

A PILOT STUDY ON HOW NURSES MANAGE DRUG SUBSTITUTION DUE TO DRUG CHANGES AND DISCREPANCIES BETWEEN PRESCRIPTION AND DRUG AVAILABILITY

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Background

Drug tenders and shortages result in drug changes and may lead to in discrepancies between prescriptions and drug availability. A high requirement for drug substitution (generic and therapeutic) may pose a potential patient safety risk and require nurses to use extra time on the medication process.

Aim

To study how drug substitution due to drug changes and discrepancies between prescription and drug availability is managed by nurses. A secondary aim is to document time spent by nurses to address these challenges.

Methods and Materials

The study was designed as a cross sectional survey. Data were collected from a pediatric (45 beds) and a medical department (33 beds) at a Danish public hospital. At both departments drug dispensing was done manually by nurses. All drugs were dispensed directly from the original package. A structured self reporting form was used for data collection. All nurses at the two wards were invited to register any problem requiring drug substitution together with a time estimate. Data were collected during May and June 2014.

Results

A total of 20 registrations were obtained from the pediatric department and 18 registrations from the medical department. Two registrations were excluded.

All registrations required drug substitution or other actions to be taken by the nurse before the drug could be dispensed and administered.



Figure 1. Photo from medication room.

Cause of challenges	Number of registrations
Drug tender	18
Drug shortage	3
Other reasons including physicians failing to prescribe within ward drug list	15

Table 1. The cause of each challenge were assessed and the registrations were categorized in three groups: drug tender, drug shortage or other reasons.

Nurses' strategies to manage challenges	Number of registrations
Other drug dispensed without new prescription	20
Contact to hospital pharmacy	5
Asked physician for new prescription	4
Contact to colleague	3
Obtained drug from other department	3
Other	1

Table 2. For each registration the nurses reported which action was taken before dispensing and administering the drug.

Patient safety

In two cases the challenges were associated with potential risk for patient safety:

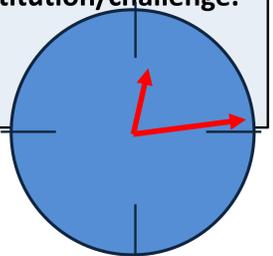
- Delayed or omitted administration of drug.
- Administration of wrong drug.



Time consumption to solve challenge

On average nurses used **7 minutes** (SD=9 min) to manage the substitution/challenge.

Two cases involved a non-registered drug. Both cases were reported to require 35 minutes to solve.



Conclusion

Nurses use different strategies to manage drug substitution.

Direct generic or therapeutic substitutions were the most common strategies.

In all cases nurses spend extra time managing the substitutions/challenges.

Improved implementation of drug changes and focus on correct prescription may indeed improve patient safety of the medication process and decrease time used for drug dispensing.