Accidental falls in elderly
A systematic review of the cost-effectiveness of preventive measures and an economic analysis

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Brief topic overview

- Accidental falls is a big escalating public health problem – because people’s increasing length of life leads to an increasing exposure to risky situations in fragile people
- Subsequent injuries reduces quality of life and incurs great costs for society
- Many falls and related injuries can be avoided by preventative interventions
Outline

• How big is the problem?
• How much does it cost?
• Which interventions are cost-effective?
• What can be gained by implementing cost-effective interventions?
• Summary

How big is the problem?
Falls and subsequent injuries are a major cause of immobility, morbidity and mortality

Number of deaths and fractures due to falls per million inhabitants and year

- 4778
- 152

Deaths
Fractures
How big is the problem?

- In Sweden, more than **three times as many elderly dies** due to falls compared with all traffic deaths each year
- **Escalating** public health problem – demographic changes
How much does it cost?

Different costs

Other

Direct

QoL

Production loss*

Health care

* If health care system accepts this calculation – ethical guidelines

Quality of life, QALY:s

Quality Adjusted Life Years

- QALY:s is a measure that encompasses both life years and quality of life, and thus takes both measures into account
What is the value of a QALY?

- Difficult to value but important – one scale makes it easier to compare between interventions
- Varies between method of measurement and between countries
- In a Swedish context others have argued for a value of about 88 000 $/QALY*

* Borgström et al and Persson et al.

How much does it cost?

<table>
<thead>
<tr>
<th></th>
<th>Direct costs, millions $/10 million</th>
<th>Cost of deterioration in quality of life</th>
<th>Percentage of total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities</td>
<td>10</td>
<td>630*</td>
<td>31 %</td>
</tr>
<tr>
<td>Serious injuries</td>
<td>690</td>
<td>690</td>
<td>68 %</td>
</tr>
<tr>
<td>Minor injuries</td>
<td>30</td>
<td>0</td>
<td>1 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>720</strong></td>
<td><strong>1 330</strong></td>
<td><strong>2 050</strong></td>
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</tbody>
</table>

*Discounted by 3%
Which interventions are cost-effective?

- A systematic review of reviews was conducted to search for evidence of the cost-effectiveness of fall prevention interventions
- Only reviews, meta-analyses and clinical guidelines were eligible for inclusion to get an overview
- Only found one – a NICE report
### Which interventions are cost-effective?

- In general, interventions targeted towards high-risk individuals seems to show better cost-effectiveness.
- That may seem obvious but it could be the case that identifying high-risk individuals is more costly than the gain.
Which interventions are cost-effective?

- Difficult to say – we need to know how much a prevented fall is worth
- Depends on probabilities of death and different injuries
- Lack of evidence – only a few studies with limited information

What can be gained by implementing cost-effective interventions?

- Obviously, health care costs could be saved and deterioration in quality of life could be avoided
- More health for the same amount
Summary

- Big escalating public health problem
- Scarce resources – important with cost-effective interventions
- Evidence of effective interventions exist. However, evidence of the cost-effectiveness of interventions is limited
- Modelling could be a way forward

Thank you for your attention!

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