Medication Reviews Bridging Healthcare (MedBridge) Study protocol for a cluster-randomised controlled trial

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Background
Mismanaged medication prescribing and use among elderly puts major pressure on current healthcare systems. Performing a medication review, a structured, critical examination of the patient’s medications, during hospital stay with active follow-up into primary care could optimise treatment benefit and minimise harm. However, a lack of high quality evidence inhibits widespread implementation. Here we present the rationale, design and preliminary results of a cluster-randomised, crossover trial (the MedBridge study) to fulfill this need for evidence.

Purpose
This study aims to assess the effectiveness of hospital-initiated comprehensive medication reviews, including active follow-up, on elderly patients compared to solely hospital based reviews and usual care.

Methods
Design: Multicentre, three-treatment, cluster-randomised, crossover trial.
Setting: Eight wards with a multidisciplinary team within four hospitals in three Swedish regions.
Participants: Patients aged 65 years or older, admitted to one of the study wards. Exclusion criteria: Palliative stage; residing in other than the three regions; medication review within the last 30 days; one-day admission. See Fig. 1.
Interventions:
1. Comprehensive medication review during hospital stay;
2. Same as 1. with the addition of active follow-up into primary care;
3. Usual care.
Primary outcome measure: Incidence of unplanned hospital visits after 12 months.
Data collection and analyses: Extraction and collection from the counties’ medical record systems into a GCP compliant electronic data capture system. Intention-treat analyses using general estimating equation techniques and frailty models, using SAS or R.

Preliminary results
The intervention and control periods were randomly allocated as shown in Fig. 2. Within the first study period (month number 1 and 2), in total 257 patients met the inclusion criteria, of which 236 (92%) provided informed consent: 126 in Uppsala and 110 in Gävle. All but two patients in the intervention groups (113 out of 115) received a comprehensive medication review during hospital stay.

Conclusion
The MedBridge study, in which the effectiveness of hospital-initiated comprehensive medication reviews, including active follow-up, on elderly patients will be assessed, is currently progressing according to plan.

In the end, this study has a high potential to show a reduction in elderly patients’ healthcare utilisation, contributing to more sustainable healthcare in the long run.

Fig. 1: Participant flow from an individual patient perspective including expected number of included patients. Med. rec. = medication reconciliation

Fig. 2: Chart with the result of the block randomisation based on six periods of eight weeks per ward.

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