Cost-effectiveness of intensive v. standard case management for severe psychotic illness

UK700 Group

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 use of intensive case management for patients with severe mental illness. This consisted of a system of care delivered by trained mental health professionals, which can be distinguished from standard case management by the nature of its reduced caseload, i.e. 10 to 15 rather than 30 to 35. The case managers were given a specific two-day induction course.

Type of intervention
Other: case management.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients aged between 18 and 65 years, who had suffered from a psychotic illness for at least two years and who had been admitted to a psychiatric hospital at least twice, once within the past two years. Patients were excluded if they had organic brain damage or a primary diagnosis of substance misuse.

Setting
The setting was the community. The economic study was carried out in four inner city areas in UK, of which three were in London and one was in Manchester.

Dates to which data relate
The effectiveness evidence and resource use data were gathered from February 1994 to April 1996. The costs were evaluated in 1997 to 1998 values.

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

Link between effectiveness and cost data
The costing was undertaken prospectively on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not reported in the current study (reported in the clinical study - see "Other Publications of Related Interest" below) for the effectiveness analysis, but were performed for the costing. The patients were identified by a review of the inpatient and outpatient registers at the study hospitals. In total, 708 patients were identified, but 41 were excluded from the analysis due to death (n=15), loss to follow-up (n=14) or insufficient information for the
Overall, 667 patients were included in the study. Of these, 335 were in the intensive group and 332 in the standard group.

**Study design**
This was a randomised controlled clinical trial carried out in four centres (St. George's Hospital, St. Mary's Hospital and King's College Hospital in London, and Manchester Royal Infirmary in Manchester). Randomisation was stratified by centre and was conducted by an independent statistical centre. Researchers, independent of those providing clinical care, conducted assessments at baseline, 12 and 24 months. The average length of follow-up was 104 weeks in both groups and 14 patients were lost to follow-up.

**Analysis of effectiveness**
The basis for the clinical analysis was intention to treat. The primary health outcome was the number of days in hospital for psychiatric problems over 24 months, recorded in a modified World Health Organization (WHO) Life Chart. The secondary outcome measures included:

- clinical status, assessed using the Comprehensive Psychiatric Rating Scale (CPRS);
- quality of life, assessed using the Lancashire Quality of Life Profile;
- unmet needs, recorded using the Camberwell Assessment of need;
- social disability, measured by the WHO Disability Assessment Schedule (DAS); and
- patient satisfaction assessed, using a self-reported questionnaire.

No comparability of the study groups was reported in the present study (details were reported elsewhere - see "Other Publications of Related Interest" below), although the authors stated that there was no difference between those patients who were included in the analysis and those who were excluded.

**Effectiveness results**
There was no statistically significant difference between the intensive and standard groups in terms of the following outcome measures:

- the hospital days over 24 months were 73.5 in the intensive group and 73.1 in the standard group (difference 0.4 days, 95% confidence interval, CI: -17.4 - 18.1);
- the CPRS scores were 18.5 in the intensive group and 18.1 in the standard group (difference 0.4, 95% CI: -1.8 - 2.7);
- the quality of life scores were 4.58 in the intensive group and 4.55 in the standard group (difference 0.04, 95% CI: -0.09 - 0.16);
- the number of unmet needs was 1.84 in the intensive group and 2.13 in the standard group (difference -0.29, 95% CI: -0.68 - 0.11);
- the mean DAS total scores were 1.10 in the intensive group and 1.13 in the standard group (difference -0.03, 95% CI: -0.16 - 0.10); and
- the mean patient's satisfaction scores were 16.7 in the intensive group and 17.1 in the standard group (difference -0.3, 95% CI: -1.2 - 0.5).

**Clinical conclusions**
The authors concluded that the two case management approaches were similar as there was no statistically significant
difference in any outcome measure.

**Measure of benefits used in the economic analysis**

No summary benefit measure was used in the economic analysis, due to the lack of a statistically significant difference between the study groups in term of the effectiveness. A cost-minimisation analysis was therefore carried out, although the authors analysed the relationship between the costs and the primary health outcome.

**Direct costs**

Discounting was carried out since the costs were incurred over two years. The unit costs and the quantities of resources were reported separately. The cost/resource boundary reflected the perspective adopted in the study. The health costs included in the analysis were for the case managers or community mental health team (CMHT), hospital services, primary care, medication, accommodation, prison and police custody, social and non-statutory services. The resources were estimated using actual data derived from the trial. The unit costs were estimated from several sources, such as official salaries for personnel, local providers for hospital and social services, Personal Social Services Research Units for primary care, and a local prison for police custody. The quantities of resources were measured from February 1994 to April 1996. The costs were evaluated in 1997 to 1998 values.

**Statistical analysis of costs**

Power calculations were derived from a previous study. These indicated that a sample size of 350 patients in each group could detect a difference of 45 in the average weekly cost per patient as statistically significant at the 5% level, with 80% power. Statistical analyses of the total costs were also carried out to test for statistical significance of the results. Sub-group analyses were carried out using tests of interaction. Finally, multiple regression was used to adjust for the baseline characteristics of the patients, such as centre, age, gender, ethnic group, CPRS, social class, and duration of illness.

**Indirect Costs**

The indirect costs related to the expenses for the patient and family and productivity losses were not included in the main analysis. However, the authors discussed their impact.

**Currency**

UK pounds sterling (€).

**Sensitivity analysis**

One-way sensitivity analyses were carried out to assess the robustness of the estimated costs to variations in the unit costs, discount rate, capital overheads as a percentage of CMHT staff costs, and the inflation rate of case manager costs for non-event recorded to event recorded time. Key cost drivers, psychiatric inpatient care and staffed accommodation were varied to assess the generalisability of the study results to other locations in UK.

**Estimated benefits used in the economic analysis**

See the 'Effectiveness Results' section.

**Cost results**

No statistically significant difference was found in the total costs of case management in the two groups, either in the main analysis or in the sub-group analyses.

The total two-year costs amounted to 24,553 (+/- 23,408) in the intensive group and 22,704 (+/- 22,000) in the standard group, with a cost difference of 1,849 (95% CI: -1,605 - 5,304).
The median two-year cost (90% range) was 15,912 (2,232 to 73,035) in the intensive group and 14,736 (1,001 to 62,180) in the standard group.

The estimated costs were not sensitive to variations carried out in the sensitivity analyses.

**Synthesis of costs and benefits**
A formal synthesis of the costs and benefits was not carried out, due to the lack of statistical significance in terms of both the effectiveness and the costs. The authors explored the relationship between the costs and length of hospitalisation. They found that psychiatric inpatient costs comprised almost half of the total costs of care for patients in both groups (47% for intensive care and 48% for standard care). Overall, there was no evidence that intensive care was more cost-effective than standard care, or vice versa.

**Authors' conclusions**
Intensive case management was not more cost-effective than standard case management for patients with severe psychotic illness. In terms of the estimation of the indirect costs, the authors commented that "given the lack of differences between the two groups in outcomes and resource utilisation, it seems reasonable to assume that patients and family costs would also differ little". They also added that the exploration of months in full-time employment and months' unemployed revealed no significant differences between the study groups. Consequently, the inclusion of the indirect costs would not change the basic results of the analysis.

**CRD COMMENTARY - Selection of comparators**
The rationale for the choice of the comparator was clear. Standard case management represented the usual intervention for the management of patients with severe psychotic illness. You should assess whether it represents a widely used intervention in your own setting.

**Validity of estimate of measure of effectiveness**
The analysis of the effectiveness used a multicentre, randomised controlled trial, thus enhancing the internal validity. The sample size was large enough to detect statistically significant differences in the economic analysis and, therefore, was large enough to meet the requirements of the effectiveness analyses. The study sample appears to have been representative of the study population. The period during which the effectiveness evidence was collected was reported. The basis for the analysis of the clinical study was intention to treat. However, no baseline comparison of the study groups was reported, although there was no difference between those patients participating and not participating. The potential role of bias and confounding factors should be limited given the randomised design of the study.

**Validity of estimate of measure of benefit**
No summary benefit measure was used in the economic analysis, since there was no difference in the outcome measures assessed in the effectiveness analysis. However, the authors assessed the relationship between the primary outcome and the total costs of the interventions.

**Validity of estimate of costs**
The authors stated that a societal perspective was adopted, and direct medical and non-medical costs were included in the analysis. The impact of the indirect costs, which were not estimated, was assessed. It would appear that the study results were quite robust, due to the fact that productivity losses were probably similar in the study groups. The unit costs and the quantities of resources were reported separately and several statistical analyses were carried out. The price year was adequately reported and several sensitivity analyses were performed on the cost side. The validity of the cost results is, therefore, likely to be high.

**Other issues**
The authors made some comparisons of their findings with those from other studies. They also addressed the issue of the generalisability of the study results to other locations in UK in the sensitivity analyses. Thus, the external validity of the study, already enhanced by the separate analysis of the unit costs and quantities, should be high. Patients with severe psychotic illness were enrolled in the study and this was reflected in the conclusions. The authors reported the study results in appropriate detail.

**Implications of the study**
The main implication of the analysis is that "the policy of advocating intensive case management for all patients with severe psychosis is not supported by these results and needs to be re-examined".

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**Other publications of related interest**

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