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The impact on Unintended Medication Discrepancies detected by Clinical Pharmacists during Medication Reconciliation after the implementation of a computerized system, Inpatient Medication Order Entry (IPMOE) System

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Introduction
With the implementation of the computerized Inpatient Medication Order Entry (IPMOE) System in Queen Mary Hospital, the Pharmacist-led Medication Reconciliation (MedRec) process in Medical wards changes from Paper-based more towards Electronic-based. It is worth investigating the impact of the new IPMOE System on patient safety in terms of the Unintended Medication Discrepancies detected during MedRec by Clinical Pharmacists.

Objectives
(1)To investigate the impact of the IPMOE System on the percentage of incidence and the average number of Unintended Medication Discrepancies per patient detected by Clinical Pharmacists during the MedRec process
(2)To identify the types of discrepancies detected before and after the implementation of the IPMOE System

Methodology
A retrospective observational study was conducted in six Medical admission wards in Queen Mary Hospital across two phases: Pre- (December 2016) and Post- (December 2017) implementation of the IPMOE System. The data on the Unintended Medication Discrepancies detected by Clinical Pharmacists during the MedRec process in two phases was collected and compared.

Result
The percentage incidence of Unintended Medication Discrepancies detected by Clinical Pharmacists during MedRec decreased from 12.4% to 10.7% (p-value 0.107) post implementation of IPMOE. The average number of discrepancies per patient also decreased by 8.9%, from 0.236 to 0.215 per patient. For the types of discrepancies, after implementation of IPMOE, there was a significant decrease in proportion of

discrepancies related to wrong drug strength/dosage upon admission (14.5% vs 7.95%, p-value 0.024) and wrong treatment duration upon discharge (42.8% vs 21.9%, p-value <0.001). However, a significant increase in proportion of discrepancies related to unintentional prescribing of drug upon admission (13.3% vs 21.8%, p-value 0.017) and drug omission upon discharge (22.3% vs 36.7%, p-value 0.001) was detected.

Conclusion: The implementation of the computerized Inpatient Medication Order Entry (IPMOE) System resulted in a reduction in Unintended Medication Discrepancies being detected. However, a significant increase in proportion of discrepancies related to unintentional prescribing of drug upon admission and drug omission upon discharge was detected. Pharmacist-led MedRec is essential in identifying and rectifying the medication discrepancies to ensure patient safety and quality clinical service.