



Singapore Healthcare  
Management 2016



# Development of an Electronic Inventory System in Department of Laboratory Medicine



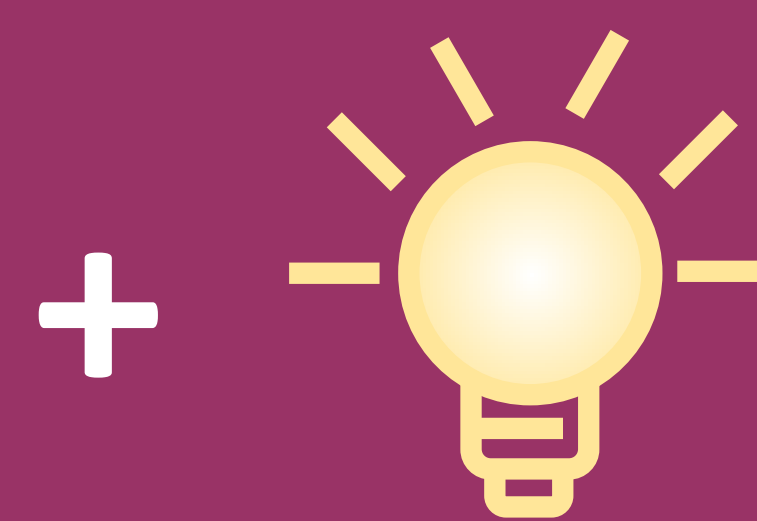
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## Introduction

This project is to develop an inventory software program using available resources to replace manual stock card recording. The system must be able to track stock movement, reduce the man-time required for inventory recording, generate inventory report and order advice for weekly/bi-weekly stock order in Ng Teng Fong General Hospital (NTFGH) from July 2015.



**Computer**  
(Microsoft Access)



**Innovation**  
(Staff Ideas & Knowledge)



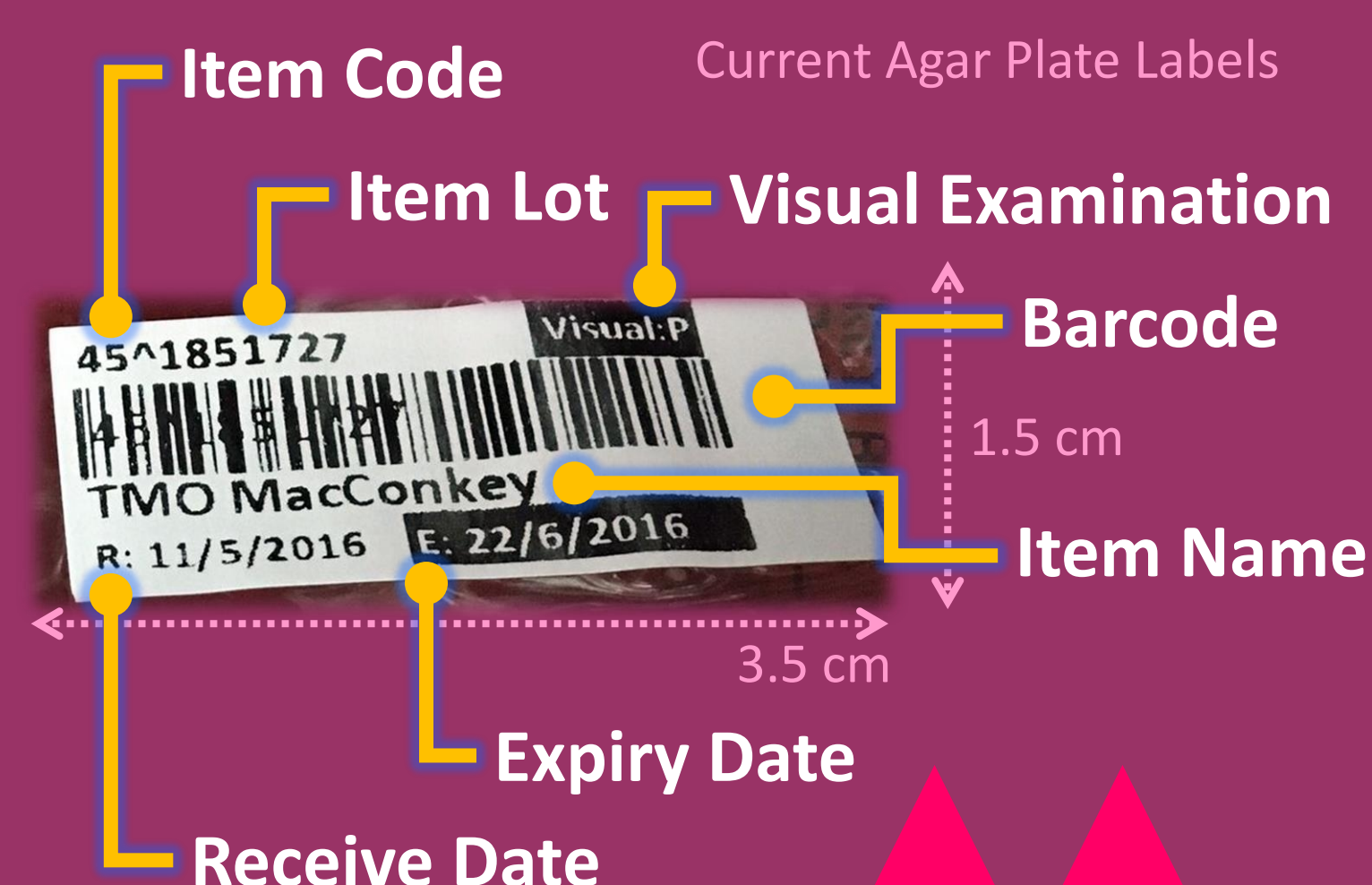
**Printer**  
(Agar Plate Label)



**Inventory System**

## Methods

The system is developed in-house based on available resources – Microsoft Access. It emphasises on user-friendliness. So, what is this system about?



**1. Add Item**  
- Label barcode generated when items are added

**2. Withdraw Item**  
- Simply scan label barcode

**3. Reprint Barcode Label**

**4. Check Expiring Items in 7 Days**

**5. Check Expired Items**  
- Auto-alert feature after login

Item_Name	Itemnoandlot	Exp_Date	Qty_Balance
BD BBL CDC Anaerobe 5% Sheep Blood Agar (KV)	34*6055576	28/05/16	6

**6. View Added Items**

**7. View Withdrawn Items**

**1**  
**Microsoft Access Database**

(Items are check-in and check-out using one system)

**306<sup>+</sup>**  
**Active Items in Database**

(As of 15 April 2016. The system is under amelioration and to be adopted by entire Department of Laboratory Medicine)

**Label<sup>n</sup>**  
**Barcoded Labels Printed**

(Upon receipt, barcoded labels are printed. The labels are pasted onto the item. Upon check-out, label will be scanned to update stock balance)

**10<sup>+</sup>**  
**Modules In Use**  
(From Add Item to Generate Transaction Report)

**8. View Inventory**

Lot	Exp_Date	Qty_Balance
6083518	21/06/16	3
6091978	01/07/16	20
6106534	13/07/16	20

**∞**  
**Development Possibilities**

(Modules developed using visual basic and SQL queries in Microsoft Access. Order report and microbiology QC modules currently under development)

## Results

**27**

**Transactions per day**  
(Average calculated from July 2015 to Mar 2016, including check-in & check-out)

**Decreased Manual Calculation Error**

**Reduced Stock Check Time**

**Increased Record Compliance**

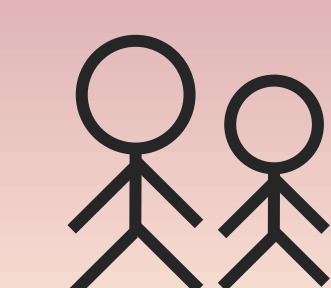
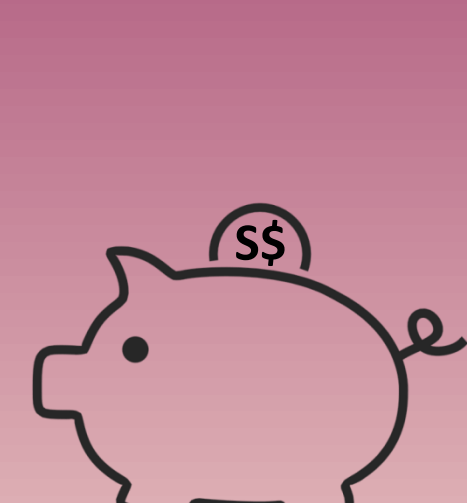
**Improved Management of Long lead time, Short expiry, Back order items**

## Conclusions

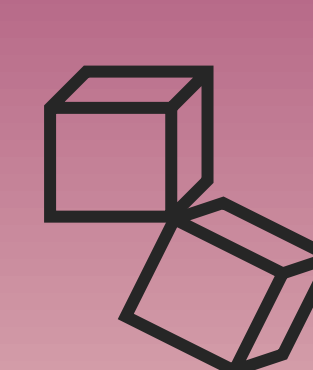
This innovation has been done using what we have – Microsoft Access, knowledge & agar plate labels, and transformed into something that we can use – Inventory system. Small materials, big solutions!

**Simple steps**  
(Check-in & Check-out)

What are the significant benefits of the system?



**LESS** wastage



**IMPROVE** stock management



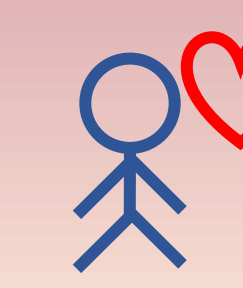
**ENHANCE** staff morale

**SAVE > S\$ 20,000 in procurement cost\***

\*Average minimum cost of commercial inventory system.

**REDUCE 180 man hours (\$5000) per year^**

^Based on department estimation.



**BETTER** patient care