How much are we willing to pay to prevent a fall? Cost-effectiveness of a multifactorial falls prevention program for community-dwelling older adults

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The objective was to assess the cost-effectiveness of a programme to prevent unintentional falls, for older people living in the community. The authors concluded that their programme was not cost-effective, compared with usual care, in Southwestern Ontario. The reporting and methods were satisfactory, but the limitations of usual care and the costs, should be carefully considered when interpreting the results.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to assess the cost-effectiveness of a programme to prevent unintentional falls, for older people living in the community.

Interventions
The intervention programme had many factors, which included a comprehensive geriatric assessment, with referral to health services, such as vision examination or physiotherapy. This was compared with usual care, provided by the family physician. A letter was sent to the family physician, from the study authors, summarising each participant's self-reported risk factors.

Location/setting
Canada/primary and secondary care.

Methods
Analytical approach:
A trial was conducted in 2003 to 2004, in which older people, and their caregivers, were randomised (grouped by risk factors) to receive either the fall prevention programme (188 people) or usual care (160 people). The follow-up was 12 months, and the authors stated that a societal perspective was adopted.

Effectiveness data:
The main effectiveness outcome was the number of falls prevented during the 12 months of follow-up. Falls were recorded as they occurred, using calendars that were completed daily and mailed to the research office at the end of each month; non-returns were followed-up by telephone. Participants who reported a fall were contacted for details of the fall, such as location, injury, and medical care received.

Monetary benefit and utility valuations:
Not applicable.

Measure of benefit:
The health benefit was measured by the number of falls prevented.

Cost data:
The costs were those of the programme, falls, and health service use. Each category included government costs, out-of-pocket expenses for the participant, and participant time. Fall-related health care and other health care data were
collected from the participants, by telephone. The unit costs were from a range of Canadian sources. All costs were reported in 2004 Canadian dollars (CAD). They were adjusted to the price year, using the consumer price index of 4%. Two willingness-to-pay thresholds were used. One was CAD 196, which was the average cost of admission to the emergency department, after a fall, for those aged over 65 years. The other was CAD 9,223, which was the average cost of hospital admission, for an average of 10 days, after a fall.

Analysis of uncertainty:
Variability in the data was presented as standard deviations, for cost and effect outcomes, and 95% confidence intervals, for mean cost differences.

Results
Over 12 months, the average number of falls was 1.29 (SD 3.24) in the intervention group, compared with 1.37 (SD 2.62) in the control group.

The total mean cost with the programme was CAD 18,916 (SD 60,866), compared with CAD 9,136 (SD 20,972) with usual care. The mean cost difference (CAD 9,780, 95% CI -1,993 to 21,551) was driven by higher hospitalisation costs (due to a longer stay) and higher specialist costs (due to an increased number of visits).

The incremental cost-effectiveness ratio was CAD 122,110 per fall prevented.

Using the incremental net benefit approach this cost-effectiveness ratio was CAD -9,764 when the threshold was assumed to be CAD 196; and CAD -9,041 when the threshold was assumed to be CAD 9,223. This suggested that the programme was not cost-effective at either willingness-to-pay threshold.

In a covariate regression analysis, the results were influenced by the participant region of residence.

Authors’ conclusions
The authors concluded that their falls prevention programme was not cost-effective, in Southwestern Ontario.

CRD commentary
Interventions:
The intervention and comparator were clearly described. It is likely that the usual care was not exactly standard practice, as patient risks were reported to the family physicians, for ethical reasons, and this may have affected their treatment. It is unclear how much this affected the results. The authors indicated that there were a variety of other approaches available. In particular, direct intervention (direct management of identified risk factors), instead of referral to other services, had been shown to be more effective in preventing falls.

Effectiveness/benefits:
The effectiveness data and methods were clearly reported. The trial was randomised and controlled, which should ensure that the risk of selection bias was minimised. The authors justified their method for collecting fall data, stating that self-reported falls was the main method used in the literature. This method was subject to the risk of recall bias, but this was minimal as falls were recorded daily and reported monthly. The authors suggested two reasons for the low incremental effectiveness of the intervention: only 37.6% of programme participants adhered fully to the referred services; and the disclosure of falls risk information to the family physician may have altered usual care, resulting in fewer falls.

Costs:
The cost categories were clearly reported. Most sources for the costs were reported, but those for the programme costs were not clearly given. The sources were specific to Canada. Future costs and effects do not appear to have been discounted, which was reasonable, given the short time horizon (one year). The price year was clearly reported, and costs were appropriately adjusted, where necessary. The authors excluded some costs: for programme costs, only the first visit to the referred service was included; for fall costs, long-term rehabilitation, home modification, and home care were not included; and neither medication nor medical device costs were included. The authors argued that these costs should affect both groups equally, but this was not fully justified.
Analysis and results:
The authors used the intention-to-treat principle and conducted an incremental analysis, which were the most appropriate methods for assessing the cost-effectiveness of competing alternatives. The results were clearly reported. There were two key limitations: the lack of generalisability, due to the additional information supplied to physicians for usual care; and the exclusion of some cost items. The authors stated that research, so far, had produced mixed results on the cost-effectiveness of falls prevention strategies and they suggested that more research was needed to assess the characteristics of successful programmes.

Concluding remarks:
The study reporting and methods were satisfactory, but the limitations highlighted should be carefully considered when interpreting the results.

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