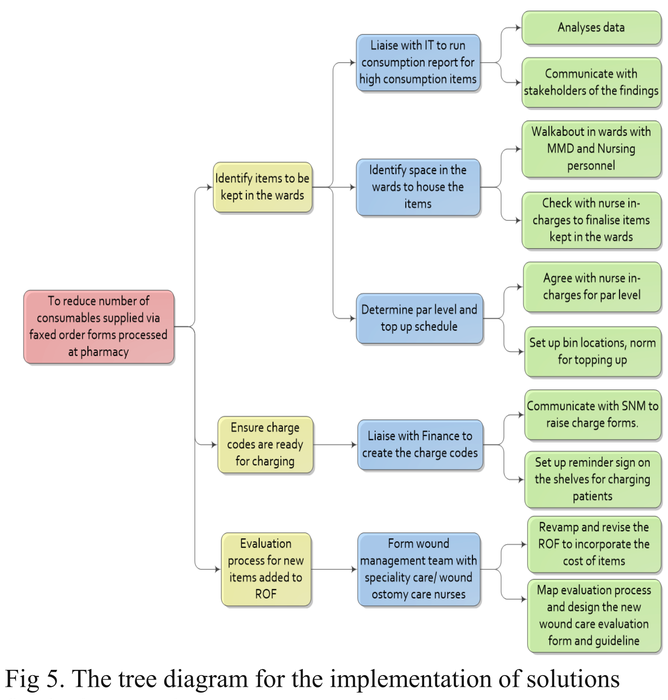

Fig 5. The tree diagram for the implementation of solutions for the interventions

Pharmacy team identified 8 high consumption retail items which can be made available to the wards to reduce the daily process of repetitive items supplied from the pharmacy. The charge codes of theses items were then created by Finance for charging to the inpatients. PDSA cycle was used to monitor if our target was fully met.

The new workflow to supply retail item is as shown in Fig 6. Retail items kept in the wards as shown in Fig 7 with "REMINDER" signage (Fig 8) to remind staff nurses to charge patients for the items used.
The new wound products evaluation process workflow as shown in Fig 9 was implemented in July 2017 to ensure any new item requested is evaluated for its cost effectiveness before adding it to ROF.

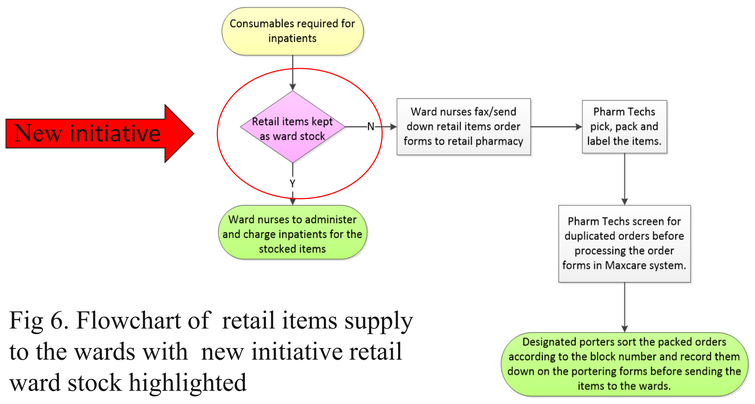

Fig 6. Flowchart of retail items supply to the wards with new initiative retail ward stock highlighted

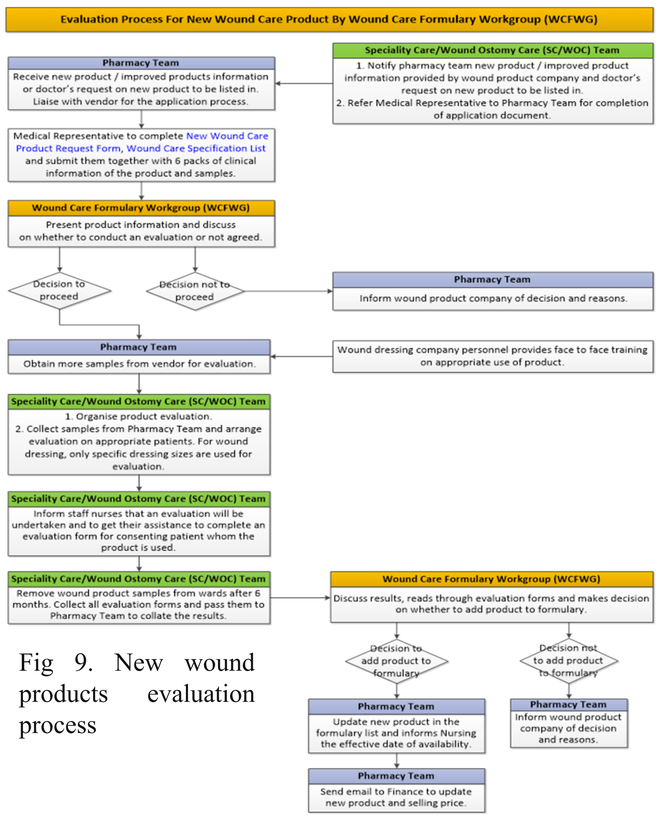

Fig 9. New wound products evaluation process

Fig 7. High consumption items are kept as ward stock

Fig 8. "REMINDER" signage are placed in the retail items ward stock areas to remind staff nurses to charge patients

Results

The baseline data from September 2016 was used to monitor the trend. The run chart (Fig 10) shown the decrease of number of items supplied to the wards from pharmacy since the direct topping up of high consumption items to the wards in June 2017. Total 23% of reduction after implementing the interventions.

The key benefits from the reduction of processing ROF at pharmacy are:

1. Manpower savings from shorten the overall process time is about **336 hr** which is equivalent to **2.3 FTE**.
2. Reduce turnaround time for items supplied to the patients. The time required for the porter to deliver the items to the wards per trip is about 25 mins. Other non-value added time required for the porter to wait for the items to be prepared at the pharmacy is about 40 mins between each trip.

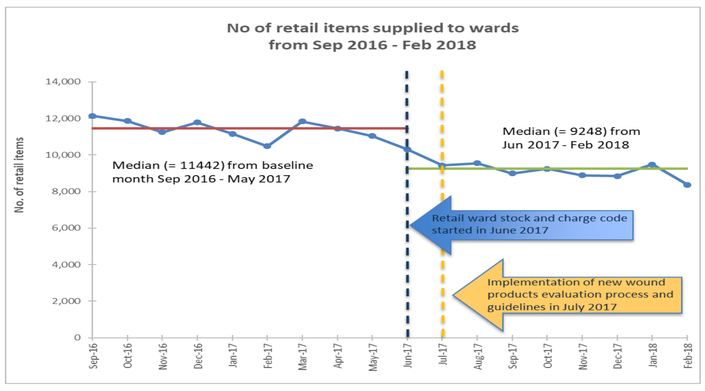

Fig 10. The run chart with medians after the interventions

Process descriptions	Before interventions	After interventions
Ward nurse downloads, prepares, & faxes/tubes down the form	15 min	
Ward nurse takes the item from retail ward stock		8 min
Pharmacy staff screen the ROF, type, label, pick/pack, check & bag the items	3.5 min	
Median of retail items processed per month	11442	9248
Time saved from streamling the supply process = 2194 x (10.5min) = 384 hr		
Time for topping up retail items to the wards = 145 min x 20 days		48 hr
Total manpower time savings = 384 – 48 = 336hr		

Fig 11. Comparison table for time savings before and after interventions

Conclusion

In this new workflow, pharmacy staff will still need to actively screen through the ROFs to reject nurses orders for retail ward stock items. Nurses are informed of the rejection via phone call, or pharmacy staff will indicate retail ward stock on the rejected forms which will be sent back to the wards via porters service. In order to ensure sustainability and reduce the strain placed on pharmacy manpower to restock the retail ward stock items, MMD's support is required to take over the restock.