Mejor en casa: un programa de asistencia continuada para los pacientes con enfermedad respiratoria cronica avanzada [Better at home: a continuous health care program for patients with advanced chronic respiratory disease]

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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 analysed a new programme of continuous health care for patients suffering from advanced chronic respiratory disease (CRD), such as chronic obstructive pulmonary disease. The programme was articulated into three interventions, directed at patients with different needs and characteristics:

- an ambulatory monitoring programme (group A), including patients able to travel to hospital for monthly outpatient check-ups;
- an ambulatory pulmonary rehabilitation group (group B), including patients able to travel to hospital and needing re-breathing training with one weekly group session; and
- a home care programme (group C), including patients unable to travel to the hospital and receiving weekly or bi-weekly house calls.

Type of intervention
Home health care programme.

Economic study type
Cost-effectiveness analysis.

Study population
The study population included patients suffering from CRD who had been hospitalised at least three times in the previous year. Further inclusion and exclusion criteria were not reported.

Setting
The setting was the community. The economic study was carried out in Barcelona, Spain.

Dates to which data relate
The effectiveness and resource use data were gathered in 1994 and 1995. The price year was not reported.

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

Link between effectiveness and cost data
The costing was carried out prospectively on the same patient sample as that used in the effectiveness analysis.
Study sample
The study enrolled a sample of 26 eligible patients (24 men and 2 women). There were 8 patients with a mean age of 63 (+/- 4) years in group A, 10 patients with a mean age of 71 (+/- 5) years in group B, and 8 patients with a mean age of 72 (+/- 5) years in group C. The method used to select the sample was not reported, and neither were power calculations.

Study design
This was a before-and-after study, because the same group of patients was evaluated before and after the intervention. The patients were not randomised to enter into the three study interventions. However, the authors stated that the patients were allocated to the study groups on the basis of established criteria, such as need, ability to travel, and feasibility of collaboration with a physiotherapy group. The study was carried out in a single centre, the Hospital de la Santa Creu i de Sant Pau in Barcelona. The patients were followed for one year and loss to follow-up was due to patient deaths. There was one death in group A, 3 in group B and 5 in group C.

Analysis of effectiveness
The primary health outcomes used in the effectiveness analysis were the total and average number of admissions, the total and average admission days, and the number of monthly admissions. The analysis of the clinical study took into account all the patients included in the initial sample. The study groups were comparable at baseline, with the exception that patients in group A were significantly older than those in groups B and C.

Effectiveness results
Considering the whole group of patients:

the total number of admissions was 79 before the interventions and 18 after the interventions, (74% reduction);

the total admission days were 1,159 before the interventions and 298 after the interventions, (74% reduction);

the mean number of admissions per patient was 44.6 (+/- 18.9) before the interventions and 11.5 (+/- 17.4) after the interventions, (78% reduction);

the mean admission days per patient were 3.04 (+/- 1.11) before the interventions and 0.69 (+/- 0.93) after the interventions, (73% reduction);

the number of monthly admissions was 0.40 (+/- 0.2; range: 0.08 - 1) before the interventions and 0.09 (+/- 0.13; range: 0 - 0.4) after the interventions, (78% reduction).

All the differences between the before and after periods were statistically significant.

Analysing the single study groups, the reductions in both the number of hospital admissions and the hospital days were similar between the groups. There was, however, a non significant trend toward minor hospitalisation episodes in group A.

Clinical conclusions
The analysis of effectiveness showed that the three interventions were similar in terms of all outcome measures.

Measure of benefits used in the economic analysis
No statistically significant differences were found between the three interventions. A cost-minimisation analysis was therefore carried out.
**Direct costs**
The cost items included in the analysis from the perspective of the hospital were hospitalisations, outpatient visits, domiciliary visits, emergency visits, physiotherapy sessions and telephone calls. In the year before the intervention was implemented, only hospital admissions were recorded. The unit costs were not reported separately from the quantities of resources used. The costs were estimated from hospital data. Resource use was based on data derived from the effectiveness study. Discounting was irrelevant and was not carried out. The price year was not reported.

**Statistical analysis of costs**
Statistical analyses were conducted to test the statistical significance of differences in the total costs.

**Indirect Costs**
No indirect costs were included.

**Currency**
Spanish pesetas (Pta).

**Sensitivity analysis**
No sensitivity analysis was carried out.

**Estimated benefits used in the economic analysis**
See the 'Effectiveness Results' section.

**Cost results**
Considering the whole group of patients, the total costs were Pta 34,585,560 before the intervention and Pta 11,833,158 after the intervention.

Since the costs in the period before the intervention included only hospital admissions, the difference of Pta 22,751,402 represented the minimum cost-savings resulting from the new programme.

**Synthesis of costs and benefits**
Not relevant because a cost-minimisation analysis was conducted.

**Authors’ conclusions**
The implementation of a personalised, continuous and specialised health care programme for patients with chronic respiratory disease (CRD) was effective and resulted in cost-savings from the perspective of the hospital.

**CRD COMMENTARY - Selection of comparators**
The health care given before the new interventions was considered as the comparator because it represented the standard care, but it was not described. You should decide whether it represents a valid comparator in your own setting.

**Validity of estimate of measure of effectiveness**
The study used a before-and-after study. This was appropriate for the study question since the same sample of patients was used to estimate the impact of the new health care programme. The patients were then split into three groups, but no random allocation was performed. Thus, bias and confounding factors may have affected the conclusions of the analysis. However, it appears that patient allocation was performed to adapt each of the three interventions to patient
needs and characteristics. The authors acknowledged that the main limitation to their analysis was the lack of an external control group. It appears that power calculations were not conducted and there was no evidence that the initial study sample was appropriate for the study question. The method of sample selection was not reported. In addition, the authors did not state whether some eligible patients refused to participate or were excluded (for any reason) from the initial study sample.

**Validity of estimate of measure of benefit**
No summary benefit measure was used as a cost-minimisation analysis was carried out.

**Validity of estimate of costs**
The perspective of the hospital was adopted and all the relevant categories of costs were included in the analysis. However, for the year before the new programme, only the costs of hospital admissions were available. The unit costs were not reported separately from the quantities of resources used, thus limiting the possibility of replicating the study in other settings. The cost estimates were fairly specific to the study setting. Statistical analyses were performed on the costs, but not on the quantities of resources. The authors stated that the estimated cost-savings were substantially underestimated.

**Other issues**
The authors compared their findings with those from published studies, which partially confirmed their results. The issue of the generalisability of the study results to other settings and contexts was not addressed. Sensitivity analyses were not carried out.

**Implications of the study**
The study results suggest that there are feasible new approaches for the management of patients with CRD, which may be cheap and tailored on patient needs.

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