Cost-effectiveness of a multidisciplinary fall prevention program in community-dwelling elderly people: a randomized controlled trial (ISRCTN 64716113)


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 study objective was to examine the cost-effectiveness of a multidisciplinary and multifactorial programme to prevent falls in community-dwelling elderly. The study demonstrated that the multidisciplinary intervention programme was not cost-effective compared with usual care in the Dutch setting, as the two strategies were similarly costly and effective. The study methodology was of satisfactory quality and was presented clearly, so the authors' conclusions appear valid.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
The objective was to examine the cost-effectiveness of a multidisciplinary and multifactorial programme intended to prevent falls in community-dwelling people aged 65 years or older.

Interventions
The multidisciplinary intervention consisted of a medical and occupational therapy assessment aimed at addressing potential risk factors for falls. The assessment team comprised a geriatrician, a geriatric nurse and a rehabilitation physician for the medical assessment, and an occupational therapist for the occupational therapy assessment at home. A summary of the results and recommendations for further referral were sent to the participants's GP. Moreover, recommendations concerning behavioural change, functional needs, and safety within the home environment were given to the participant on the basis of the risk assessment. The intervention period lasted for approximately 3.5 months. This new programme was compared against usual care for fallers presenting to the Accident and Emergency department. In the authors' setting, it was noted that no systematic attention was generally paid to the specific causes of the falls.

Location/setting
Netherlands/community.

Methods
Analytical approach:
This economic evaluation was based on a single clinical study. The time horizon of the analysis was 12 months. The authors stated that a societal perspective was adopted in the study.

Effectiveness data:
The clinical data were derived from a randomised clinical trial (RCT) that enrolled 333 patients (166 in the intervention group and 167 in the control group) who were followed for a 12-month period. Blinding was performed. The two groups were comparable at baseline in terms of their demographic characteristics and quality of life.

Monetary benefit and utility valuations:
Utility valuations were derived from the sample of patients enrolled in the RCT using the EuroQol (EQ-5D) questionnaires administered at baseline and after 4 and 12 months. An alternative source of utility valuations, the Falls Handicap Inventory, was also used.

Measure of benefit:
The two main health benefit measures used were the proportion of individuals sustaining a fall during the follow-up period and quality-adjusted life-years (QALYs).

Cost data:
The three main cost categories considered were programme costs (professionals’ time), other health care costs and patient/family costs (home modifications and out-of-pocket expenses). The other health care costs included general practitioner consultations or home visits, inpatient and outpatient specialist care, hospital admissions, admissions to nursing homes or homes for the elderly, paramedics consultations, alternative medicine, aids and other devices, professional home care and medications. Resource use was estimated through cost diaries, which were collected by monthly telephone interviews with all participants in the RCT. These resources were valued using standardised cost prices from the Dutch manual for cost analysis in health care research. The costs were in euros (EUR). The price year was 2004. No discounting was performed because of the short time horizon. An imputation method was used for missing data.

Analysis of uncertainty:
The uncertainty surrounding the cost-effectiveness estimates was investigated through bootstrapping. A one-way sensitivity analysis was also performed in order to test the robustness of some base-case assumptions.

Results
Differences in the clinical end points and benefit measures considered in the analysis were not significantly different between groups. For example, the mean calculated QALYs over 1 year were 0.70 (± 0.23) in the intervention group and 0.72 (± 0.23) in the control group, (p=0.455).

The proportion of persons sustaining a fall was 22% in the intervention group and 24% in the control group, (p=0.772).

The mean total cost per patient was EUR 4,857 (± 4,470) in the intervention group and EUR 4,991 (± 6,853) in the control group. The cost-difference did not reach statistical significance in total costs and in the sub-categories of costs.

The results of the sensitivity analysis confirmed the base-case findings and bootstrapping showed that similar percentage cost-effectiveness estimates lay in all four quadrants of the cost-effectiveness plan.

Authors’ conclusions
The authors concluded that a multidisciplinary intervention programme intended to prevent falls in community-dwelling elderly was not cost-effective compared with usual care in the Dutch setting.

CRD commentary
Interventions:
The approach used to select the two comparators was appropriate, as the standard of care in the authors’ setting was compared against a novel approach previously implemented in the British health care system. The description of the two strategies was clear.

Effectiveness/benefits:
The use of an RCT was appropriate for the study question and should have ensured the validity of the clinical analysis. This study design is associated with further strengths. First, power calculations were performed to ensure the enrolment of an appropriate number of patients. Second, the baseline characteristics of the two patient groups were comparable. Third, the authors stated that drop-outs and reasons for loss to follow-up were similar between the groups. Fourth, the analysis was based on an intent-to-treat approach. Finally, uncertainty in the clinical results was appropriately investigated through bootstrapping.

Costs:
The reporting of the cost analysis was extensive and transparent. The authors provided a breakdown of the cost items. Their exclusion of some cost categories was justified. Resource use reflected the real consumption of services in the sample of patients enrolled in the clinical analysis. Statistical analyses were performed to assess the statistical significance of cost-differences. Other details of the analysis, such as the price year and sources of costs, were
reported.

**Analysis and results:**
A synthesis of the costs and benefits was not required given the lack of statistical significance in terms of costs and benefits between the groups, as demonstrated by the bootstrapping analysis. The issue of uncertainty was satisfactorily addressed in the sensitivity analysis. The results of the analysis were also presented in detail for sub-groups of cost categories.

**Concluding remarks:**
Overall, the study methodology was presented clearly and valid sources of data were used. This enhances the robustness of the authors’ conclusions.

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**Bibliographic details**

**Other publications of related interest**


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