



Singapore Healthcare  
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# OPTIMISATION OF TAN TOCK SENG HOSPITAL (TTSH) PHARMACY STORE

Mary Chong, Tan Wee Sheng, Noor Muhammadh,  
Lynette Ong, Seto Benjamin, Andrew Lee  
Tan Tock Seng Hospital



## INTRODUCTION

TTSH pharmacy store plays a critical role in supplying drugs to various departments in the hospital. In recent years, some issues were identified in the supply process:

1. High back orders
2. Lack of space to meet current and future workload
3. Manual and labour-intensive processes, prone to errors
4. Staff frustration

## AIM

The project aims to achieve:

- Space optimisation
- Workflow efficiency
- Higher staff satisfaction

## METHODOLOGY



Collaboration with key stakeholders and Kaizen in April 2015 to perform value stream analysis of the end-to-end store processes.



Waste and opportunities for improvement were identified.



Lean methodologies used include "Go&See" sessions, current state analysis, gap analysis, together with use of one-piece flow and standard work to co-create the future state processes.



Rapid improvement experiments (RIE) were conducted from May 2015 to pilot the recommendations.

## RESULTS



### 1 Faster

#### Expiry Date Monitoring (Improve recording & disposal efficiency)

##### BEFORE

4.3 hours per Omnicell machine per quarter to cycle count, record expiry date of drugs, approve, and dispose them.

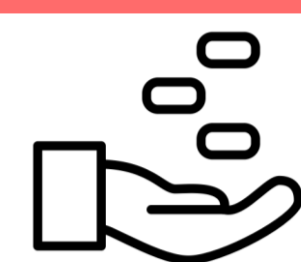
Many manual steps and paperwork involved, e.g. writing in logbooks, signing forms, etc.

##### AFTER

2.4 hours per Omnicell machine per quarter, by streamlining the entire process  
→ >50% of steps were eliminated.

- ✓ Reduced handover steps for storage of expired drugs
- ✓ Manual to electronic log to remove expired drugs
- ✓ Electronic communication for approval process

## RESULTS



### 2

### Cheaper

#### Redeployment of Manpower Savings

Job Description	Savings (FTE)
Storekeeper (Pharmacy Store)	1.17
Storekeeper (BCP)	0.13
Purchasing Technician & QC Technician	0.57
Pharmacy Technician	0.16
Pharmacist	0.05
Nursing	0.04
Total	2.11

2.11 FTE  
SAVINGS IN  
TOTAL



#### Manpower deployed to

- ✓ Increase Omnicell restock workload
- ✓ Top-up for Diagnostic Radiology
- ✓ Deliver outbound stocks to clinics.



### 3

### Better

#### Back-orders reduced by 70% from Y2014 to Y2016

2.5% back-orders in  
Feb - Apr 2016

How did we achieve this?

8.3% back-orders in  
2014

Changed material requisition planning in Oct 15 – Jan 16 to prompt for order based on Pharmacy Store stock balance and not whole Pharmacy plant stock balance.

#### More evenly distributed workload for stock receiving

Actions taken: a) Changed 4 major vendors delivery schedule to TTSH.  
b) Frequency of ordering from 2 major vendors changed from weekly to daily.  
3% - 53% stocks → 7% - 38% of stocks are received within 2 hour blocks/ day.  
15% - 31% → 15% - 24% of stocks are received /day.  
→ Reduced Mon & Tues morning congestion!



#### Improved staff satisfaction on working conditions



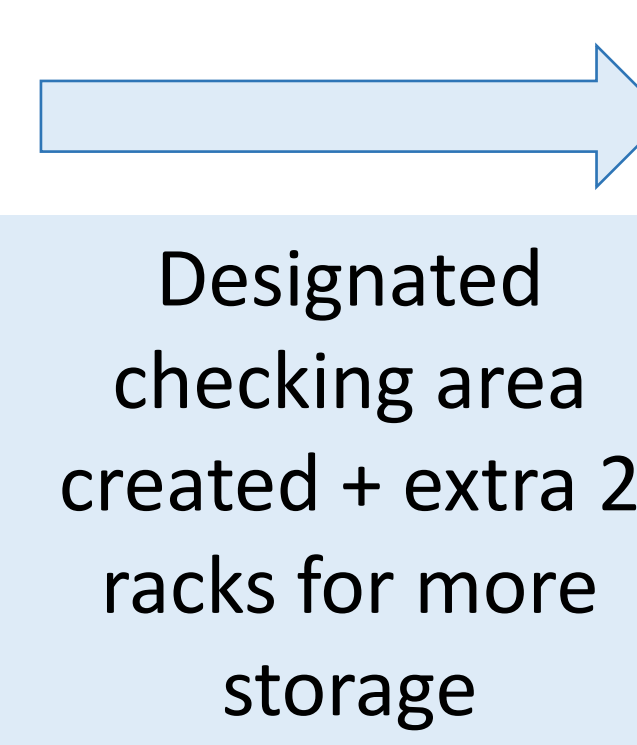
- ✓ Increased number of lighting
- ✓ Increased air-con flow
- ✓ Installed extra fans
- ✓ Reduced PA sound
- ✓ More leg room

→ staff satisfaction (receiving location) increased from 1.9 to 3.6 (5 = Highly satisfied)

#### Space optimisation: 9sqm freed up



Before



Designated  
checking area  
created + extra 2  
racks for more  
storage



After

## CONCLUSION

Lean methodologies achieved space optimisation, workflow efficiency and better staff satisfaction. They also identified a further need for information technology improvements to reduce manual processes.