Project Title

Store Packing Accuracy Project: To Reduce Picking Error For ADC Top-Up

Project Lead and Members

Project lead: Fung Kar Yen

Project members: Chong Soo Fan, Mavis Chang, Mohammad Ridzuan bin Abdul Rashid

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group Involved in this Project

Pharmacy

Project Period

Start date: Jan-2018

Completed date: Jun-2019

Aims

To reduce the picking error by 30%, from 39 to average of 27 wrong items picked per month by Jan 2020.

Background

See poster attached/ below

Methods

See poster attached/ below

Results

See poster attached/ below

Lessons Learnt

Streamlining the picking process and optimising manpower utilisation have shown promising results in increasing medication safety and work efficiency. Further adjustments in scheduling and rotating LA to different drug shelves may be necessary to achieve even workload distribution. This study is constantly shared with the team to engage their participation and increase acceptance to change in future implementation.

Conclusion

See poster attached/ below

Project Category

Pharmacy, Safety, Productivity

Project Category

Care & Process Redesign, Quality Improvement, Workflow Redesign

Keywords

Logistics Associates, Picking Error, Automated Dispensing Cabinet Top-Up

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STORE PACKING ACCURACY PROJECT: TO REDUCE PICKING ERROR FOR ADC TOP-UP

MEMBERS: FUNG KAR YEN, CHONG SOO FAN, MAVIS CHANG, MOHAMMAD RIDZUAN BIN ABDUL RASHID

- ☑ SAFETY
- ☑ PRODUCTIVITY
- ☐ PATIENT EXPERIENCE
- ☐ QUALITY
- ☐ VALUE

Define Problem/ Set Aim

Opportunity for Improvement

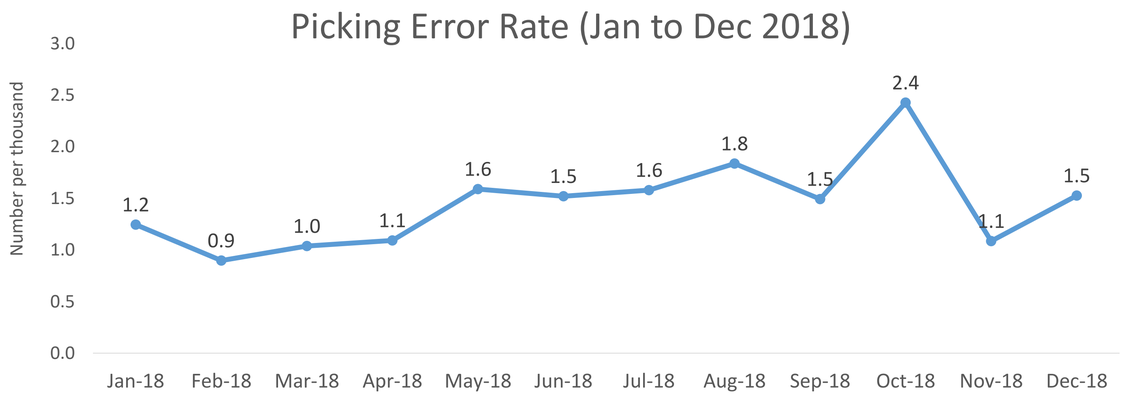
Based on data between Jan to Dec 2018, there are an average of 27193 items per month picked by pharmacy store Logistics Associates (LA) for Automated Dispensing Cabinet (ADC) top-up. An average of 39 items per month were being picked wrongly. These picking errors resulted in unnecessary re-work and hence reduced work efficiency.

Aim

To reduce the picking error by 30%, from 39 to average of 27 wrong items picked per month by Jan 2020.

Establish Measures

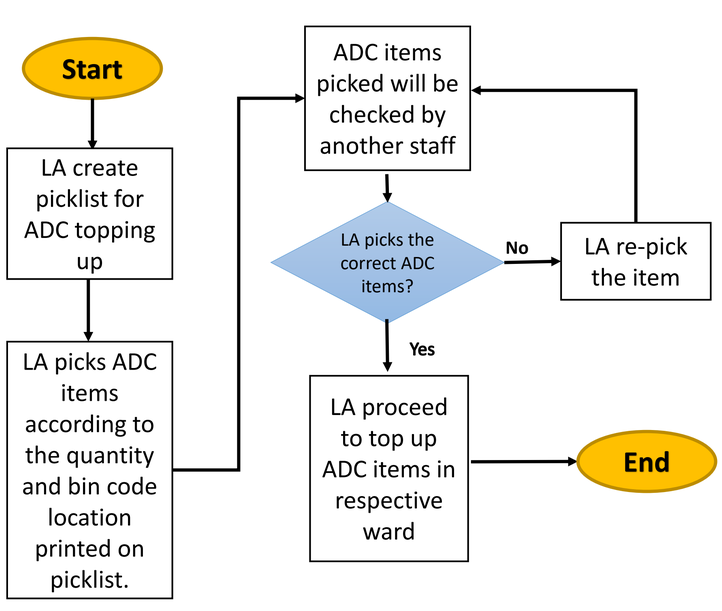
From Jan to Dec 2018, the average monthly picking error rate in pharmacy store for ADC items is 1.4 per thousand. 39 out of 27193 items per month were being picked wrongly. The error rate seem to be on an increasing trend in the second half of the year.



Analyse Problem

Current process

Logistics Associates (LA) picks the items according to the pick list. Bin Codes indicating the bin location are reflected on the pick list. On average, 9 LA would take 80 minutes to pick 458 items.

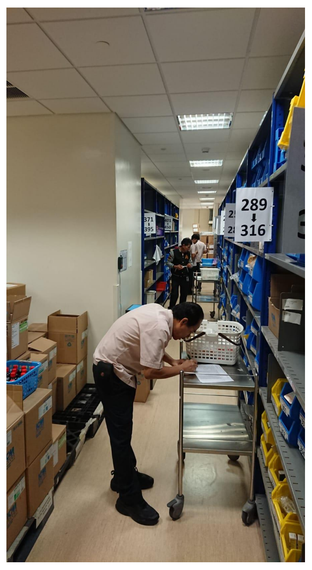


Average picking rate is 0.7 item per minute.

Probable root causes of picking error:

1. 9 LA pick their respective pick list items in the same aisle at the same time. Crowding around the same area may cause distraction while picking.
2. Space constraint also may deter some from carrying pick lists and baskets with them to the designated bins to pick the items. LA may thus not be able to perform effective checks if right item has been picked from the right bin.
3. LA have to walk to and fro between shelves to complete picking all the items (average 51 item) in their pick lists. Fatigue may cause them to loose concentration.

Select Changes



Conveyor Belt concept was proposed as solution to some of the possible causes identified. In this proposal, number of LA assigned to perform picking was reduced from 9 to 4. LA were stationed at designated drug shelves respectively with metal trolleys provided as working top. Items on pick lists are arranged in ascending orders according to the bin code. Pick lists and baskets would be passed from one LA to another in sequential order along the drug shelves once picking from respective shelves was completed. This workflow reduced staff footprints and crowding around the drug shelves during picking. Availability of pick lists and bin codes on hand allowed LA to ensure right drug was picked from the right bin.

Test & Implement Changes

This new workflow was tested in 1st Cycle on 2 selected afternoons in Jan 2019 to assess its feasibility. Afternoon picking session was selected to mitigate any risk of negative impact to operation as the items picked are for next day top-up.

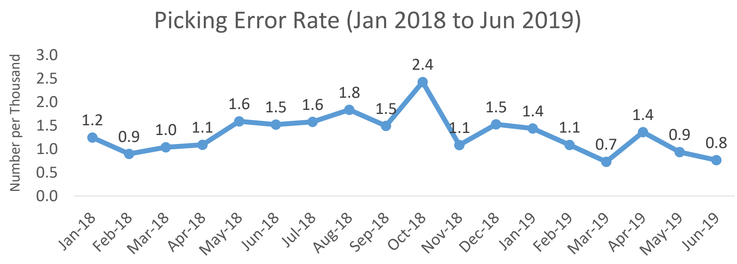
1st Cycle Results

	Trial 1 (16 Jan)	Trial 2 (24 Jan)
No. of picklists	6	9
Total line items	124	209
Total error	0	1
Total time taken	26.4 mins	49.9 mins

LA involved found it faster and less tiring to complete the tasks. The favourable results increased the team confidence to conduct 2nd Cycle, to test this new workflow on all afternoon picking sessions (excluding emergency order) for 3 weeks consecutively from 10 to 28 Jun 2019.

2nd Cycle Results

	Per Session
No. of picklists	22
Total line items	314
Total error	0.2
Total time taken	61 mins



A total of 4703 items were picked in 2nd cycle with total of 3 wrong items being picked (0.6 per thousand). On average, 4 pickers completed picking of 314 items per session in 61 minutes. Picking rate has increased from 0.7 item per minute to 1.3 item per minute. The reduction in error rate and increased work efficiency have shown promising potential to extend the workflow to all picking sessions.

Total error rate between Jan to Jun 2019 was shown to be on downward trend. This may be attributed to the intervention result and frequent communication with team on importance of improving picking accuracy.

Spread Change/ Learning Points

Total picking error in Jun 2019 has decreased to 20, achieving the target of 27 wrong items per month. More data collection is needed to assess result sustainability with implementation of new workflow.

Streamlining the picking process and optimizing manpower utilization in this study have shown promising results in increasing medication safety and work efficiency. Further adjustment in scheduling and rotation of LA to different drug shelves may be necessary to achieve even distribution of workload.

The study objective and method were constantly communicated to all staff to engage their participation in this study. Study results and benefits will also be shared with the team to increase acceptance to change in future implementation.

Ng Teng Fong General Hospital
Jurong Community Hospital
Jurong Medical Centre
Members of the NUHS