Home-based versus hospital-based care for serious mental illness: controlled cost-effectiveness study over four years


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
Home-based versus hospital-based care for serious mental illness.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
People with serious mental illness (schizophrenia and severe affective disorder).

Setting
Community and hospital. The study was carried out in London, UK.

Dates to which data relate
Effectiveness, resource use and cost data were collected over the four-year period of the study although the exact dates were not clear. The price year was 1996/7.

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

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

Study sample
Patients entering the study were aged 17 to 64, with no primary addiction or any acute or chronic organic brain syndrome, were not pregnant at the time of randomisation, and were living in the South Southwark catchment area. People meeting these criteria with serious mental illness, facing crisis inpatient admission, were randomly allocated to DLP care (n=92) or control inpatient care (n=97). People were accepted for Phase II randomisation if they had received at least 18 months of DLP care. The Phase I DLP sample fell to 66 by Phase II, and was randomised equally to continuing-DLP (n=33) or to standard care (ex-DLP control care, n=33).
Study design
The study was a prospective randomised controlled trial carried out at a single centre. Randomisation during Phase I was effected using sealed envelopes held at the emergency clinic. In Phase I, DLP patients had DLP care for at least 18 months. The Phase I DLP sample was randomised at month 30. Phase II patients were evaluated over months 30-45 since trial entry. 26 patients who received DLP during Phase I were not enrolled in Phase II. Of the original 97 controls, 70 patients were evaluated at month 45.

Analysis of effectiveness
The analysis of the clinical study was based on intention to treat. The primary health outcomes reported included symptoms, social adjustment, patients' and relatives' satisfaction, mortality and suicide rates, lost employment, and family inputs to care. The authors did not report whether, at analysis, groups were comparable in terms of demographic characteristics.

Effectiveness results
For months 1-20, DLP resulted in a slight, but significant, improvement in symptoms and social adjustment, and markedly enhanced patients' and relatives' satisfaction, without any deterioration in other outcomes. For months 30-45, there were few advantages in symptoms or social adjustment for DLP compared to control patients, and no differences in suicide rates. However, patients' and relatives' satisfaction continued to be significantly superior in the DLP group. There were no significant differences in lost employment or family inputs to care. The Heckman test revealed that the only patient characteristic associated with drop-out was age (p=0.003).

Clinical conclusions
It is clear that home-based DLP was a more effective alternative to standard hospital-based care in the short term, but DLP appeared to lose its effectiveness advantage in the final year of the research period.

Modelling
Regression techniques were used to test for bias from drop-outs:
the link between admission characteristics and costs was examined, a cross-prediction was made of what costs would have been for each sample of patients, given their characteristics at study entry, had they instead received one of the other two care modes.

Measure of benefits used in the economic analysis
The authors used the following measures of benefit: symptoms, social adjustment, patients' and relatives' satisfaction, mortality and suicide rates, lost employment, and family inputs to care. As such, this study may be regarded as a cost-consequences analysis. Instruments used to assess patients included the Global Assessment Scale, the Present State Examination, the Brief Psychiatric Rating Scale, the Social Adjustment Scale, a Daily Living Skills rating and questions on patients' and relatives' satisfaction with services.

Direct costs
It was not reported whether costs were discounted and quantities and costs were not reported separately. Costs were measured comprehensively to range over all services, including health care, social care, employment, accommodation and criminal justice services. The quantity/cost boundary adopted was that of society. The estimation of quantities and costs was based on actual data. The source of resource use and cost data was not stated. Costs were originally calculated at 1989/1990 price levels and subsequently inflated to 1996/1997 price levels using the UK National Health Service Pay and Prices Index.

Statistical analysis of costs
Indirect Costs
Costs were measured comprehensively to range over all services, including health care, social care, employment, accommodation and criminal justice services.

Currency
UK pounds sterling ()

Sensitivity analysis
Not reported.

Estimated benefits used in the economic analysis
See effectiveness results above.

Cost results
Control group patients who, at original admission, had behaviour, speech or other problems, or poorer social adjustment, were imposing higher health care and associated costs in the longer term, both with DLP and control care.

Higher scores on the non-specific neurotic syndrome or the delusions and hallucinations subscores brought costs down, albeit modestly.

Afro-Caribbean people tended to have lower costs (control group only).

For the combined continuing-DLP and ex-DLP-controls, costs were higher for those with initially worse behaviour, speech and other disorders, and poorer social adjustment.

A history of previous inpatient admissions and initial diagnosis of schizophrenia or mania all brought costs down.

Home-based DLP was significantly less costly over months 1-20 (282 per week DLP, 518 control, p<0.001).

The cost difference narrowed over time, and was not significantly different in months 12-20.

A significant cost advantage was noted for continuing-DLP over ex-DLP-control group in months 30-34 (p=0.001), but not subsequently in months 35-45 (p=0.09).

There were no significant cost differences between continuing-DLP, and original controls (p=0.277) and between ex-DLP-control care and original controls (p=0.154) during months 35-45.

Weekly costs for the continuing-DLP sample over the full 45 months averaged 188, which is significantly less (p=0.002) than the costs for the original controls (287), but no different (p=0.328) from the costs for the ex-DLP-controls (218).

The continuing-DLP group cost significantly less (p=0.007) than the ex-DLP and original control groups combined (265).

Comparing the original samples, the DLP group cost significantly less than the control group (202 to 287, p=0.002).

Synthesis of costs and benefits
Home-based DLP was a cost-effective alternative to standard hospital-based care for people with serious mental illness.
both in the short term (months 1-20) and also over the full 45-months period. However, the DLP appeared to lose its cost-effectiveness advantage in the final year of the research period.

**Authors’ conclusions**
The reduction of the cost-effectiveness advantage for home-based care was perhaps partly due to the attenuation of DLP care, although sample attrition left some comparisons under-powered.

**CRD COMMENTARY - Selection of comparators**
The rationale for the choice of the comparator was clear. You, as a user of this database, should verify whether these health technologies are relevant to your setting.

**Validity of estimate of measure of benefit**
Relevant measures of benefit were examined. Sample attrition and non-randomisation of the original control patients at the start of Phase II (only patients in the Phase I DLP sample, not in the control sample, were randomised in the withdrawal design) raised the possibility of bias from drop-outs. Moreover, as the authors acknowledge, sample attrition left some of the comparisons under-powered.

**Validity of estimate of costs**
All relevant direct and indirect costs were assessed. Cost estimates were derived from local sources and are unlikely to be generalisable to other settings. No sensitivity analysis on costs was reported. Direct costs related to home-based DLP and hospital care were not presented separately from indirect costs related to accommodation, lost productivity, and criminal justice services. Costs and quantities were not presented separately which limits the generalisability of the results.

**Other issues**
The study may have suffered from a small sample size and a short-term perspective. Adequate comparisons with other relevant studies were made although the generalisability of the results to other settings or countries was not discussed. The authors do not appear to have presented their results selectively. The study enrolled patients with serious mental illness and this was reflected in the authors’ conclusions.

**Implications of the study**
Future research should focus on the relationship between time and the cost-effectiveness of home-based DLP care.

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