When the cradle falls II: the cost-effectiveness of treating postnatal depression in a psychiatric day hospital compared with routine primary care

Boath E, Major K, Cox J

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
A specialist psychiatric Parent and Baby Day Unit (PBDU) was compared with routine primary care (RPC) for the treatment of postnatal depression (PND). The PBDU was a psychiatric day hospital that was consultant led and managed by nurses, and staffed by a multi-disciplinary team.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised women suffering from PND.

Setting
The setting was primary care and secondary care. The economic analysis was conducted in the UK.

Dates to which data relate
The effectiveness and resource data related to 1992 to 1993. The prices for 1992 to 1993 were used.

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

Link between effectiveness and cost data
The costing was carried out prospectively using the same sample of patients as that used in the effectiveness study.

Study sample
The methodology was outlined in another paper (see Other Publications of Related Interest). No power calculations to determine the sample size were reported. Thirty women treated at the PBDU were compared with 30 women treated using RPC.

Study design
The study was a prospective naturalist cohort study that was conducted in a single centre. The duration of follow-up was 6 months. No loss to follow-up was reported.
Analysis of effectiveness
It was unclear whether all of the patients included in the study were considered in the analysis. The primary health outcome used in the analysis was a range of outcome measures, which included the Clinical Interview Schedule. The outcome measures were collected initially, and at 3 and 6 months. The authors reported that at baseline, the women in the two groups were comparable in terms of their sociodemographic characteristics and the scores on any of the outcome measures used. However, details of the patient characteristics and scores were not shown.

Effectiveness results
The authors did not report the effectiveness results (scores) in detail.

At 6 months, 21 women in the PBDU group versus 7 in the RPC group were no longer depressed. This result was used as the benefit measure in the economic analysis.

Clinical conclusions
The PBDU was more effective than RPC.

Measure of benefits used in the economic analysis
The measure of benefit in the economic analysis was the recovery in treated women. Recovery was defined a priori as no longer fulfilling the Research Diagnostic Criteria for major or minor depressive disorder.

Direct costs
The quantity/cost boundary adopted was unclear, but it is likely to have been that of society. The direct costs were for general practitioner (GP) and health visitor contacts, secondary care contacts, antidepressant medication, the PBDU (including capital costs, staff-related costs and other operational expenses), and the client's costs. The cost of transport and childcare were also estimated. The cost of medication was based on the British National Formulary (1993), whereas the costs of the health visitor and secondary care contact came from the Premier Health NHS Trust. The GP contact costs were derived from a published report (1993). All cost information of the PBDU was provided by the Combined Healthcare NHS Trust. Capital costs were converted into an annual equivalent cost using the treasury discount rate of 6%. The costs and the quantities were reported separately. The prices for 1992 to 1993 were used.

Statistical analysis of costs
A statistical analysis of the costs was conducted using a U-test.

Indirect Costs
The indirect costs included the loss of employment, housework or leisure opportunities. A structured interview schedule, developed specifically to collect the economic data for the study, was administered during 1992 to 1993. The interview was carried out at the initial research assessment and the information was updated at 3 and 6 months. The valuation approach was actual expenditure. The lost value of time was derived from Department of Transport estimates. The costs and the quantities were not reported separately. The quantity/cost boundary adopted was unclear.

Currency
UK pounds sterling ( ).

Sensitivity analysis
One-way sensitivity analyses were conducted on the cost variables and on the estimate of spontaneous recovery.
Estimated benefits used in the economic analysis
At 6 months, there were 14 more successfully treated women in the PBDU group than in the RPC group.

Cost results
The costs to the client were 9,078 in the PBDU group and 763 in the RPC group, (p<0.001).

The total cost was 211 (95% confidence interval, CI: 1.051 - 2.028) for the PBDU group and 18,973 (95% CI: 169 - 1,096) for the RPC group, (p<0.001).

There was no significant difference between the PBDU and RPC groups in the GP and health visitor costs (6,089 versus 7,976) or in the medication costs (1,313 versus 965).

Moving from RPC to the PBDU would involve an additional expenditure of 27,238.

Synthesis of costs and benefits
The move from RPC to a PBDU would incur an additional cost per successfully treated woman of 1,945. This compared favourably with the current cost of 2,710 per successfully treated woman in the RPC group. However, if the costs of medication, GP and health visitor contacts were excluded, the move to a PBDU would incur an additional cost per successfully treated woman of 2,056. This value did not compare well with the cost of 1,433 for RPC.

If at least 10% of women are known to make a spontaneous recovery, then the PBDU would be more cost-effective than RPC.

If the costs to the clients were excluded, the PBDU remained the most cost-effective option treatment.

Authors' conclusions
Routine primary care (RPC) was dominated by treatment in the Parent and Baby Day Unit (PBDU) on the grounds of cost-effectiveness.

CRD COMMENTARY - Selection of comparators
The choice of the comparator was justified on the grounds that it was RPC. You should consider whether RPC is a widely used practice in your own setting.

Validity of estimate of measure of effectiveness
The analysis used a prospective cohort study, which was appropriate for the study question. However, the sample size was very small, suggesting a lack of power calculations. In addition, the effectiveness outcomes (Clinical Interview Schedule scores) were not reported. The authors stated that the two groups were comparable at baseline, however, no details were reported. It would appear that the sample was representative of the study population. It should be noted that, due to the observational nature of the study, bias is possible and the internal validity is likely to be quite low.

Validity of estimate of measure of benefit
The estimation of benefits was obtained directly from the effectiveness analysis. This choice of estimate was justified. However, practical considerations and budget constraints limited the time horizon.

Validity of estimate of costs
The perspective adopted in the study was not stated, but it appears to have been societal. However, as noted by the authors, the social and financial consequences of care arrangements to the mothers for their infants and older children were excluded. The sample size of the study was based on the Clinical Interview Schedule, a clinical outcome measure.
Subsequently, the study was not powered to detect differences in resource use. The authors acknowledged that these factors might limit the strength of the conclusions. Finally, potential long-term averted costs were not included due to the short time horizon adopted (6 months).

**Other issues**
The authors made appropriate comparisons of their findings with those from other studies. The limitation of generalisability of the results to other settings or countries was addressed. The authors did not present their results selectively. The authors reported further limitations to their study, which have been highlighted already.

**Implications of the study**
The authors suggested that treatment in a PBDU should be recommended to health care decision-makers. Long-term follow-up research is needed. Future work should extend the size of the study, such that there are sufficient numbers of women to capture the sensitivity of the analysis to specific costs, and should explore the evidence relating to spontaneous recovery.

**Source of funding**
Supported by a grant from West Midlands Regional Health Authority.

**Bibliographic details**
Boath E, Major K, Cox J. When the cradle falls II: the cost-effectiveness of treating postnatal depression in a psychiatric day hospital compared with routine primary care. Journal of Affective Disorders 2003; 74(2): 159-166

**PubMedID**
12706517

**Other publications of related interest**

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Cohort Studies; Cost-Benefit Analysis; Depression, Postpartum /economics /rehabilitation; Female; Follow-Up Studies; Hospitalization /economics; Hospitals, Psychiatric /economics; Humans; Primary Health Care /economics; Prospective Studies

**AccessionNumber**
22003009326

**Date bibliographic record published**
29/02/2004

**Date abstract record published**
29/02/2004