A trial of annual in-home comprehensive geriatric assessments for elderly people living in the community


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.

Health technology
Prevention of nursing home admissions and functional disability in older persons by a programme of annual in-home comprehensive geriatric assessments and follow up visits.

Type of intervention
Primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
Individuals over 75 living at home, who did not suffer from severe cognitive and functional impairment, language problems or terminal diseases and who had no plans to change location or move into a nursing home. The study group had a higher education level, lower mortality rate and lower rate of acute hospital admissions than the average population of over 75's.

Setting
The practice setting was in the community. The economic study was carried out in California, USA.

Dates to which data relate
The effectiveness analysis data were taken from the trial reporting from 1990-1993. Dates for costs of resources and prices were not stated.

Source of effectiveness data
Single study.

Link between effectiveness and cost data
Costing based on that of the sample patient programme. It is unknown whether costing was carried out retrospectively or concurrently with the effectiveness study.

Study sample
The initial sample was selected from those who were 75 years or older on the electoral register of Santa Monica and living at home. The required sample size for the trial was estimated from that for similar trials. A sample size of 200 in each group would with statistical power of 0.8 allow the detection of 40% reduction in disabilities, 25% reduction in acute hospital admissions. It would have a marginal ability with power 0.5 to detect 50% reduction in nursing home
admissions.

There were 215 individuals in the intervention group and 199 in the control group. 966 people were contacted by telephone of which 353 (37%) agreed to participate as did 86 others from a mailshot whilst 46 more individuals were invited to participate. 71 individuals (14.6%) were excluded from the initial sample.

**Study design**
Single centre randomized controlled trial. The follow up period was three years. Those individuals participating were assigned to the intervention group or the control group by means of a stratified allocation according to age and sex of sealed envelopes containing numbers. Overall the loss to follow up was 23%. This can be analysed as 45/215 in the intervention group (21%) of which 24 died, 14 refused to participate in programme and 7 moved out of the area. In the control group there was a loss to follow up of 52/199 (26%), which comprised of 26 deaths, 21 refusals and 5 movements out of the area.

**Analysis of effectiveness**
Analysis of the clinical study was said to be based on intention to treat. The primary health outcomes were basic and instrumental activities of daily living. The data was gathered from reports by the participants in the programme or close relatives. Groups were comparable in demographic and clinical features.

**Effectiveness results**
There was a higher level of functional ability in terms of the number of surviving participants in intervention group compared with the control group. 20 individuals (12%) of the intervention group were dependent on assistance in the basic activities of daily life compared with 32 (22%) in the control group. The adjusted odds ratio of being dependent on assistance was 0.4 of that of the control group, (0.2 - 0.8) (p value of 0.02). The number of individuals who needed assistance with the instrumental activities of daily life did not differ significantly between the intervention and control groups.

**Clinical conclusions**
The use of comprehensive in home geriatric assessments can reduce the onset of functional disability.

**Modelling**
Proportional - hazard models for survival data and regression analysis was used to estimate the effects on final outcomes and costs.

**Measure of benefits used in the economic analysis**
Disability free life years gained.

**Direct costs**
Only health service costs were considered. The costs of the assessment programme were estimated. Specifically these included the costs of full timenurses and geriatricians, supplies, travel and overheads. The costs of the comparator group were not calculated as the intervention group was receiving its treatment in addition to the regular medical care of the comparator group. The savings due to the implementation of the programme (such as visits to physicians and permanent stay nursing homes) were also estimated. The source of costing was the trial itself. The authors did not state whether costs were discounted. The costs are not dated.

**Statistical analysis of costs**
For the use of resources confidence intervals and p values were reported.
Currency
US dollars ($).

Sensitivity analysis
Sensitivity analyses were conducted taking into account the characteristics of the participants excluded and outliers.

Estimated benefits used in the economic analysis
The incremental disability free life years gained were 4.1 years per 100 persons during the three year follow up period.

Cost results
The total costs of the intervention programme were estimated to be $48,000 per 100 persons. The cost in the comparator programme of extra days spent in a nursing home were estimated to be $42,000 per 100 persons and the increased number of visits to physicians were $18,000 per 100 persons. Therefore the incremental cost was $24,000 per 100 persons. The duration of the costs is the three year follow up period.

Synthesis of costs and benefits
The incremental cost of each disability free life year gained was $6,000.

Authors' conclusions
The authors concluded that a programme of geriatric assessments may reduce the onset of functional disability. The authors recognised however that the effective components of this programme have not been determined and that further studies are necessary.

CRD Commentary
Overall this is a well designed study; however the authors themselves recognised that the sample group selected was not representative of the general population as they had higher education standards, lower mortality rates and a higher proportion of individuals living alone. The authors could have conducted more extensive sensitivity analysis to assess the generalisability of the study to other countries and different communities. The authors could have provided more detailed information on the specific breakdown of their costs (ie how the overheads were calculated and what travel expenses were included), together with information on price year and whether or not discounting was used. More clarity is required on the authors' definition of intention to treat analysis as the data supplied refers to the number of participants left at the end of the study rather than at its commencement.

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