Heavy users of acute psychiatric beds: randomized controlled trial of enhanced community management in an outer London borough


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
Enhanced community management (ECM), a community-focused approach for the management of heavy users of inpatient psychiatric services, was examined. The intervention was intended to shift the setting of care from the hospital to the community. It consisted of home-based interventions carried out by a dedicated multi-professional team, which worked from a community base in collaboration with the standard locality services.

Type of intervention
Other: home care.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients aged between 16 and 64 years, who could be classified as heavy users of inpatient psychiatric services. The concept of "heavy user" was not only based on a fixed threshold of the number of prior admissions, but also on the occupied bed days over the same time period.

Setting
The setting was the community. The economic study was carried out in Brent, an outer London borough.

Dates to which data relate
The effectiveness and resource use data were gathered between 1995 and 1996. The costs used reflected 1995 to 1996 prices.

Source of effectiveness data
The effectiveness evidence was 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
Power calculations were conducted in the preliminary phase of the study. These showed that with two groups of 100 to 120 patients each, using statistical tests with 80% power and a 5% significance level, a 15% difference in the main study outcome could have been detected. Eligible patients in the area of Brent were enrolled in the study. Of all the patients hospitalised over the study period, the final sample comprised 193 eligible cases. There were 97 cases in the
experimental group and 96 in the control group. In the experimental group, the mean age was 38.6 years, 47.4% were men, and there had been 5.4 admissions during the preceding 6.5 years. In the control group, the mean age was 39.8 years, 58.3% were men, and there had been 5.6 admissions during the preceding 6.5 years.

**Study design**
This was a randomised controlled trial with a parallel design carried out in the area of Brent. Randomisation was performed using random numbers generated by a computer programme. The patients were assessed at baseline by interviewers blinded to the treatment allocation. The patients were then followed for two years. They were assessed after one year and at the end of the follow-up period, during which time the interviewers were aware of patient allocation to the study groups. At the final assessment, 63 patients in the experimental group and 62 in the control group were available for the analysis.

**Analysis of effectiveness**
The basis of the effectiveness analysis was intention to treat. The primary health outcomes assessed in the analysis were:

- the Health of the National Outcome Scale (HoNOS), where a maximum value of 48 indicated severe dysfunction;
- the Krawiecka score, where a maximum value of 36 indicated severe dysfunction;
- the Hospital Anxiety and Depression Scale for both depression and anxiety (HAD-S; maximum value 21), where a value equal or greater than 8 indicated significant dysfunction;
- the Social Functioning Questionnaire (maximum value 24), where a value equal or greater than 10 indicated significant dysfunction;
- the Well-Being Questionnaire, where a maximum value of 30 indicated a high quality of life;
- the Camberwell Assessment of Need (CAN-user, maximum number of needs 22); and
- the Ratings of Medication Influences (ROMI) for compliance or non-compliance, where a maximum value of 3 indicated high compliance or high non-compliance.

The study groups were shown to be comparable at baseline in terms of socio-demographic factors.

**Effectiveness results**
The scores for the outcomes assessed in the analysis changed from baseline to the two-year follow-up.

In particular, the HoNOS changed from 11.36 to 11.9 in the study group and from 12.2 to 10.4 in the control group.

The Krawiecka score changed from 9.6 to 9.2 in the study group and from 8 to 7.9 in the control group.

The HAD-S for depression changed from 7.4 to 7.3 in the study group and from 6.4 to 6.8 in the control group.

The HAD-S for anxiety changed from 7.3 to 7.5 in the study group and from 5.8 to 6.4 in the control group.

The Social Functioning Questionnaire score changed from 8.4 to 8.9 in the study group and from 7.8 to 7.9 in the control group.

The Well-Being Questionnaire changed from 15.8 to 13.4 in the study group and from 16.1 to 14.9 in the control group.

The CAN-user changed from 7.7 to 6.6 in the study group and from 7.9 to 5.6 in the control group.
The ROMI compliance score was 1.8 at both the one-year and two-year assessment in the study group. The corresponding scores in the control group were 2 (one-year assessment) and 1.9 (two-year assessment).

The ROMI non-compliance score was 1.3 at the one-year assessment and 1.2 at the two-year assessment in the study group. The corresponding scores in the control group were both 1.2.

None of the differences between the study groups reached statistical significance.

Clinical conclusions
The effectiveness analysis showed that there was no statistically significant difference in any of the outcome measures estimated.

Measure of benefits used in the economic analysis
No statistically significant difference was found in any of the outcome measures assessed in the effectiveness analysis, thus a cost-minimisation analysis was conducted.

Direct costs
Discounting was not conducted since the costs were incurred over two years. The unit costs and the quantities of resources were not reported. The health service costs included in the economic evaluation were inpatient costs, day-hospital costs, outpatient costs and community team costs. The cost/resource boundary adopted was not stated, but appears to have been that of the local hospital. The quantities were estimated from the trial, while the unit costs were primarily obtained from local account data. When local data were unavailable, national published cost data were used. The pharmacy costs were not included in the analysis. The costs were estimated in 1995 to 1996 prices.

Statistical analysis of costs
Standard statistical analyses of the costs were conducted to assess the statistical significance of the results.

Indirect Costs
The indirect costs were not included in the analysis. However, the authors stated that the indirect costs were estimated to be approximately 15% of the total costs.

Currency
UK pounds sterling (£).

Sensitivity analysis
No sensitivity analyses were carried out.

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

Cost results
The total costs for the intervention group were 7,928 at baseline, 8,310 at the one-year follow-up and 6,968 at the two-year follow-up. The total costs for the control group were 8,392 at baseline, 7,868 at the one-year follow-up and 7,316 at the two-year follow-up. The difference was not found to be statistically significant. However, the outpatient costs decreased significantly faster in the control group than in the intervention group.
In terms of resource use, no difference between the groups was found in terms of occupied bed days, day-hospital appointments attended and outpatient appointments attended. However, face-to-face contacts and non-face-to-face contacts by community teams were significantly more in the intervention group than in the control group.

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

**Authors' conclusions**
The enhanced community management (ECM) intervention for a group of heavy users of inpatient psychiatric services did not result in important clinical gains or significant cost-savings.

**CRD COMMENTARY - Selection of comparators**
The rationale for the choice of the comparator was clear. Care provided by the local hospitals was selected as it represented the standard care for heavy users. You should decide whether it represents a valid comparator in your own setting.

**Validity of estimate of measure of effectiveness**
The analysis of effectiveness used a randomised controlled trial, which was appropriate for the study question. Randomisation and the method of sample selection were reported. The study sample appears to have been representative of the whole study population of heavy users of inpatient services. The authors also performed power calculations in the preliminary phase of the study. The basis of the effectiveness analysis was intention to treat, and the study groups were shown to be comparable at baseline. These issues tend to enhance the internal validity of the analysis.

**Validity of estimate of measure of benefit**
No summary benefit measure was used in the economic analysis. The analysis was therefore categorised as a cost-consequences study.

**Validity of estimate of costs**
The perspective of the study was not explicitly stated, but only the direct costs were included in the analysis. The indirect costs were not considered. However, the authors stated that this omission was unlikely to affect the conclusions of the study, as the amount of indirect costs was much smaller than that of the direct costs. The authors also noted that the lack of a statistically significant difference in the total costs may have been due to an underpowered sample size. The unit costs and quantities of resources were not reported, and a detailed breakdown of the cost items was not provided. The source of the cost data and the price year were reported. The costs were fairly specific to the study setting and no sensitivity analyses were conducted.

**Other issues**
The authors made some comparisons of their findings with those from other published studies. The issue of the generalisability of the study results to other settings was not explicitly addressed, thus the external validity of the analysis was quite low. The study referred to heavy users of inpatient psychiatric services and this was reported in the conclusions of the analysis.

**Implications of the study**
The study failed to show the benefits and cost-savings of the ECM programme. The authors suggested that it could be worth assessing the cost-effectiveness of the same programme limited to a smaller group of heavy users, for example, those constituting the top 2 or 3% of heavy users of hospital beds.
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