Integrated care for asthma: a clinical, social, and economic evaluation


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
Integrated care for asthma between specialist chest physicians and GPs.

Type of intervention
Secondary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
Adults (16 years and over) attending hospital outpatients' clinics with a diagnosis of asthma confirmed by a chest physician, and pulmonary function reversibility of at least 20% on treatment.

Setting
Hospital outpatients' departments and GP practices (primary care). The economic study was carried out in North East Scotland, UK.

Dates to which data relate
Effectiveness analysis data were collected in the period Oct 1989-Dec 1990. Resources were measured in the same period. Prices related to 1991.

Source of effectiveness data
A single study.

Link between effectiveness and cost data
Costs were valued prospectively on the same patient sample used in the effectiveness study.

Study sample
Patients attending outpatients' clinics in October 1989-December 1990 were invited to participate. 801 patients gave consent and 37 refused to participate. The basic sample size of 801, provided 80% power at 5% significance level of detecting a difference between integrated and conventional care, equivalent to 20% of standard deviation of the variable in question. 89 severe asthmatics were not suitable for integrated care and were allocated to conventional outpatient care. Therefore 712 subjects were eligible for randomisation: 363 subjects were allocated to integrated care and 349 to conventional care.
**Study design**
Pragmatic block 2x2x2 randomised trial. Patients were randomised between integrated and conventional outpatient care; between peak flow self monitoring and conventional monitoring; and between enhanced education and conventional education.

Multi-centre study (four outpatient clinics in Aberdeen, Banff, Elgin and Peterhead). The duration of follow up was 12 months. Loss to follow up was 19% overall, 67 cases (18% of 363) and 72 controls (20.6% of 349).

**Analysis of effectiveness**
The effectiveness analysis was based on treatment completers according to the group of allocation. Five clinical outcome measures were used: bronchodilator and inhaled steroid prescriptions, use of oral steroids, GP consultations and hospital admissions for asthma. Two symptom outcomes were used: average number of days of restricted activity and average number of disturbed nights in a week.

Psychological aspects were included such as: perceived asthma control, anxiety and depression and patient satisfaction. They were valued using the following: a) the asthma self-efficacy scale; b) hospital anxiety and depression scale (HADS); c) a scale derived from the living with asthma scale; d) questionnaires.

**Effectiveness results**
After 1 year, there were no significant overall differences between cases and controls for any clinical or psycho-social outcome. For pulmonary function, forced expiratory volume was 76% of predicted cases and 75% for conventional outpatients (95% CI for difference -3.6% to 5.0%). When asked to rate their perceived level of asthma control, integrated care patients were significantly more likely to describe themselves as being in control "all the time". GPs preferred integrated care for 64% of 512 patients in the study, as did 75% (251/337) of patients who had experienced integrated care and 62% (207/333) of patients who had not.

**Clinical conclusions**
Integrated care for moderately severe asthma patients is clinically as effective as conventional outpatient care.

**Measure of benefits used in the economic analysis**
Since the clinical study showed no difference in benefit between intervention and comparator, the economic analysis was based on difference in costs only.

**Direct costs**
Quantities and costs were not reported separately. Only health service costs were considered: all relevant staffing and material costs, hospital and GP consultations, as well as administration costs of integrated care. The estimation of the costs was based on the observed units of analysis of the RCT during the study year.

Direct costs to patients were gained from an extra postal questionnaire after the 3rd quarterly review. GP costs were derived from published information. Other health service costs were derived in collaboration with the Grampian Health Board. Price date was 1991.

**Currency**
UK pounds sterling

**Sensitivity analysis**
No sensitivity analysis was carried out.
Estimated benefits used in the economic analysis
Not applicable.

Cost results
The integrated care scheme saved the hospital an average of 3.06 per patient per year, saved GP Fundholders 2.41 per patient per year and saved patients 39.52 per year. However, whether providers gain or lose from the introduction of integrated care will depend on their circumstances and the choice of computer system to operate integrated care. GPs could also make additional savings if they claim reimbursement for specialist clinics.

Synthesis of costs and benefits
Not applicable.

Authors' conclusions
Integrated care for moderately severe asthma is clinically as effective as conventional outpatient care. It is cost effective, and an attractive management option for patients, GPs and hospital consultants. Integrated care patients were at no clinical, psychological or social disadvantage through membership of the scheme, and they benefited financially and in their perceived level of asthma control.

CRD Commentary
There are elements of cost utility analysis, since all concerned prefer integrated care. The cost analysis should be more detailed (e.g. it is not clear what the patients' costs are). In the clinical analysis, the sample size was not always the same and the reason for this was not explained. Therefore there is some doubt over whether the study is really based on intention-to-treat, as the authors stated.

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