

Pharmacists' Optimization of the Medication Process During Admission to Hospital

A multicentre, randomized, controlled trial

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Do Clinical Pharmacists Reduce In-hospital ADEs?

Background

- Nearly 10% of all patients experience adverse events during admission to hospital.
- Almost 1/3 of the adverse events are related to medication, Adverse Drug Event (ADEs).
- Clinical pharmacy has proven to optimise the medication processes in-hospital.
- The effect of clinical pharmacy on in-hospital ADEs and drug costs has not been substantiated in randomised controlled trials.

Purpose

- To investigate the clinical effect of pharmacists' optimisation of the medication process during admission to hospital.

Methods

- Medical patients admitted to the acute wards aged ≥ 18 years and taking ≥ 4 types of medicine per day were eligible for inclusion.
- Intervention: medication history, medication review, medication reconciliation and entry of proposed prescriptions in the electronic medication system.
- Primary endpoint: Proportion of patients with ADE/harm, identified by screening the charts for 25 defined triggers from the Danish version of 'Global Trigger Tool'¹. Identified ADEs were then validated by two independent panels of clinicians blinded for the intervention.
- Secondary end points: Length of hospital stay, in-hospital drug costs, readmissions and death within one year of discharge. Spill-over effect tested by incorporating a retrospective control group.

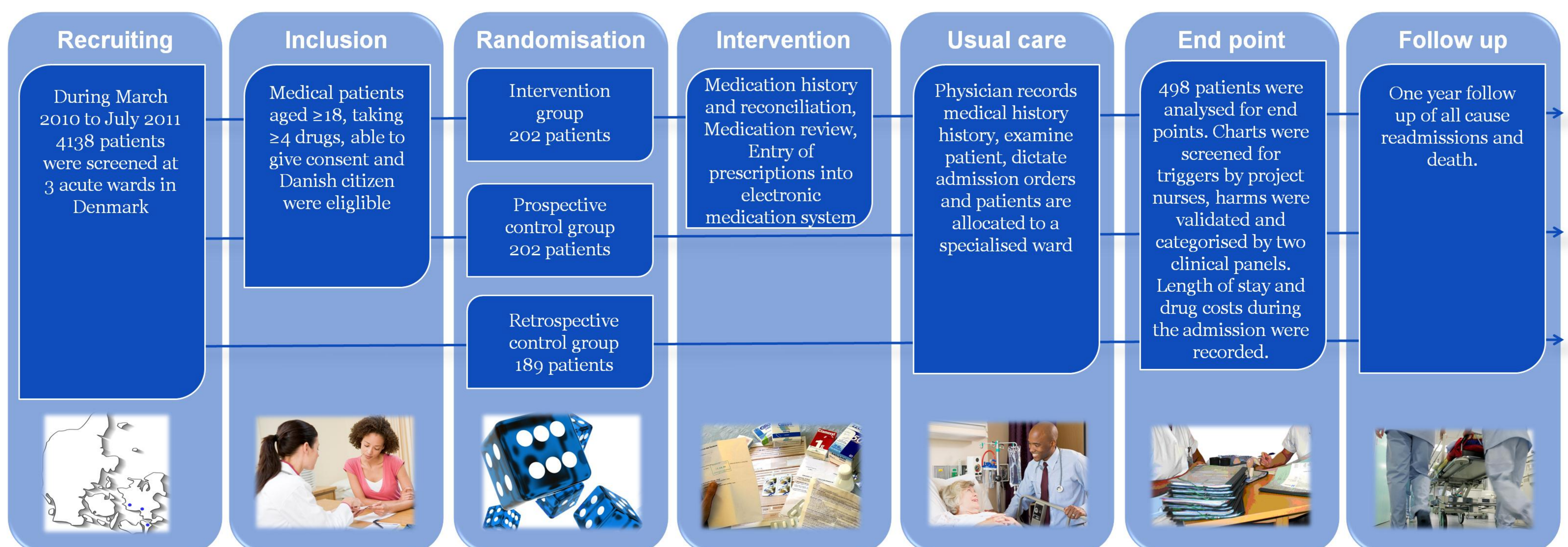
Results

	Intervention group	Control prospective	Control retrospective
Patients, n	158	152	188
Age (female)	74 (54%)	72 (46%)	73 (55%)
Prescriptions, median	8	8	7
Triggers/patient, mean (SD)	1.78 (± 1.87)	2.03 (± 2.58)	2.53 (± 3.35)
Harms/patient, mean (SD)	0.17 (± 0.68)	0.22 (± 0.70)	0.38 (± 1.01)
Patients with harm, n	17 (11%)	20 (13%)	39 (21%)
Length of stay, mean (SD)	5.9 (± 6.6)	6.8 (± 7.2)	6.7 (± 9.2)
Days to readmission	198 (± 158)	204 (± 152)	217 (± 155)
Death within 1 year	22%	21%	33%
Drug costs/day, mean	€ 5.20	€ 7.81	-

Conclusion

None of the findings reached statistical significance. However, the clinical pharmacist's intervention tended to have a positive effect in terms of:

- Less triggers and ADEs per patient
- Shorter length of stay and lower drug costs
- The proportion of patients with in-hospital ADEs were reduced.



¹Classen DC, Lloyd RC, Provost L, Griffin FA, Resar R. Development and Evaluation of the Institute for Healthcare Improvement Global Trigger Tool. *Journal of Patient Safety* 2008;4(3).

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