

## 1. Problem Definition

The absence of defined inventory management systems (i.e. ordering, receiving, stocking) has caused inefficiencies at Dalhousie's C3LR. This has led to duplication of stock, low utilization of storage space, difficulty locating stock, and a lack of collaboration among faculties.

## 2. Project Scope

- Create collaborative storage space for all departments
- Use inventory models to reduce supply duplication, minimize stockouts, and maintain organization
- Create robust standard operating procedures for inventory management

## 3. Initial State

### Initial Inventory Storage Conditions

- Disorganized storage spaces with no specified location for consumables and assets
- Excess stock taking up space on shelves



Figure 1: Medicine Storage (C344)

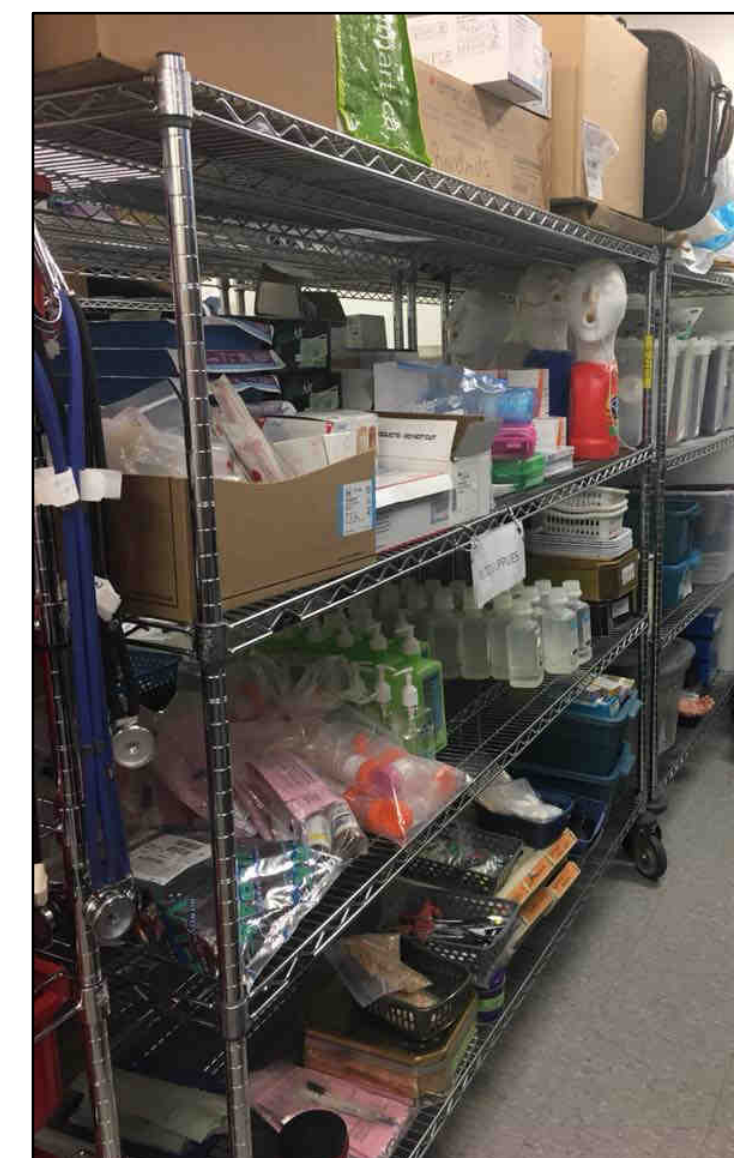


Figure 2: Nursing Storage (C372)

### Initial Storage Room Layout

- Layout in storage room C372 was not ideal; a number of racks were inaccessible
- One room dedicated to the nursing faculty, and one to the medicine faculty
- Minimal set-up space for staff



Figure 3: C372 Layout (Initial)

## 4. Methods and Test Phase

### Data Collection and Analysis

- No useful data on historical ordering or usage: data had to be collected
- Facilitated a kaizen event for “quick win” opportunities: low usage and throw away items

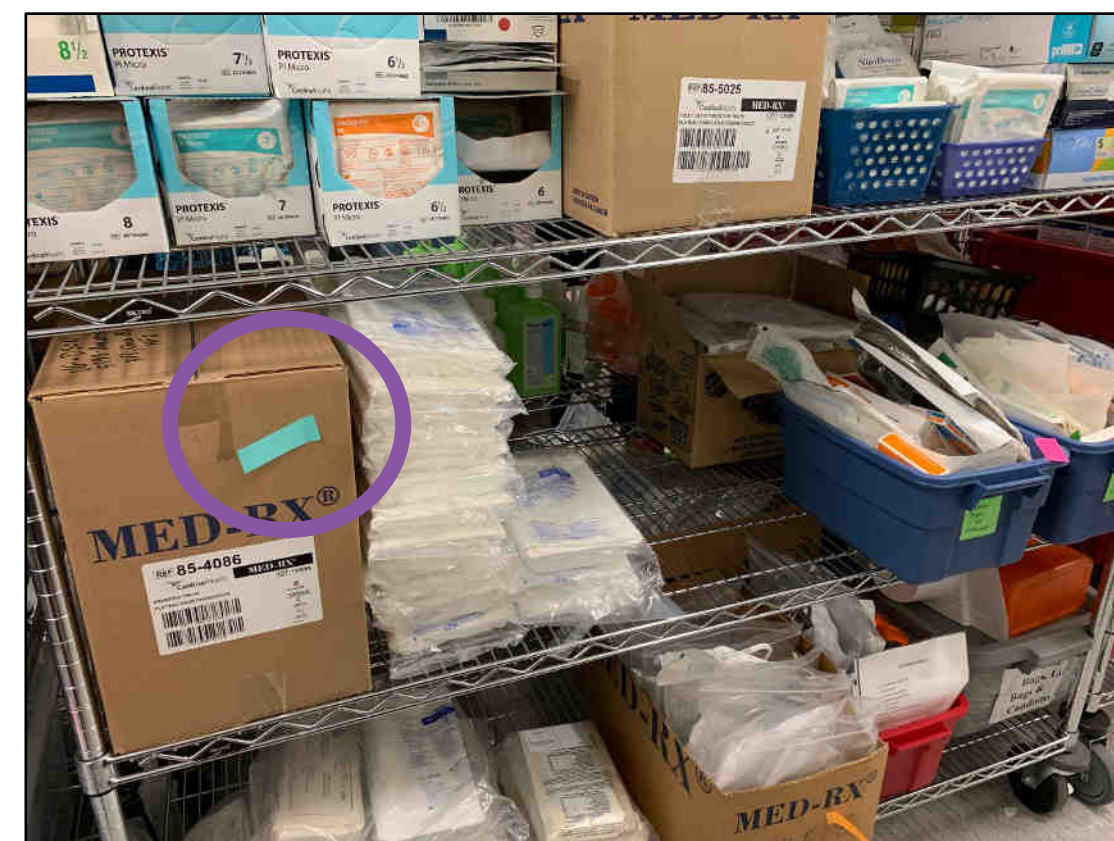


Figure 4: Kaizen event shows general usage

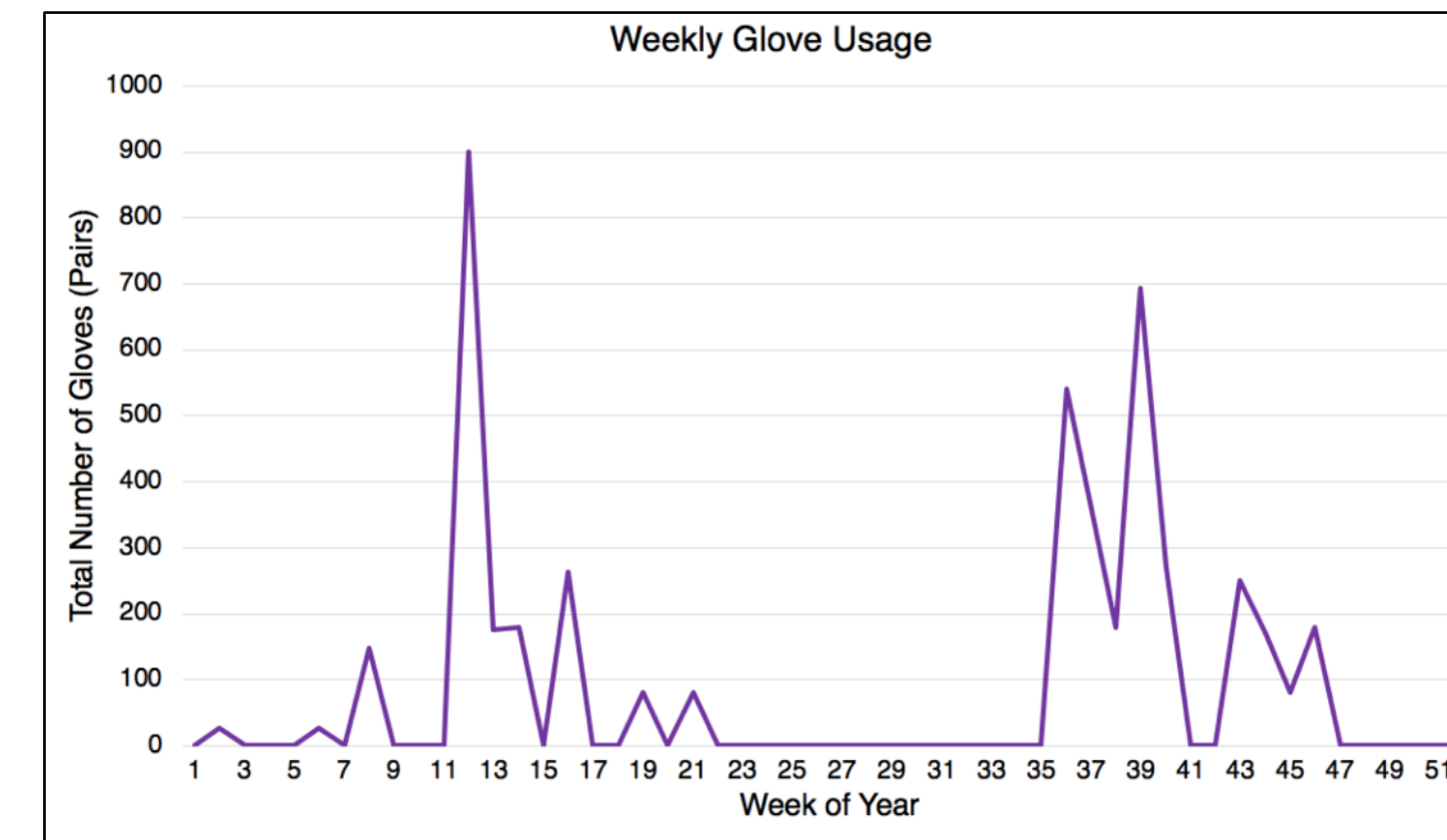


Figure 5: Irregular usage for gloves

- Interviewed “expert” staff members for program supply usage
- Calculated weekly usage levels: irregular and sporadic usage

### “Big Bin, Little Bin” and Schedule Inventory Plan

- Safety stock (weekly mode due to short lead time) in sealed bags with reorder card
- Scheduled ordering plan for rare usage items or abnormal order quantities



Figure 6: Step 1



Figure 7: Step 2

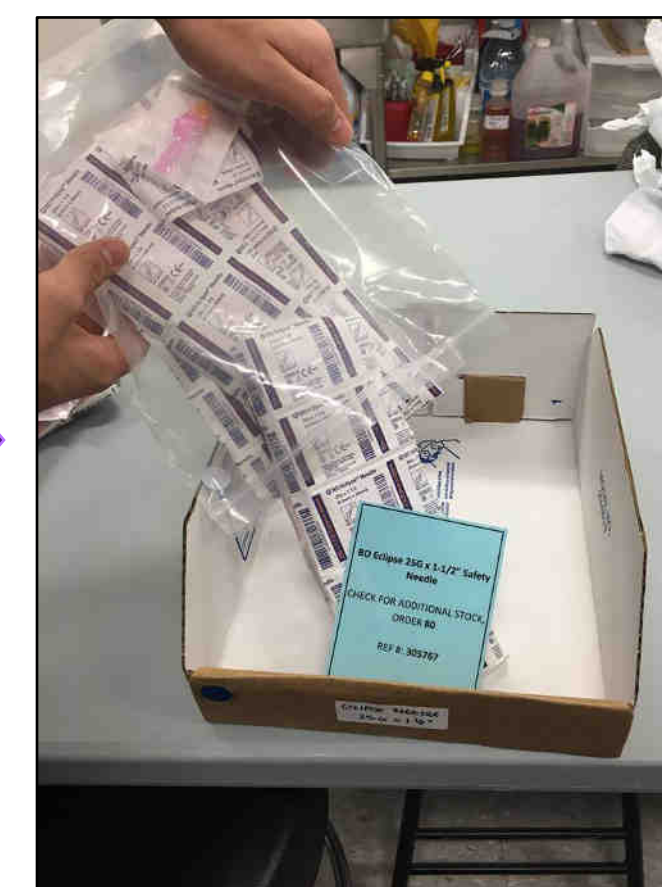


Figure 8: Step 3

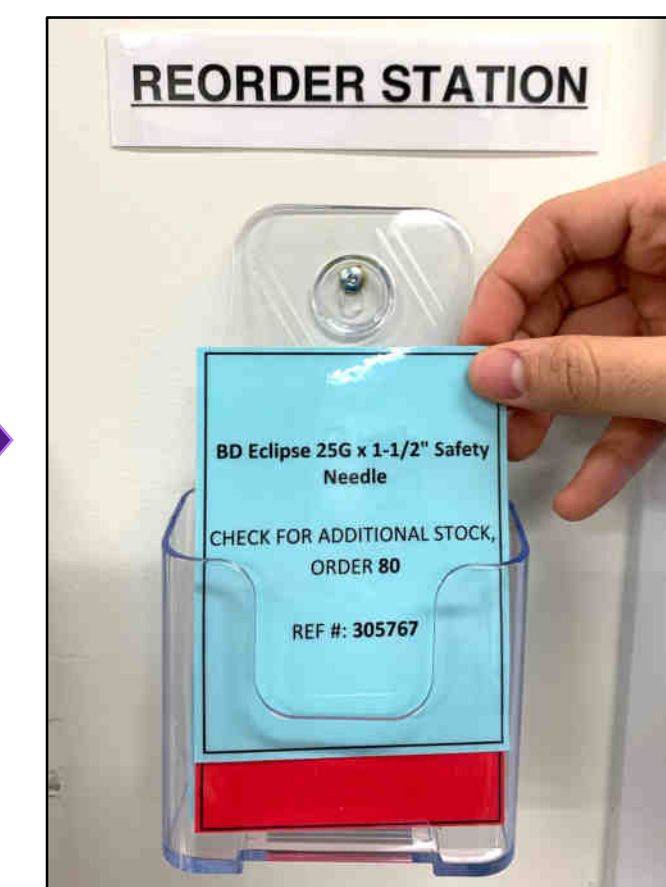


Figure 9: Step 4

**Step 1.** Safety stock sealed, use bin supply  
**Step 2.** Bin empty, utilize safety stock

**Step 3.** Empty safety stock to use, take card  
**Step 4.** Place card in the Reorder Station

## 5S and Lean Methodology

- Visual management to help staff maintain the solution
- Each bin has a location label and name label so staff know where to place the bin on a rack
- 5S Auditor will inspect the room once per week for reorders, tidiness, and bins out of place
- Test phase for final solution spanned one month, allowing for feedback from staff

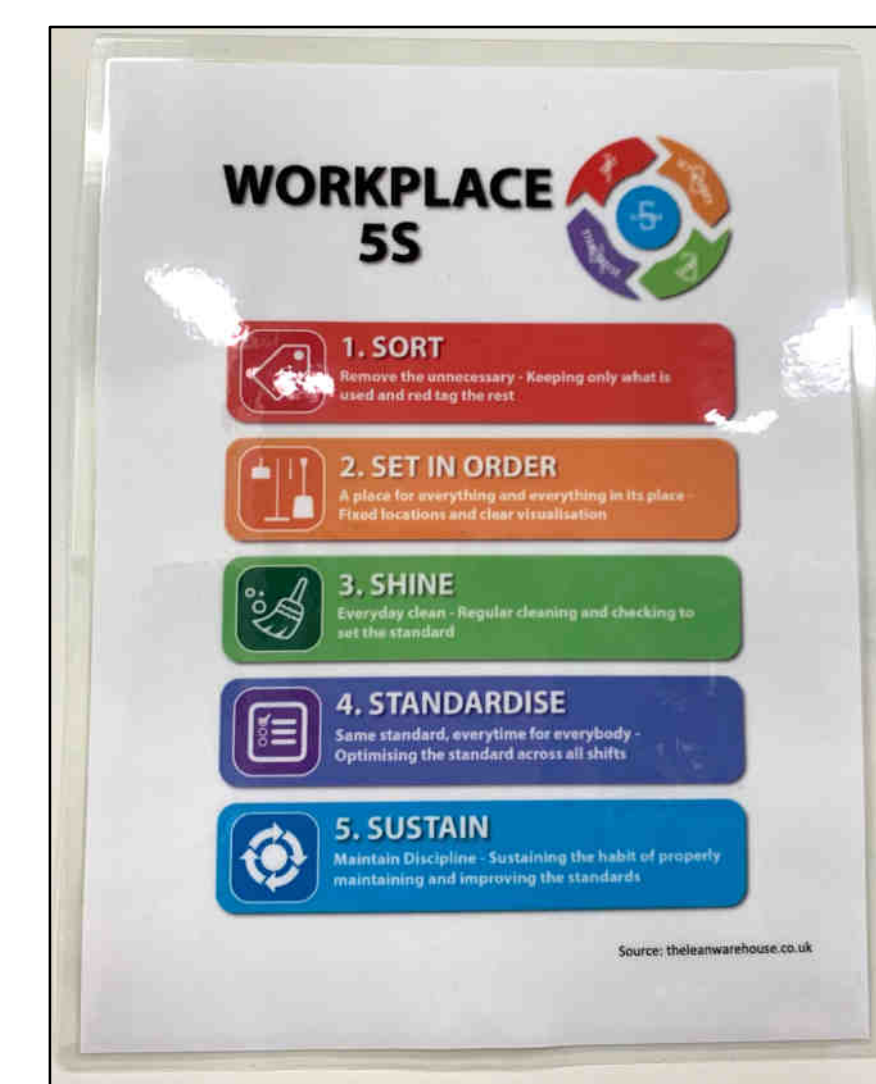


Figure 10: Workplace 5S poster



Figure 11: Location label aid



Figure 12: Labelled bin

## 5. Final Implementation

### Final Inventory Storage Conditions

- Critical feedback from staff during test phase
  - More detailed item names on bin labels
  - Rack dedicated to large program orders
- Family grouping of items, stratified by usage with fixed locator system

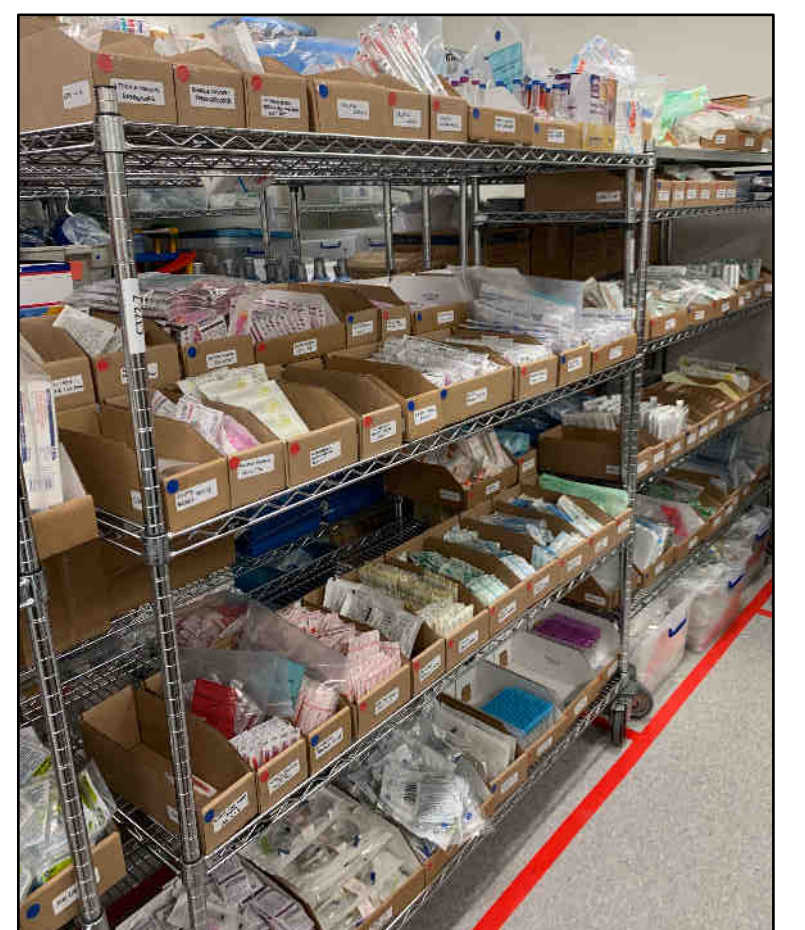


Figure 13: Consumable storage room (C372)

### Final Storage Room Layout

- Additional feedback from staff during test phase
  - Permanent set-up station required
- Room C372 is dedicated to consumables and smaller items, Room C344 holds mannikins, large assets and machines



Figure 14: Final layout of C372

## 6. Key Metrics and Results

- Positive changes to all key metrics
  - Average time to locate items for programs  
**18 sec/item → 13.8 sec/item**
  - Change in item duplication  
**52 items → 0 items**
  - Change in accessible shelf space  
**25.29 % increase in ft<sup>2</sup>**
  - Change in set up space  
**23.57 % increase in ft<sup>2</sup>**
- Collaborative space achieved; faculty supplies collocated
- Feedback from test phase was implemented and staff trained
- Robust standard operating procedures created for maintaining and updating the inventory system