Health outcomes and Medicaid costs for frail older individuals: a case study of a MCO versus fee-for-service care

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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.

Health technology
The study examined the use of a managed care organisation (MCO) established by Elder Health Inc. a private, for-profit company. The MCO was aimed at the care of frail, older, dually eligible (for both Medicare and Medicaid) individuals and based on capitation rates from both Medicare and Medicaid, which were integrated at the provider level. The stated medical care objective of the MCO under study was to provide integrated, geriatric oriented health care, emphasising prevention and primary care.

Type of intervention
The intervention investigated was integrated care for frail older people with complex health problems.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised frail older people (65 years and older) with complex health problems, who were eligible for both Medicare and Medicaid.

Setting
The setting was the catchment area covered by two of the clinics under the management of the MCO considered in the study (Elder Health, Inc.). The economic study was carried out in Baltimore, Maryland, USA.

Dates to which data relate
The dates to which the effectiveness and cost data related were 1998-1999. (The authors reported that the study began in October 1998 and that it was a 1-year follow-up study). The price year reported was 1999.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was undertaken both prospectively and retrospectively using a variety of sources, medical claims files, Elder Health’s management information system, computerised appointment system, etc. Some, but not all, of which may have belonged to the same study sample as that used in the effectiveness analysis. (Medical claim records were analysed starting in July 1998, and the study began October 1998).

Study sample
The sample size was determined in the planning phase of the study to be 200 individuals for each alternative strategy. The authors did not state that this sample size was established to assure a certain power, and no power calculations appear to have been performed. From a randomly compiled list, 368 patients were eligible, 246 patients were contacted and 200 completed the interviews. From a list of over 3,900 individuals under an FFS plan, 770 were contacted; among these, 304 were eligible for the study and 202 completed the interviews. The authors did not show that the study sample was representative of the study population. In total, 46 patients (18.7%) in the MCO group and 102 (33.6%) in the FFS group refused to participate in the study.

Study design
The study design appears to have been a prospective cohort study. The study was multi-centred (patients from two clinics were included in the MCO group, while it was not reported how many centres were used for the patients included in the control group). The duration of follow-up was 1 year. Sixty-six individuals were lost to follow-up: 37 in the MCO group and 29 in the FFS group. The reasons for withdrawals were: death, refusals to continue with the study, admission to a nursing home, crossovers (from a FFS to capitated care or vice versa), or other reasons. The authors reported that there were no differences by race or baseline overall health status between those individuals who remained in the study at 1 year and those who left the study, although there were significant differences in age and functional status (because of the fact that most of the withdrawals were due to death and nursing home entry).

Analysis of effectiveness
The analysis of the clinical study was based on treatment completers only.

The primary health outcomes assessed were: global health, functional status, self-reported health and satisfaction of the individuals with the care provided. Global status was measured by means of the Quality of Well-Being Scale (QWB) (see Kaplan and Anderson, in ‘Other Publications of Related Interest’ below). Functional status was measured by self-reported activities of daily living (ADLs) and instrumental activities of daily living (IADLs). (See ‘Other Publications of Related Interest’). Individuals’ global satisfaction was divided into five domains: global quality (i.e. overall quality of health care, information given by the provider, follow-up care, concern of overall health and needs met at same location), access to care (i.e. availability at night and on weekends, ease and convenience of appointments, and out-of-pocket costs), technical skills (i.e. whether the patients believed that their provider was competent), interpersonal manner of the health provider, and information received by the individuals. There were four responses categories for each one of the individuals’ global satisfaction domains: highly satisfied, satisfied, unsatisfied or very unsatisfied. Scores were summed within each domain, scores within one standard deviation of the mean score being defined as moderately satisfied, and scores above and below the mean being defined as highly satisfied or dissatisfied.

Both groups were shown to be comparable in terms of age, gender, education, living arrangements, and baseline global health, functional status and self-reported health. However, the two groups were statistically significantly different in terms of race. Also, a higher proportion of individuals in the MCO group were reported to have received preventive services before the study period, in comparison with those individuals in the FFS group. Furthermore, those MCO individuals who had received the preventative services presented higher levels of satisfaction in terms of global satisfaction, access to care and technical skills of the providers than those in the FFS group.

Effectiveness results
The effectiveness results were as follows:

For those patients under the MCO, the mean score of QWB at 1 year of follow-up was 0.61 (standard deviation (SD) = 0.2), and the change in the score with regard to the baseline value was -0.04, while for the patients under a FFS plan, the mean score of QWB at 1 year of follow-up was 0.61 (SD = 0.2) and the change in the score with regard to baseline value was -0.04. (No differences between MCO and FFS at either baseline or follow-up)

The mean ADL score at 1 year of follow up for the MCO group was 0.48 (SD = 1.0), and the change with regard to baseline value was 0.05; for the FFS group the mean ADL score at 1 year follow-up was 0.73 (SD = 1.2), and the change with regard to baseline value was 0.17.
The mean IADL score at 1 year of follow up for the MCO group was 1.46 (SD = 1.7), and the change in the score for the study period was 0.06, while for those patients under the FFS plan the mean IADL score at 1 year follow up was 2.11 (SD = 2.2), and the change in score with regard to baseline value was 0.31.

The user should note that a higher QWB score meant that the individual was better off, while a higher ADL or IADL scores meant that the individual was worse off.

There were statistically significant differences in the ADL and IADL scores reported by individuals under MCO and FFS plans (p<0.05(ADL) and p<0.01 (IADL)).

The percentage of individuals reporting excellent/very good/good health was 51.5 under the MCO, and 59.3 for the FFS group. The authors reported that 7.5% of MCO individuals reporting fair/poor health at the end of the study had previously reported a baseline health state of excellent/very good/good. The percentage of individuals under FFS plans that changed from fair/poor health to excellent/very good/good health was 5.2.

Among individuals in the MCO group, 13.8% were highly satisfied in terms of global satisfaction, 22.5% in terms of access to care, 17.6% in terms of technical skills of the provider, 13.7% in terms of interpersonal manners and 12.8% in terms of information received. For the FFS group patients, these percentages were: 11.5% (global satisfaction), 7.1% (access to care), 10.8% (technical skills of the provider), 12.0% (interpersonal manner), and 14.1% (information received). The only statistically significant differences were found in the satisfaction regarding the access to care, which was better for the MCO individuals (p<0.001), and the information received, which was considered to be better for those individuals under the FFS plan (p<0.05). No results for the other satisfaction categories were reported.

Clinical conclusions
QWB mean scores were similar for both groups. Although individuals under a FFS plan had worse scores regarding ADL and IADL, it should be noted that the baseline values for these individuals were also worse in comparison with those individuals under MCO (although the differences were not statistically significant). In the MCO group, there was a decrease in the percentage of individuals reporting excellent/very good/good health, while among the FFS individuals, this percentage increased in comparison with the baseline value. After the follow-up study, a greater proportion of individuals in the FFS group were highly satisfied regarding baseline values, and the differences between MCO and FFS remained only in terms of access to care (with a higher number of individuals highly satisfied among those in the MCO group) and information received (with a slightly higher percentage of individuals in the FFS group reporting high satisfaction).

Measure of benefits used in the economic analysis
No summary measure of benefit was used in the economic analysis, thus a cost-consequences analysis was performed.

Direct costs
Resource quantities and costs were reported separately. The direct costs included in the analysis were those of the health services, and comprised those costs related to in-patient services, physicians, out-patient services, home health (including adult day care and personal care), institutional long-term care, special services, pharmacy, MCO capitation payment (for the MCO group) and eligibility months. The per member per month (PMPM) payment was obtained by dividing the total costs by the number of patients' eligibility months.

Costs were obtained from Maryland Medicaid claims files. Resource utilisation was obtained from self-reported Medicare-covered utilisation by the individuals under analysis, and by the MCO's utilisation records. Data on hospitalisation and hospital days were collected from both self-reported and Medicaid data (because Medicaid data does not report on re-hospitalisations within a 30-day period). The authors reported that only cost data from Medicaid was available, but not from Medicare. Discounting was not performed but was not relevant because the study period was less than 2 years. The study reported average costs. The price year reported was 1999.
Statistical analysis of costs
The only statistical analysis reported was the comparison of the self-reported data for hospital admissions between the two groups.

Indirect Costs
Indirect costs were not reported.

Currency
US dollars ($).

Sensitivity analysis
The authors reported that 13 patients from the MCO group were reimbursed on an FFS basis. Therefore, the authors analysed the PMPM when these individuals were not considered in the costing. The area of uncertainty investigated was variability in data.

Estimated benefits used in the economic analysis
See the effectiveness results above.

Cost results
The PMPM payment was $519 for individuals in the MCO group, and $507 for individuals in the FFS group. No statistically significant differences were found for the number of hospital admissions between the two groups. When those MCO individuals that were reimbursed on an FFS basis were removed from the study sample, the PMPM under the MCO group was $508, almost identical to the value obtained under the FFS group.

Synthesis of costs and benefits
Cost and benefits were not combined due to the cost-consequences approach adopted.

Authors’ conclusions
The conclusions presented by the authors were not entirely consistent with the findings reported in the effectiveness analysis. The authors concluded that they found equal or better health outcomes and comparable costs when individuals under MCO were compared to individuals under FFS plans.

CRD COMMENTARY - Selection of comparators
It appears that the comparator was chosen because it represented traditional practice. You, as a user of this database, should decide if this is a widely used health technology in your own setting.

Validity of estimate of measure of effectiveness
The effectiveness analysis was based on a prospective cohort study that seems to have been appropriate for the study question. The authors did not show that the study sample was representative of the study population. However, drawing the MCO study sample from two centres would have increased the probability that the group was representative of the study population. Patient groups were shown to be comparable in terms of age, gender, education, living arrangements, and baseline global health, functional status and self-reported health, but not in terms of race, percentage of patients receiving preventive care before the beginning of the study, and baseline level of satisfaction. Some statistical analyses were performed to take account of potential bias and confounding factors. Significant differences in age and functional status were found between those patients who were followed-up during the whole period and those who left the study. Therefore, the consideration of treatment completers only as the basis for the effectiveness analysis may have
introduced bias due to non-random dropout that may have affected the effectiveness results. As the authors stated, the sample size was relatively small, and this may have influenced the fact that few statistically significant differences were found between patients in the MCO group and those in the FFS group. The authors chose only to report the satisfaction scores of those highly satisfied, and this seemed to give a very restricted view of the level of satisfaction; full details of all the scores would have been more useful.

**Validity of estimate of measure of benefit**
The authors did not derive a summary measure of health benefit. The analysis was therefore categorised as a cost-consequences study.

**Validity of estimate of costs**
Although the authors did not report the perspective adopted, all the costs relevant to the perspective of the health service seemed to have been included. Resource quantities were reported separately from the costs, which may help to enhance the generalisability of the results. However, insufficient details of the statistical analysis of quantities and costs were reported, which may limit the interpretation of the study findings. Discounting was not undertaken, but was not relevant given the short duration of the study (1 year of follow-up). The price year was given.

**Other issues**
The authors did not make appropriate comparisons of their findings with those from other studies; however, they did highlight the fact that this is a unique method of reimbursement. The issue of generalisability to other settings was addressed: the authors commented that the setting corresponded to an inner city area and therefore, the results may not be generalised to a rural area. Furthermore, they pointed out that patients in the study were predominantly black. Additionally, the concept of being dually eligible varies across states within the USA. A further issue to be considered is the differences in the health systems’ characteristics between the USA (with private coverage, and with Medicaid and Medicare to care for those people without economical resources and elderly people) and most other developed countries (where there is, at least in part, public coverage), making this study difficult to generalise to other settings, because the integral care needed by the study population may be considered in a different way depending on the principles guiding the different national health services.

**Implications of the study**
It is not clear whether individuals under a MCO plan experienced better health outcomes than those under a FFS plan. Moreover, the percentage of patients under FFS plans reporting excellent/very good/good health increased during the study period. On the other hand, the percentage of individuals in the MCO group reporting excellent/very good/good health decreased after 1 year of follow-up. The PMPM payment was very similar in both groups.

The authors stated the need to know whether capitation rates leave sufficient profitability for the MCOs. The authors also recommended the follow-up of the MCO under study to analyse its discharge rates to nursing homes as a safety valve from risk. Furthermore, they suggest that quantitative assessment of innovative delivery models must be performed in order to ensure both the patients' and the public's interests are well served.

**Source of funding**
This study was supported by the Robert Wood Johnson Foundation, Grant #032370.

**Bibliographic details**

**PubMedID**
12028225
Other publications of related interest


Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Aged, 80 and over; Baltimore; Cost of Illness; Fee-for-Service Plans /economics; Frail Elderly; Health Care Costs; Health Services for the Aged /economics /utilization; Health Status; Health Status Indicators; Humans; Managed Care Programs /economics; Medicaid /economics; Organizational Case Studies; Outcome Assessment (Health Care); Patient Satisfaction; Socioeconomic Factors; United States

AccessionNumber
22002000411

Date bibliographic record published
30/04/2003

Date abstract record published
30/04/2003