Comparison of pharmacist-led medication review at different stages during the inpatient stay

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Background

5-30% of all acute admissions are caused by medication-related problems, of which many are preventable.
In Denmark clinical pharmacists perform medication review both at admission and later in the inpatient stay, but no study has compared the clinical pharmacist interventions at different stages of the hospital journey.

Objectives

The aim of this study is to compare interventions from pharmacist-led medication review at admission and during hospital stay among elderly patients.

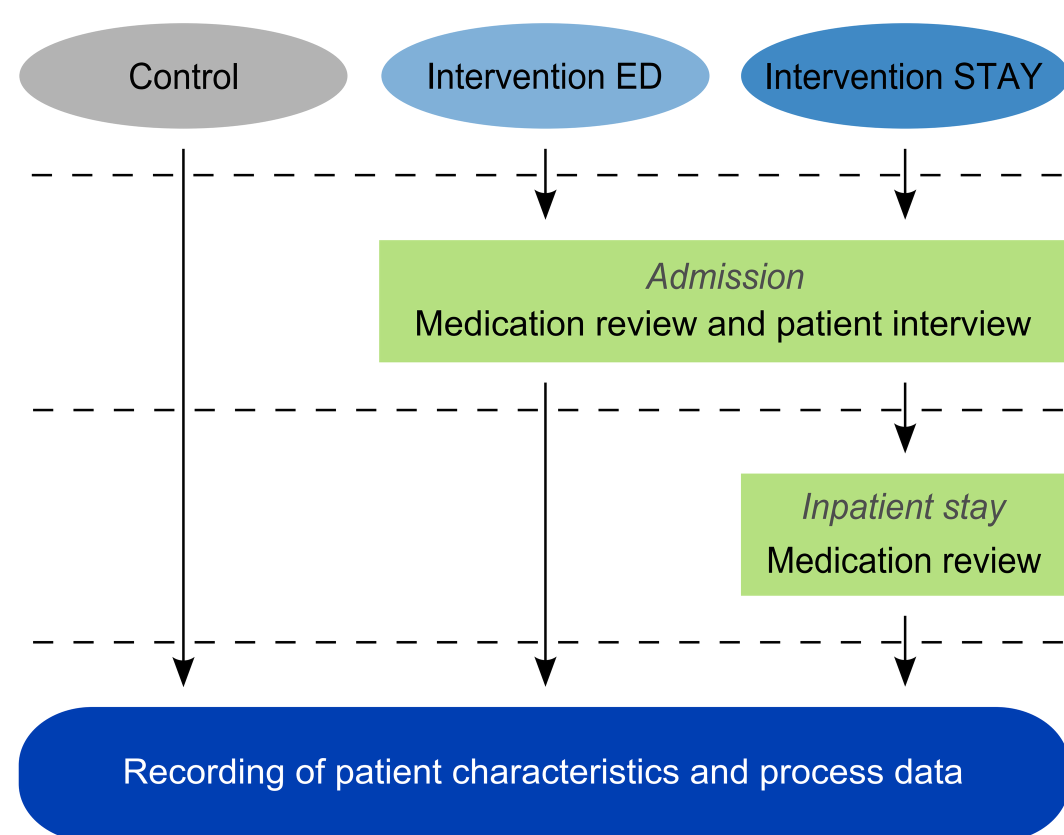


Figure 1:
Flow chart with the interventions in the study at the different stages of the hospital stay.

Methods

A randomized intervention study was performed from April to September 2013.

120 acutely admitted medical patients' ≥ 65 years of age were equally randomized to control, ED or STAY groups.

The control group received standard care, the ED group received medication review and patient interview at admission and the STAY group received medication review and patient interview at admission and medication review during hospital stay (see Figure 1).

Patient characteristics and process data for the interventions was recorded.

Variable		Included patients (n=120)
Age, years	mean (range)	76 (65-94)
Gender, %	male/female	51/49
Triage, %	2/3/4/5	5/40/55/0
Day of admission included, %	first/second	63/37
Medications at admission, number	mean (range)	7.6 (0-23)

Figure 2:
Description of variables for the 120 included patients.

Results

163 patients were invited to participate, whereof 43 patients declined. 120 patients with a mean age of 76 years, 51% male and an average of 7.6 medications were included.

On the emergency department, the pharmacist identified 162 medication-related problems in 73 of the 80 ED+STAY patients, used 28 minutes per identified problem and achieved an acceptance rate of 54%.

During inpatient stay medication review was performed for 16 of the 40 STAY patients, primarily because more than half of the patients were discharged directly from the emergency department.

The pharmacist identified 24 medication-related problems in 14 of the 16 STAY patients, used 18 minutes per identified problem and achieved an acceptance rate of 82%.

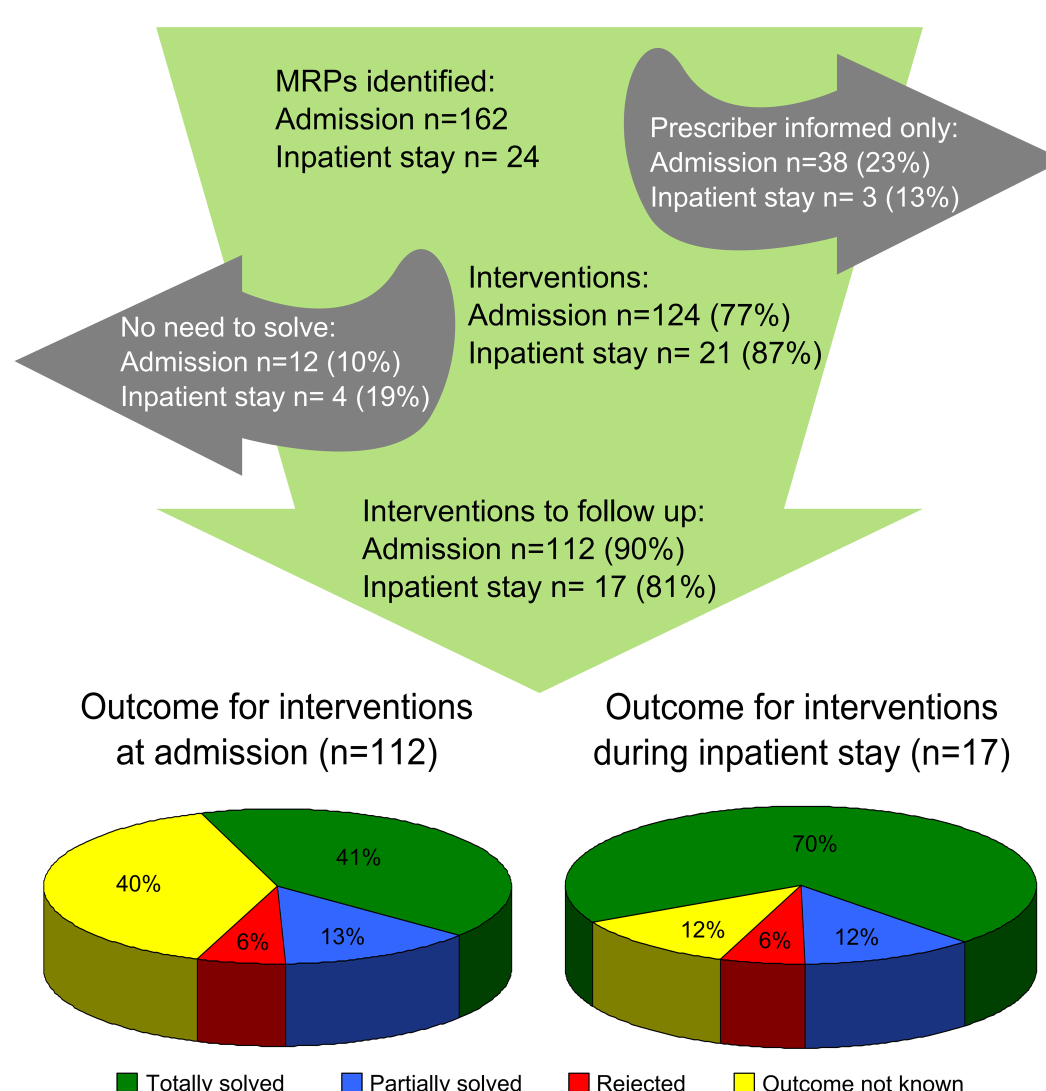
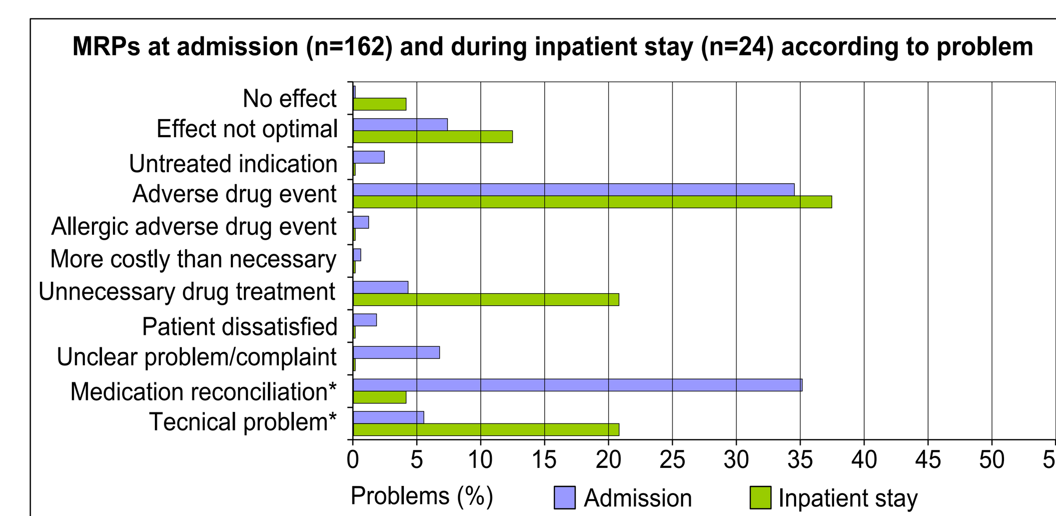
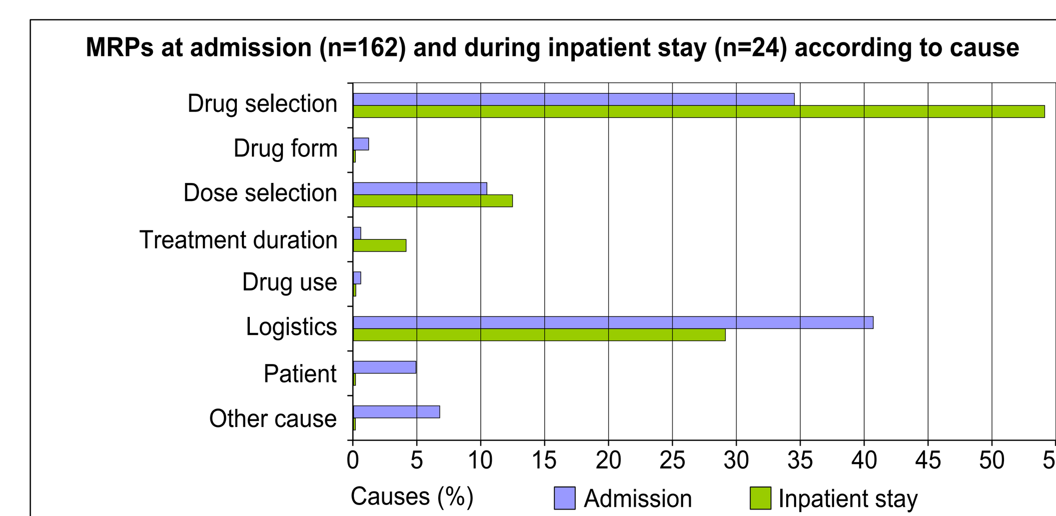


Figure 3:
Flow chart for medication-related problems (MRPs) and outcome at admission and during inpatient stay.

Conclusions

The findings indicate the importance of pharmacist-led medication review during the entire hospital journey, because even though medication-related problems were solved at admission, the main part of the patients presented new problems later in the inpatient stay.





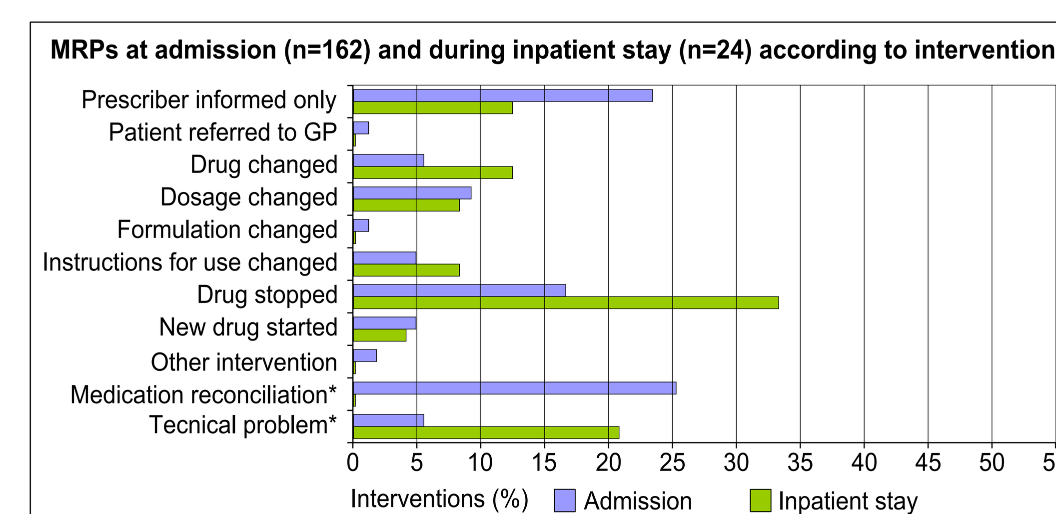


Figure 4:
Medication-related problems (MRPs) identified at admission and during inpatient stay classified according to problems, causes and interventions using The PCNE Classification V6.2. *adapted as new subdomains.*

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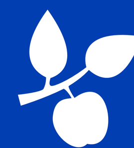

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