Use of automated medication stations (Pyxis®) in Delivery Suite to help save time and improve inventory management

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Introduction

Automation is playing an ever increasing role in hospital operations. It could help to replace manual tasks and streamline processes, which would have the potential to improve efficiency in work processes.

Problems with existing manual medication carts

Nursing

- Nurses have to count four controlled drug (CD) cabinets during each shift change.
- Nurses have to look for specific colleagues holding the CD cabinet key with each CD removal for patient. This can be a challenge during high patient turnover periods as colleagues could be busy with patient care.

Pharmacy

- Pharmacy technicians need to count existing stocks before picking up new stocks to top up medication carts to par level.
- This is time consuming as pharmacy technicians would need to make several trips between pharmacy and delivery suite.

Drug security

- Manual medication carts may not be locked at all times, even though they are kept in locked rooms.
- Everyone in the ward can get access to drugs, without accountability.
- This may result in revenue loss for hospital.

Aim of project

- To demonstrate if there is time saved by both nursing and pharmacy staff for medicated related work processes
- To determine if there is any improvement in inventory management

Methodology

Selection

- Two automated medication stations were selected from Pyxis® based on user requirements.
- These stations remain locked unless users log in via biometric access. This allows any registered nurse to be witness for controlled drug removal.
- Pharmacy staff are able to know existing inventory in stations before topping up, through a scheduled inventory report.

Installation & Training

- Two stations were installed in delivery suite in August and training was provided to all users.

Data collection

- Weekly cycle count was conducted. Variances of top variance items were collected over a three month period (Sept-Dec 2015).
- This figure was compared to a similar time period in 2014.
- Verbal interview and email survey were done with pharmacy staff and nurse manager of Delivery Suite to find out time spent on medication related processes.

Results

Time spent on each CD removal for patient (mins)

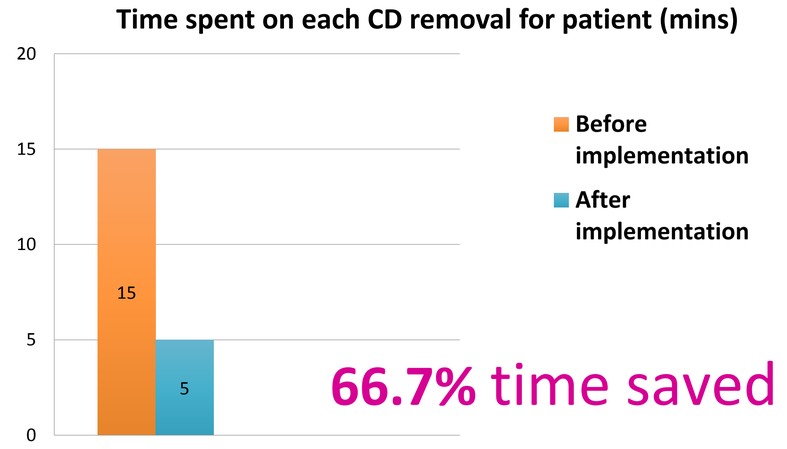

Fig 1

Time spent for complete cycle count of controlled drugs after each nursing shift (mins)

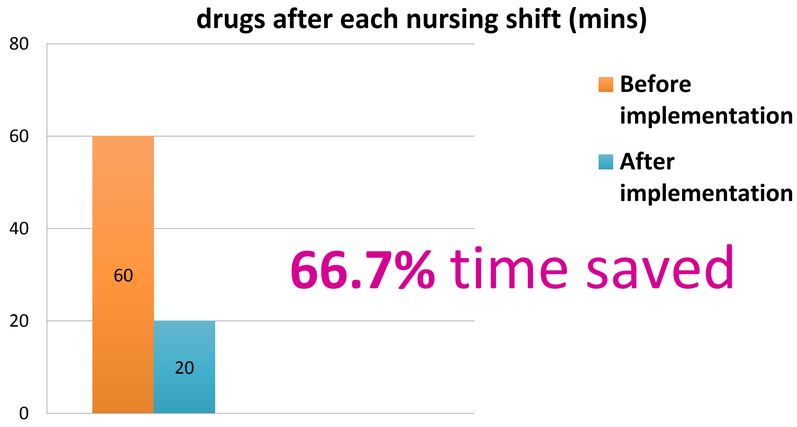

Fig 2

Time spent by pharmacy staff on topping up of medications (hours)

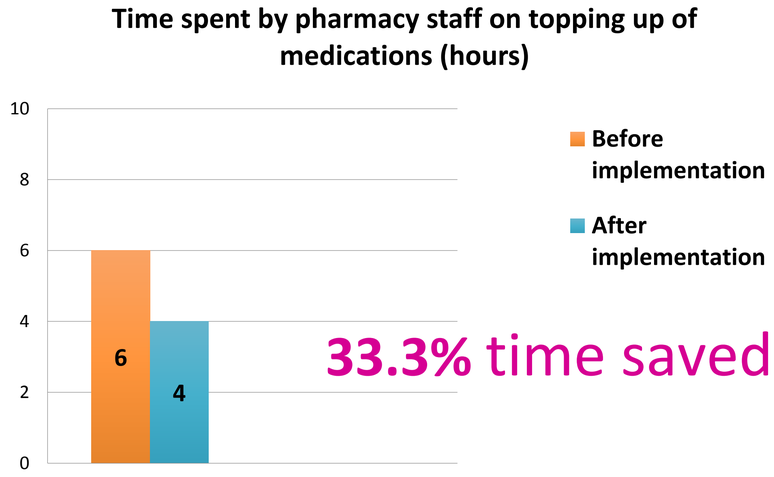

Fig 3

Variance of top 6 fast moving items ($)

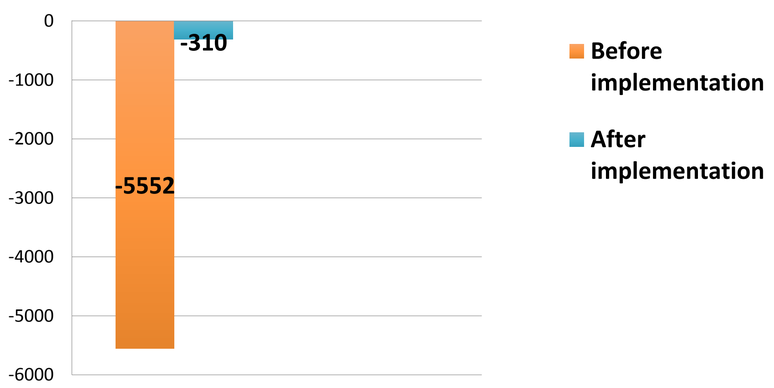

Fig 4

Conclusion

Results of this study show that use of automated medication cabinets helps to improve efficiency in medication related processes. Time saved on these processes could be put to use for patient care especially in an area like delivery suite with high patient turnover. Future studies could involve studying cost effectiveness of using automation in high turn over patient care areas.