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# Identified drug-related problems and actions taken to solve them –

Intervention delivery within a clinical trial on comprehensive medication reviews in older hospitalised patients

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# Impact of Medication Reconciliation and Review on Clinical Outcomes

## META-ANALYSIS Do pharmacist-led medication reviews in hospitals help reduce morbidity and mortality?

Annals of Pharmacotherapy  
48(10) 1298-1312  
2014

Br J Clin Pharmacol

How were medication reviews defined?  
How were these interventions delivered?

### medication review on health outcomes: a systematic review

Corinne M. Hohl,<sup>1,2</sup> Marco L. A. Perry,<sup>4,5</sup> Penny Brasher,<sup>2,12</sup> Mary M. Brian H. Rowe,<sup>9</sup> Joel Lexch

Open Access  
BMJ Open  
Effect of medication review on patient safety and health



**Cochrane Library**  
Cochrane Database of Systematic Reviews

**Medication review in hospitalised patients to reduce morbidity and mortality (Review)**

Christensen M, Lundh A

Received 15 Sept  
Accepted 4 Jan

Alemayehu B Mekonnen,<sup>1,2</sup> Andrew J McLachlan,<sup>1,3</sup> Jo-anne E Brien<sup>1,4</sup>

## Medication Reviews by Clinical Pharmacists at Hospitals Lead to Improved Patient Outcomes: A Systematic Review

# Content

- Background
  - MedBridge trial
  - Process evaluation → Intervention delivery
- Aim of this study
- Methods
- Results
- Discussion and conclusion



# Background:

## MedBridge trial [Kempen et al. 2017]

### Aim:

To study the effects of...

- hospital-initiated comprehensive medication reviews (CMRs) incl. post-discharge follow-up
- solely hospital-based CMRs
- usual care (control)

...on older patients' healthcare utilisation

→ results expected in 2020



# Background:

## MedBridge CMR: pharmacist-led

- Medication reconciliation with patient upon hospital admission:
  - Identify **discrepancies** in medication list
- Medication review in relation to patient information and electronic health record:
  - Identify **drug-related problems** (DRPs)
- Discussion with ward physician and patient:
  - Correct discrepancies
  - Propose and implement **actions to solve DRPs**



# Background:

## Process evaluation

- Trials of complex interventions often criticized  
→ How to interpret the trial's results?
- Process evaluation recommended [Moore et al. 2015]

E.g.:

- Did all participants receive the intended interventions?
- How were the interventions delivered?



# Aim of this study

- To assess the *intervention delivery* within the MedBridge trial, in terms of...
  - number and types of identified medication discrepancies, DRPs and actions to solve DRPs within the CMRs



# Methods: Setting

- Setting:
  - 8 wards, 4 hospitals





# Methods:

## Population and exposure

- Inclusion criteria:
  - $\geq 65$  years old, admitted to study ward
- Exclusion criteria:
  - CMR  $< 30$  days, palliative care, one-day admission, not residing in region

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- Intervention 1 (n=922): CMR during hospital stay
- Intervention 2 (n=823): CMR during hospital stay + post-discharge follow-up
- Control (n=892): Usual care



# Methods:

## Data collection

- Retrospective assessment of electronic health record: written notes, medication list
  - Identified discrepancies → corrected?
  - Identified DRPs
  - Proposed actions to solve DRPs → implemented?
- Classification
  - DRPs: Hepler & Strand [Strand et al. 1990]
  - Proposed actions: SFPC [Allen et al. 2006]



# Methods:

## Data analysis

- Descriptive statistics



# Results:

## Baseline characteristics

- Characteristics of included patients (n=581):

Age, median years (range)	81 (65-103)
Gender, % female	53%
Medications*, median (range)	9 (0-32)

\*prescribed, incl. "as required"



# Results:

## Medication discrepancies

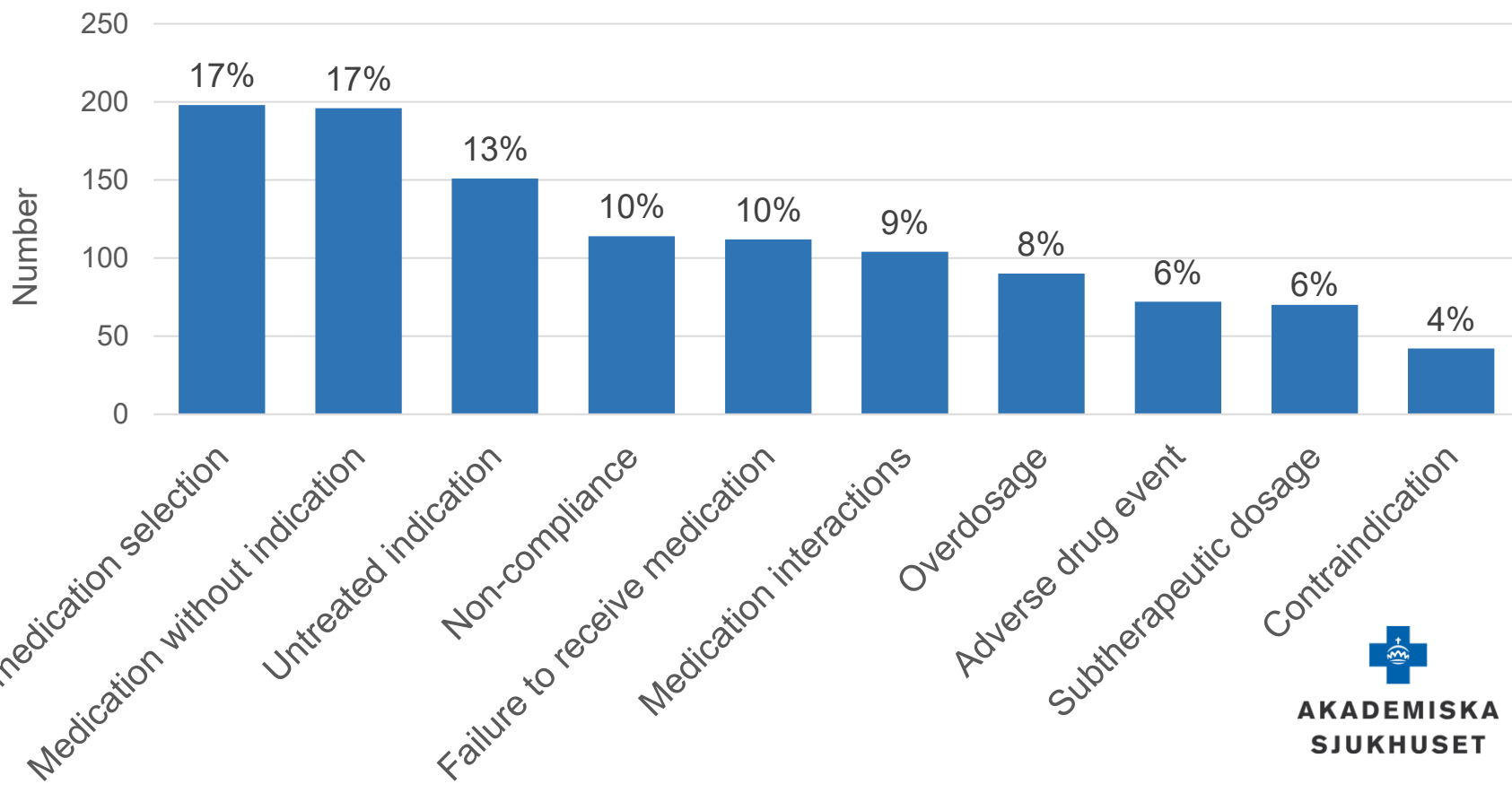
- 1.1 (range 0-12) discrepancies per patient (n=581)
- 50% at least one discrepancy
- 77% corrected



# Results:

## Drug-related problems (DRPs)

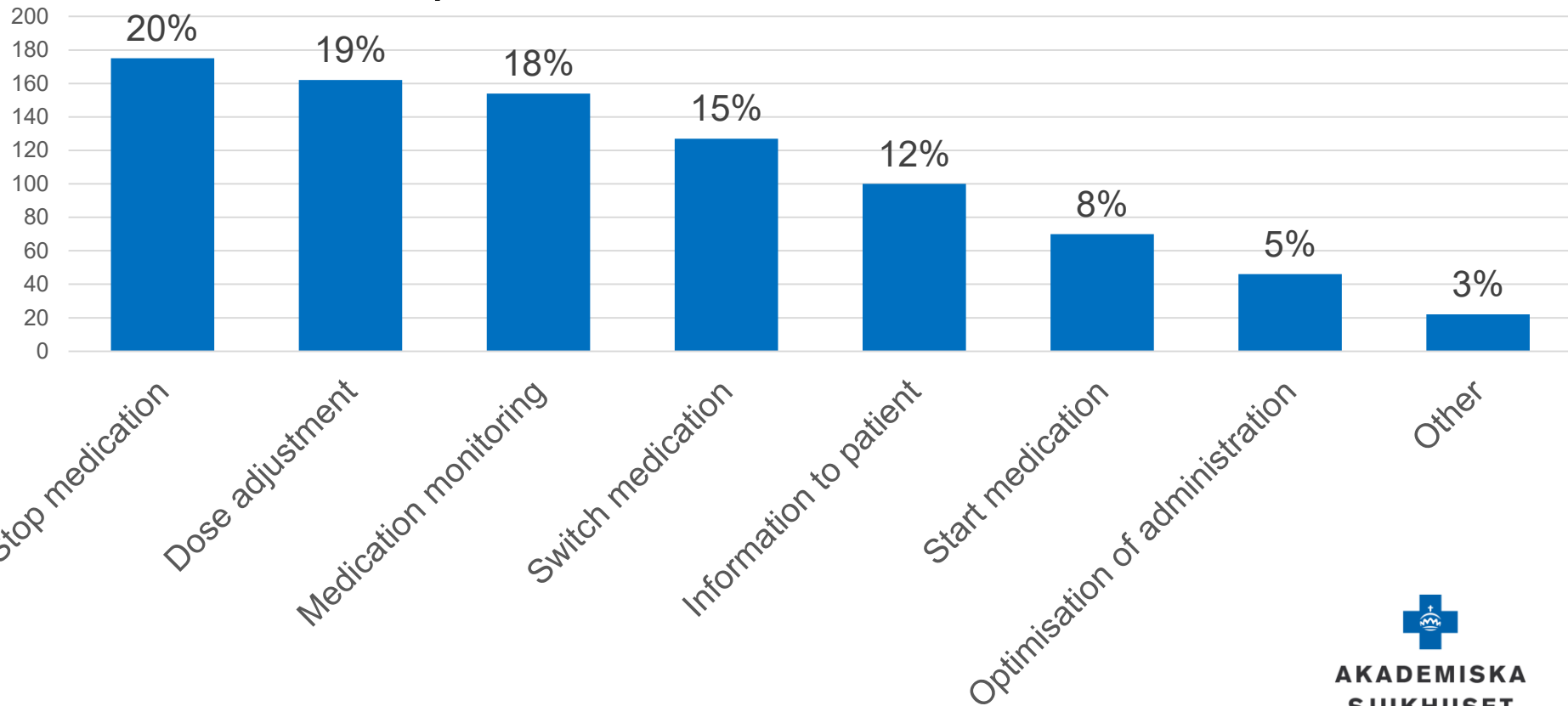
- 2.0 (range 0-10) DRPs per patient (n=581)
- 75% at least one DRP



# Results:

## Actions to solve DRPs

- 2.1 (range 0-11) proposed actions per patient (n=581)
- 72% implemented



■ Implemented actions

## Discussion:

- Large variation in identified discrepancies (3.4-97% of patients) and DRPs (0.1-11/patient) in literature [Graabaek et al. 2013, Lehnбом et al. 2014, Jokanovic et al. 2017]
  - 1.1 discrepancies + 2.0 DRPs similar to many studies
  - 72-77% implementation rate seems good
- Clinical relevance and follow-up unclear

## Conclusion:

- The CMRs within the MedBridge trial have been well-delivered





# Thank you for listening!

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## Collaborating institutions:



# References

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