

# To redesign the ordering workflows at the SOC Pharmacy to improve inventory management and prevent stock out situations

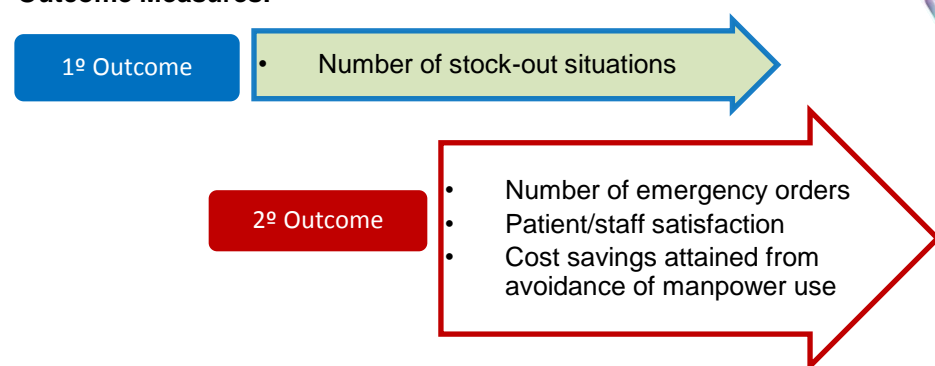
Y F Lai<sup>1</sup>, L Teo<sup>1</sup>, H A Panganiban<sup>1</sup>, E T D Uson<sup>1</sup>, Y C Lee<sup>1</sup>  
1Department of Pharmacy, Singapore General Hospital, Singapore.

**Introduction:** Prior to November 2012, Specialist Outpatient Clinic (SOC) Pharmacy comprised of Level 1 and Basement satellites serving clinics at Level 1 and Basement respectively. Both pharmacies stocked a range of different medications depending on the clinical disciplines served. In November 2012, the two pharmacies merged with the expansion of Level 1.

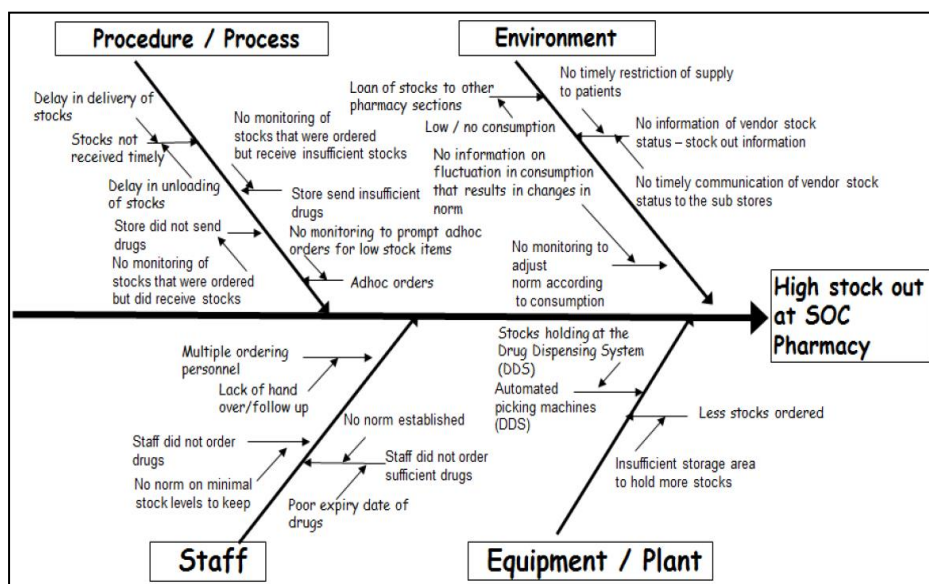
With the merger, there was an urgent need to review the stock ordering processes and par levels for all buffer stocks. Before a new norm was established, there was an increase in stock out situations since November 2012 when the new pharmacy started its operations. From December 2012 to January 2013, a total of 89 incidences of stock out situations were reported.

**Aim:** By redesigning ordering workflows, reduce stock out incidences by 80% in 3 months at the SOC Pharmacy.

## Outcome Measures:



## Root Cause Analysis:



Vital root causes identified	Analysis/Explanation
No monitoring of stocks that were ordered but receive insufficient stocks	Due to insufficient stocks at store. Store will replenish the stocks and follow up within the ordering week.
No norm established	New overall consumption levels after merger
No monitoring to prompt adhoc orders for low stock items.	Heavily reliant on manual visual checks of stocks

## Conclusion:

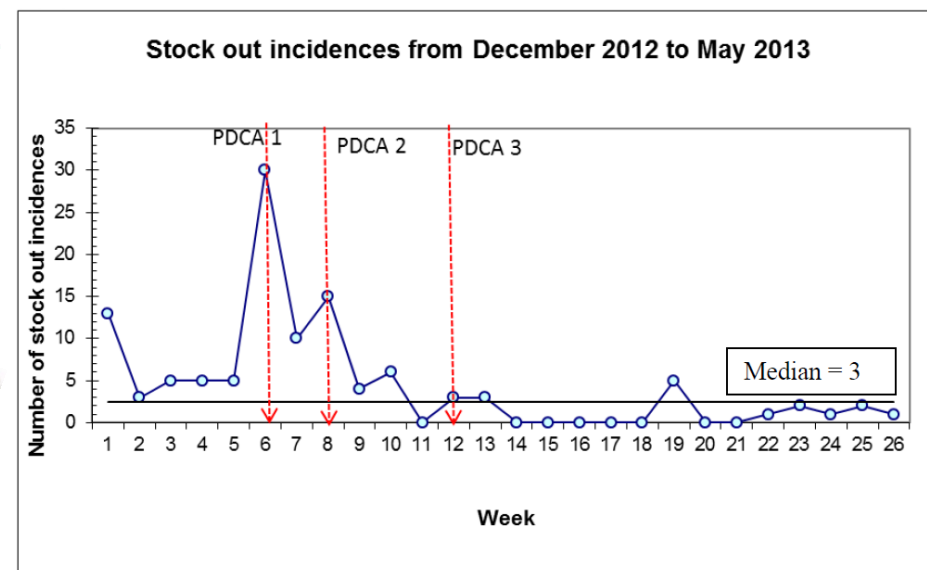
- ✓ Stock-out situations have reduced after the implementation of workflow changes, giving rise to benefits downstream.
- ✓ Targeted approach in identifying root causes and tackle with workflow improvement respectively has yielded significant positive outcomes

## New Workflows Implemented:

S/N	Root causes	Change Concepts	New idea	Why innovative
1	No monitoring of stocks that were ordered but receive insufficient stocks	37. Develop Alliance / Cooperative Relationships 37. Develop Alliance / Cooperative Relationships 44. Optimize Level of Inspection 54. Improve Predictions	Pharmacy store to extract partial and zero supply reports in TOPS system for SOC Pharmacy to follow up on the orders. Pharmacy store to send partial supply and zero supply reports to SOC pharmacy. Picking staff at store to categorize items and put loose items in boxes before sending via trolleys. Live inventory management system.	To go paperless as much as possible and utilize the electronic system to its fullest. This is an additional step to ensure the right information is being fed to the right personnel at the right time for actions. To make it easier for receiving staff to check, and preventing loose items from being left out. Paperless and real-time tracking of usage and ordering.
2	No norm established	11. Change Targets or Set Points 54. Improve Predictions	To establish norm for 10 days (additional buffer of 3 days for weekly orders), and update quarterly. Live inventory management system.	To allow ordering staff to order more accurately while checking the existing stock on-hand. Paperless and real-time tracking of usage and ordering.
3	No monitoring to prompt adhoc orders for low stock items	23. Match Inventory to Predicted Demand 23. Match Inventory to Predicted Demand	All staff to write low stock items (increase in consumption) on a list posted on the drug gondolas so that the ordering staff can order more stocks before the next ordering week. All staff to write low stock items on a white board fixed to the gondolas.	To allow pre-emptive action before stock depletes, after disappearance of safety net from the presence of another satellite outpatient pharmacy. To allow ordering staff to check periodically and take actions accordingly.



## Results and Discussions:



From the diagram, it can be observed that the number of stock-out situations hovered between 5 to 13 per week before week 6, implementation of new workflow in phases from week 6 to week 12.

At the end of week 8, the ordering team made use of it to better estimate ordering quantity and stock-out situation improved drastically.

From week 12 onwards till endpoint at week 26, our ordering staff started tracking more actively in items not delivered or delayed in delivery from our pharmacy main store. Such awareness allowed our staff to pre-emptively restrict patients' collections or borrow from other sections before stocks ran out. Together with previous two measures, it helped us to maintain zero stock-out from week 14 onwards till week 18. Stock out incidences reported after week 19 were due to failure to fulfill delivery by the vendors.

## Derived Benefits:

- ✓ Reduced frequency of stock-outs
- ✓ Reduced frequency of emergency orders from pharmacy store
- ✓ Reduced need to borrow from other pharmacy sub-stores
- ✓ Shorter waiting time for patients and reduced related complaints
- ✓ Reduce stress experience by staff handling stock-out situations and related patient complaints
- ✓ Allows redeployment of staff from emergency ordering to other tasks, providing estimated manpower cost saving of \$13500 per year.

## Reference:

Joint Commission International (JCI) Survey Process Guide, 4th Edition