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Cost effectiveness of impact absorbent flooring in reducing fractures among institutionalized elderly

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Executive Summary

- The rate of falls and subsequent injuries among the elderly in institutional care is on the rise, and results in significant health resource use. Some injuries can be prevented by the use of external hip protectors or by impact absorbent flooring.
- The purpose of this report is to assess the cost-effectiveness and cost-utility of two strategies for preventing injuries in residential facilities – provision of hip protectors to elderly residents or installing impact absorbent flooring in the facilities.
- A decision tree model was constructed from New Zealand and international studies showing the probabilities of preventing injury from two strategies:
    - Providing hip protectors to all residents of residential homes; and
    - Installing impact absorbent flooring
- Costs and cost effectiveness of each strategy was calculated. Outcome measures were hip fractures averted and any injury averted for the cost effectiveness analysis; and QALYs gained from averted hip fractures for cost utility analysis.
- The results suggest that for a cohort of 10,000 elderly people, providing hip protectors averts 26 hip fractures at an additional cost of $1,057,384. This equates to a cost per hip fracture avoided of $44,058 and a cost per QALY of over $220,000.
- Installing absorbent flooring averts 63 hip fractures and an estimated 800 other types of fractures. It is estimated to reduce overall costs by $411,093, meaning that it leads to better outcomes and saves money.
- Sensitivity analysis suggests that the results are sensitive to the assumed efficacy of the new flooring in preventing fractures. For hip protectors, the results are sensitive to the assumed rate at which older people are wearing hip protectors at the time of a fall.
- Impact absorbent flooring may be both less costly and more effective than providing hip protectors. Further study is needed to confirm the rate of injury when impact absorbent flooring is used in residential facilities.