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IMPLEMENTATION OF BIN CODE LOCATION TO REDUCE PHARMACY NEAR MISSES IN BEDOK POLYCLINIC



BACKGROUND

A near miss is an error or incident that is detected and prevented before reaching the patient. If such an error is undetected and goes to the patient, it may potentially lead to an adverse drug event and cause harm to the patient.

RESULTS / DISCUSSION

SHP-Bedok is a fast-paced primary care polyclinic with a high patient load. The number of pharmacy near misses had escalated in June and July 2021 compared to earlier months in the same year. These near misses occurred during the picking stage of the drug preparation process. Possible causes are high patient workload, constant interruptions and staff fatigue.

Newly employed staff and relief staff from other polyclinics have difficulties locating and picking the medications due to drugs not being arranged according to their therapeutic indication in the pharmacy. In addition, staff who were familiar with the location of the drugs in the pharmacy tended to rely on memory to locate and pick medications to fill the prescriptions. However, mental fatigue could result in staff experiencing a lapse or slip in memory, thus picking the wrong drug, dosage form or strength and resulting in an error.

AIM

To reduce the number of near misses due to wrong drugs and wrong dosage forms/strengths during picking.

The pharmacy monthly near misses rates due to wrong drug and dosage forms/strengths were analyzed from 1st May 2021 to 31st October 2021.



* Total no. of wrong drug and dosage forms/strengths over total no. of items prescribed

METHODOLOGY

A bin coding system was identified as a possible solution to reduce the picking of wrong drugs and dosage forms/strengths. Each drug storage tray was assigned a unique bin address. See Figure 1.



Staff would pick drugs according to the bin code on each drug label, check drug picked against prescription and drug label before affixing drug label on the drug packet. Placement of fast-moving drugs was reviewed to facilitate efficient and accurate picking, before setting up of bin locations in the Pharmacy system. A Plan-Do-Study-Act (PDSA) cycle was carried out over 3 months, from 1st August 2021 to 31st October 2021.

• Prepare pharmacy

• Set up of bin location in

Overall near miss rates due to wrong drug and dosage forms or strengths saw an improvement after implementation of the bin coding system in Aug 2021. The near miss rate in Jul 2021 was 0.031% and subsequently fell to 0.029% in Aug 2021, 0.019% in Sep 2021 and 0.018% in Oct 2021. See Figure 2.





Near miss rates before and after implementation of the bin coding system were analyzed. Staff feedback was reviewed, and adjustments were made to bin locations where necessary, such as to place LASA(Look-Alike-Sound-Alike) drugs, physically similar-looking drugs and drugs with multiple strengths far apart.

Forms/Strengths No. of Wrong Drugs 12 8 - 3 7 9

There was greater improvement in the number of near misses due to wrong dosage forms/strengths compared to wrong drugs, following the implementation of bin code location in the pharmacy. Some possible reasons include staff misreading the bin code and picking from the wrong column and row, picking drugs based on muscle memory instead of bin location, or it could be due to the close proximity of bin locations for similar-looking medications due to a change in brand or packaging.

CONCLUSION

Implementation of the bin coding system has helped pharmacy staff to reduce reliance on memory to locate the correct drugs, and in doing so, reduce the number of near misses due to wrong drugs and dosage forms/strengths during picking at SHP-Bedok pharmacy.