A protocol for a cost-utility study on medication reviews

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Why a cost-utility study?

Medication reviews

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showing an increase in hospital admissions. Robust health economic studies of medication reviews remain rare. However a review of cost-effectiveness analyses of medication reviews found no studies in which the cost of the intervention was greater than the benefit.

Cost-Utility Analysis of a Medication Review with Follow-Up Service for Older Adults with Polypharmacy in Community Pharmacies in Spain: The conSIGUE Program

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Conclusion The MRF service is an effective intervention for optimizing prescribed medication and improving quality of life in older adults with polypharmacy in community pharmacies. The results from the cost-utility analysis suggest that the MRF service is cost effective.
Study design

Prospective controlled intervention study with 3, 6, 9 and 12-month follow-up time.

Each intervention patient will be matched 1:4 with control cases identified from the four regions of Denmark using propensity score matching.

Intervention group recruited from the Region of Southern Denmark.

Danish College of Pharmacy Practice
Study setting

- 22 municipalities participating
- 1000 patients
- Medication reviews were conducted Sep 2016 – Feb 2017
- Medication review data and data on Health Related Quality of Life (EQ-5d) registered by participating pharmacies

Patient inclusion criteria:

- 65 years or older
- Using 5 or more prescribed medications
- Community dwelling elderly
- Not receiving any council assisted medication care at home
Intervention

• Medication review
• Protocol from the Association of Danish Pharmacies was applied by certified pharmacists
• Type 2A (PCNE)
• Delivered by community pharmacy in private consultation area
• Identified Drug Related Problems (DRP) will be referred to the general practitioner

„Intermediate“
Type 2a) Medication history + patient interview
- MUR, Polymedication-Check
- „Brown Bag“-Method

<table>
<thead>
<tr>
<th>Medication history</th>
<th>Patient</th>
<th>Clinical data</th>
<th>Information source</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Messerli 2013
## Outcome measures

<table>
<thead>
<tr>
<th>Outcome measures</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs related to visits to general practitioner</td>
<td>Danish National Health Service Register</td>
</tr>
<tr>
<td>Costs related to visits to accident &amp; emergency departments</td>
<td>Danish National Health Service Register</td>
</tr>
<tr>
<td>Costs related to hospital admissions*</td>
<td>Danish National Health Service Register</td>
</tr>
<tr>
<td>Time spent on medication review</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>Health Related Quality of Life (EQ-5d)</td>
<td>Pharmacy</td>
</tr>
<tr>
<td>Number, type and cost of medicine used</td>
<td>Register of Medicinal Product Statistics</td>
</tr>
</tbody>
</table>

### Additional points of study:
- Implementation
- Process outcomes
- Patient satisfaction
Study timeline

Study phases
- Study planning
- Implementation support
- Data analysis
- Dissemination of results

Data flow
- Medication review data
- HRQoL baseline data
- HRQoL follow-up data
- Data from Danish National Health Service Register
- Register of Medicinal Product Statistics
### Preliminary descriptive data (n=572)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Age (average years)</th>
<th>Medicines (average no)</th>
<th>Medical conditions (average no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>276</td>
<td>76.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Men</td>
<td>296</td>
<td>75.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total/average</td>
<td>572</td>
<td>75.5</td>
<td>9.0</td>
<td>3.4</td>
</tr>
</tbody>
</table>
Future implications

Results from this cost-utility study will generate some of the evidence needed to make a valid assessment by policymakers for the support of government-funded medication reviews of elderly patients at community pharmacies.

Acknowledgement

• The Danish Ministry of Health
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• Participating pharmacies in Southern Region of Denmark