One Stop Dispensing: Nursing staff's initial experience with barcode controlled bedside medication dispensing

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Background

The patient role is changing to include further patient involvement, control and empowerment. To accommodate this new patient profile in new Danish hospital construction projects, the medication system One-Stop Dispensing (OSD) will be tested. The OSD method involve medication stored in the patients' bedside lockers (fig. 2) and barcode controlled medication dispensing is performed with mobile dispensing units (MDU) (fig. 1). The OSD system is designed to optimize the medication process (fig. 3). This study presents the first Danish results on MDU.

Objectives

To evaluate nursing staff's initial experiences with barcode controlled bedside medication dispensing.

Methods

MDU was equipped with a laptop installed with the hospital's standard software for real time documentation and access to patient charts and Internet. A 2D barcode reader was connected for bar code verification in the medication dispensing and administration process. Nursing staff from the orthopedic surgery ward was trained for bedside dispensing using guided learning videos, peer-to-peer training and structured reviews of regional medication guidelines. A focus group interview was conducted with four nursing staff members with experience in drug dispensing. A semi-structured interview guide was applied and the interview was audio recorded, transcribed and thematically categorized through content analysis.

Results

Qualitative thematic analysis of the interview identified the following topics:

Hardware
+ Equipped for intended use
+ Suitable size
+ Carry-on medication for immediate drug administration
÷ Un-handy
÷ Unhygienic and sensitive cables
Software
+ Familiar to staff
+ Bedside access to charts
÷ Dual log-on necessary
Patient safety
+ Brings focus on the patient's overall condition and drug treatment
+ Immediate administration of urgent treatment
+ Low risk of medication mix-up errors
÷ Interruptions from patients and staff
Patient involvement
+ Easy access to drug information
+ Bedside setting improves patient involvement
Workflow
÷ Time consuming
÷ Change of work flow is a barrier for implementation
÷ Interruptions from patients and staff
÷ Patients' lockers were only updated with prescriptions during day time
÷ Difficult to access medication in patients' lockers,
÷ Dispensing unit was difficult to navigate in narrow surroundings

Conclusions

A focus group interview identified the following topics: Hardware, software, patient safety, patient involvement and workflow. Future studies should focus on optimizing of MDU design and implementation of the new dispensing practice in a larger scale.

Mobile dispensing unit (fig. 1) has integrated software for real-time documentation. Access to charts and Internet supports decision making and patient communication.

Bedside locker (fig. 2) containing patient specific medication to reduce medication mix-up errors.

Bedside dispensing using mobile dispensing unit (fig. 4) is a patient-centered approach to the medication process.

Fig. 1: Mobile dispensing unit

Fig. 2: Bedside locker with patient's medication

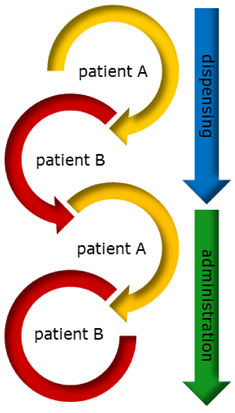

Fig. 3: Pre-intervention dispensing

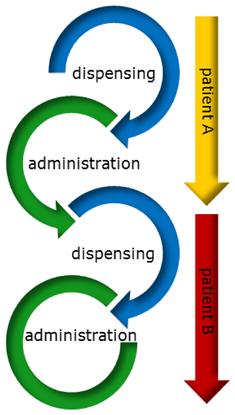

Fig. 4: Dispensing with mobile dispensing unit

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