

# A protocol for a cost-utility study on medication reviews to elderly polypharmacy patients at the community pharmacy

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**Background** Polypharmacy is increasing in a growing elderly population. One way to assess the quality of the medication is to perform medication reviews, which can result in better compliance, patient safety and a more rational pharmacotherapy. However, attempts to evaluate the economic impact of medication reviews have so far lacked conclusive results.

**Purpose** To investigate the economic impact of medication reviews of elderly polypharmacy patients at the community pharmacy, from a health-care point of view.

**Method** In the Southern Region of Denmark 50 pharmacists were recruited from 28 community pharmacies. Each pharmacist completes 20 medication reviews over a period of six months (Sep 2016 ? Feb 2017); in total 1000 medication reviews. Inclusion criteria were patients 65 years or older; receiving 5 or more prescribed medications; living in their own home and capable of administering medicines themselves. The community pharmacists enter data on each review into a central study database. Patients complete the EQ-5D questionnaire at the pharmacy before and 6 months after the medication review. Data on the following outcome measures will be extracted from the study database: number and type of medication-related problems, rational use of medicines, feedback from general practitioners on implementation of pharmacist recommendations, and quality of life. Data on the following outcome measures will be extracted from national health-care registers after 12 month of follow-up: public expenses related to prescribed medicines, number of admissions/contacts to hospital/emergency room/general practitioners and public expenses related to such contacts, and mortality. A register-based control group of 4000 persons will be generated based on the remaining four regions of Denmark using propensity score matching. The extracted data will be used for process evaluation of the medication review service at the pharmacies and for the overall cost-utility study.

**Findings** To date 204 medication reviews have been conducted and a further 124 are scheduled. Data analysis will take place 2017-2018 and the final report will be published by the end of 2018.

**Conclusion** The economic impact on health care costs and patients' quality of life are very important factors in obtaining government funding for medication reviews delivered from community pharmacies. Data and results from the above study will generate some of the evidence needed to make a valid assessment by policy makers.