Improving Medication Safety and Efficiency in managing Unissued Medications in In-patient Pharmacy --- Utilization of an Electronic Drug Checking System

Mr. Howard Tsoi
Clinical Pharmacist
Queen Mary Hospital
Inpatient Medication Order Entry (IPMOE) supports the identification of dosage modification and inactive prescriptions at the point of performing drug checking by Pharmacists, to reduce unnecessary drug supply to inpatients.

Result: Considerable volume of unissued medications that require to be returned to drug shelves

The unissued medications are currently manually counter-checked and returned by two Dispensers.

With the frequent return of look-alike and sound-alike medications and loose tablets or small blisters, potential risk of medication misplacement is incurred.
Methodology

- An **Electronic Drug Checking System utilizing barcode scanning technology** is employed to facilitate the process of returning unissued medication to drug shelves in In-patient Pharmacy.

**2D Barcode displayed on shelf label**
(Contains information on drug name, dosage form and strength)

**Unissued medications**

**Handheld Scanner**
Methodology

1. Unissued medications are collected in designated drug trays.

2. **Two Dispensers counter-check** the drugs against the dispensing labels to ensure the **right drug**.

3. **One Dispenser cross matches** the **2D barcodes** on the shelf label and dispensing label with a **handheld scanner**.

4. The returning of the **right drug** to the **right location** can be verified by a “**match**” signal.
Results and Outcomes

- Data Collection Period: October - November 2018

- Total of 3187 unissued injection and non-injection items returned to drug shelves (1396 injection, 1791 non-injection items).

- 99.6% accuracy of Dispensers in returning the unissued medications by the Electronic Drug Checking System.

- Average reduction of 4.1 man-hours per week in the returning process.
Conclusion

- The Electronic Drug Checking System is useful in **improving medication safety** in managing unissued medications in In-patient Pharmacy, and **improving the efficiency** for returning the unissued medications.

- Future application of the Electronic Drug Checking System in QMH Pharmacy
  - **Topping-up Drug Stock Replenishment in Wards**
  - **Drug Stock Replenishment in Inpatient & Outpatient Pharmacy**