# TO IMPROVE AND REDUCE OUT-OF-STOCK SITUATIONS IN SENGKANG GENERAL HOSPITAL OUTPATIENT PHARMACY

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## INTRODUCTION

Inventory management is essential to ensure drug sufficiency for the undisrupted provision of drugs to patients. In Outpatient Pharmacy at Sengkang General Hospital (SKH), the par level system which bases on the past monthly movement and estimation is sometimes unreliable. This leads to frequent occurrence of insufficient stocks situations, when there is an increase in demand for the medication. Warehouse Management System (WMS) is utilized for weekly ordering and triggers store to top up in low stock situations.

## OBJECTIVES

- Appoint a Pharmacy Technician in-charge for each gondola to monitor the inventory of items under their care
- To assist the inventory team in monitoring stock levels effectively
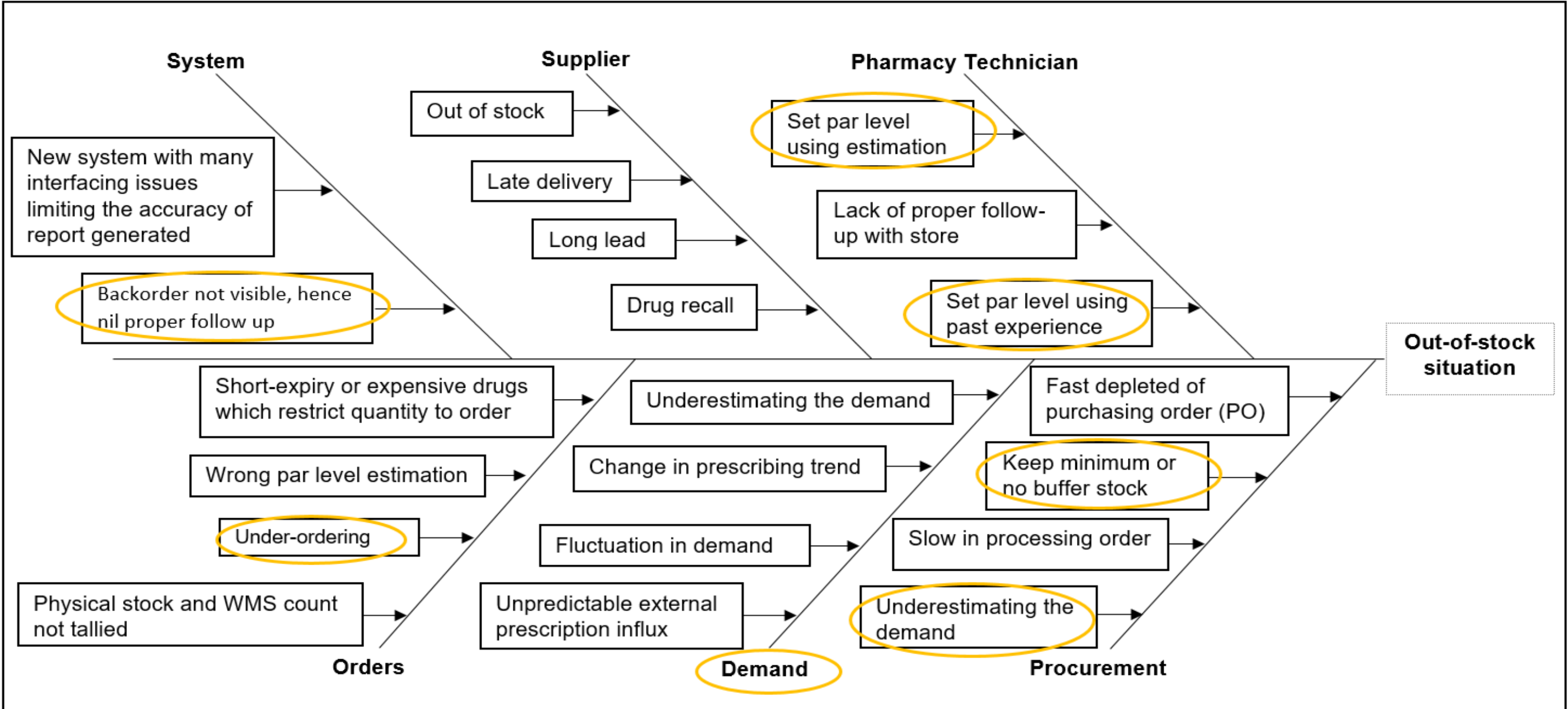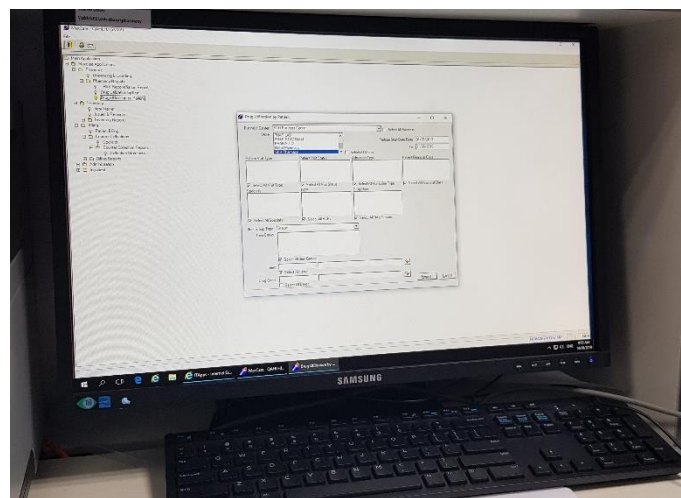- Overall, reduce out-of-stock situation

## METHODOLOGY



*Figure 1. Fish Bone Diagram on the reason of out of stock situation in pharmacy*

A Fish Bone Diagram was conducted to identify the reasons for out-of-stock situations in pharmacy, identifying the root causes.

After which, independent sample *t*-test was used to compare mean average number of out-of-stock items over the 30 days before and after implementation of the new work flow.
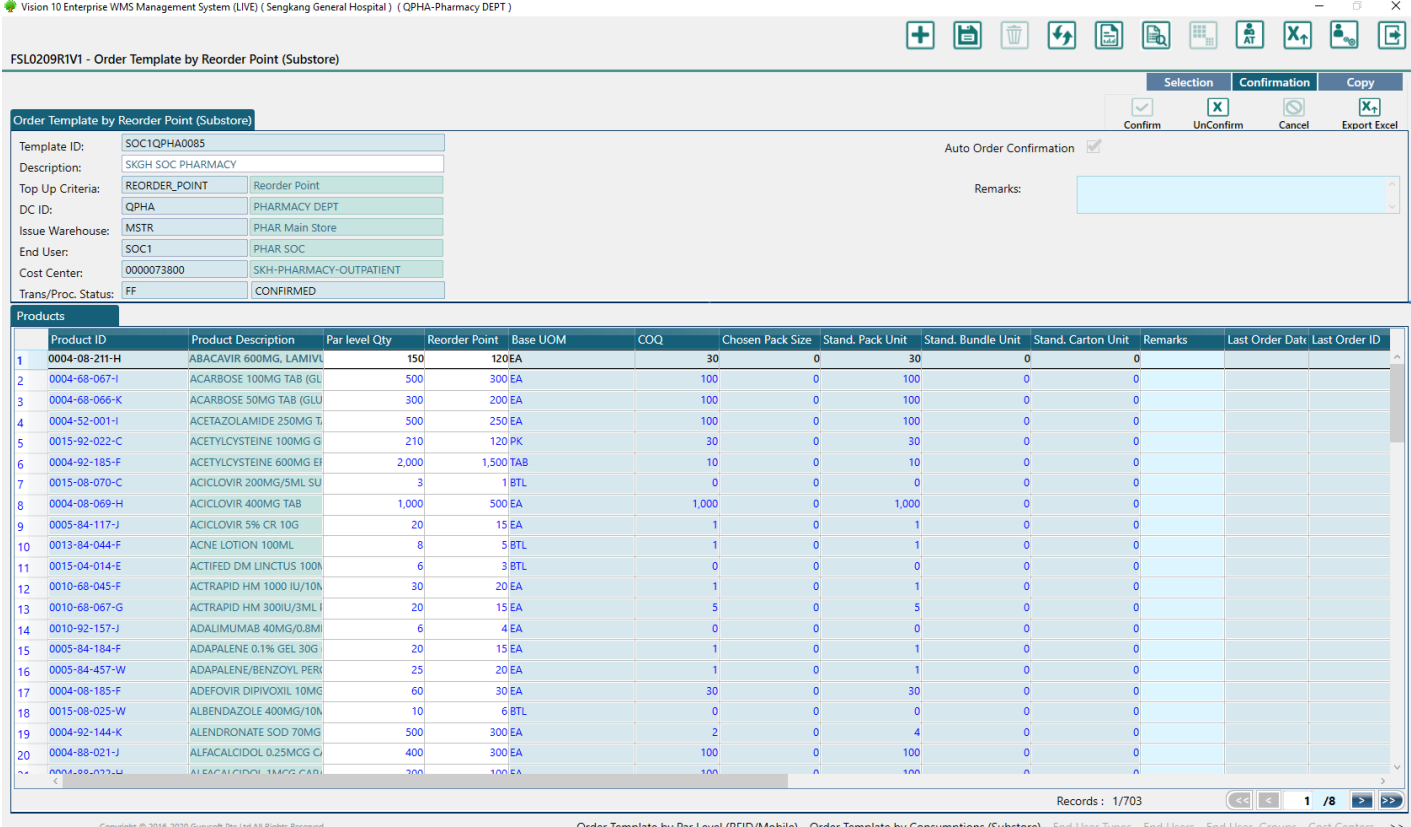
## IMPROVED WORKFLOW

Generate monthly consumption report in Maxcare system

Monthly review to adjust the par level and reorder point-according to the consumption in WMS

**Weekly Order:**
WMS will automatic trigger store to top up the stock to the par level when item drop below the reorder point

Store will deliver the stocks once a week

**Other day when out of stock / stock running low:**

Gondolas in-charge will monitor the inventory of items under their care. Carry out top-up and checks daily.

1. If the items are not sufficient, drop the radio frequency identification (RFD) tag into the RFD box and inform any of inventory team member. Store will deliver RFD order on a weekly basis.
2. Inventory Team will obtain ad-hoc stocks from store if the stock levels are critically low which may not be sufficient to last till the next RFD scheduled.



*Maxcare (electronic dispensing system)*
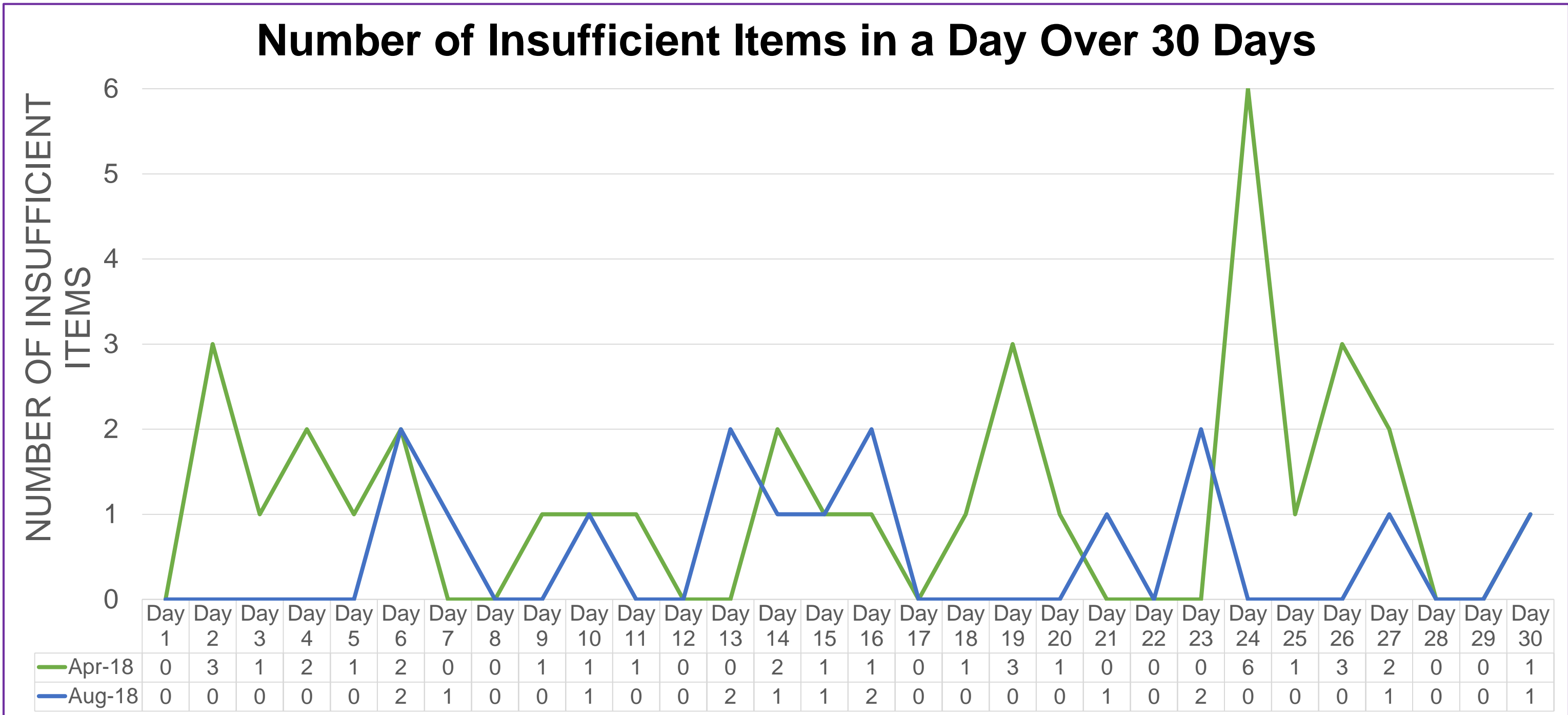


*WMS ordering method*



*Gondola*



*RFD Tag & Box*

## RESULTS

A total of 34 out-of-stock items were identified in April 2018 (pre-implementation) and 15 items were identified in August 2018 (post-implementation).



*Graph 1. Out-of-stock situations in a day*

| Average number of Items out-of-stock before and after implementation of new workflow | | | | |
|---|---|---|---|---|
| Variable | Observation | Mean (95% Confidence Interval) | Mean Difference (95% Confidence Interval) | P Value |
| **Before** | 30 days | 1.13 (0.63–1.63) | 0.63 (0.77-1.18) | 0.026 |
| **After** | 30 days | 0.50 (0.22–0.77) | | |

## DISCUSSION

In the past, Inventory Team was only informed when stocks were running out or at critically low levels. This resulted in Inventory Team having to make multiple ad-hoc trips to Pharmacy Store every day.

Creation of this gondolas in-charge role allowed earlier triggers of inventory stock out situations and facilitated planned ordering from Pharmacy Store. The collaboration between gondolas in-charge and Inventory Team was shown to significantly reduce insufficient stock situations . Inventory Team would have ample time to liaise with the procurement team to bring in stocks, to request for urgent deliveries or to borrow from other institutions before stocks deplete completely.

## CONCLUSION

This study has proven that the new workflow can help to reduce out-of-stock situations and allow Pharmacy Store to cope with the fluctuation of demand. It is important to have enough stocks in the pharmacy to reduce patients' waiting time, improve efficiency and patients' satisfaction.