Systematic reviews of the effectiveness of day care for people with severe mental disorders:
(1) acute day hospital versus admission for acute psychiatric disorders; (2) vocational rehabilitation; (3) day hospital versus outpatient care


Authors' objectives
To assess the effectiveness and feasibility of day hospital versus in-patient care for people with acute psychiatric disorders, by carrying out three systematic reviews: (1) acute day hospital care versus admission to hospital; (2) vocational rehabilitation versus standard care (without vocational rehabilitation); and (3) day hospital care versus outpatient care. The systematic reviews of vocational rehabilitation versus standard care and day hospital care versus outpatient care have been published as Cochrane reviews (see Other Publications of Related Interest nos.1-2), thus only the systematic review of acute day hospital care versus admission to hospital is reported in this abstract.

Searching
The Cochrane Controlled Trials Register (Issue 2, 1999), MEDLINE (from 1966 to December 1998), EMBASE (from 1980 to December 1998), CINAHL (from January 1982 to December 1998) and PsycLIT (from 1966 to December 1998) were searched using the following free text search strategy: 'day hosp*' or 'day care' or 'day treatment*' or 'day cent*' or 'day unit*' or 'partial hosp*' or 'ambulatory treatment' or 'ambulatory care' or 'dispensary' combined with the MeSH term 'mental illness' and with the Cochrane Collaboration's strategy for potential trials and reviews. Additional published and unpublished trials were identified by scanning the reference lists of all the identified trials and reviews and by contacting experts in the field.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials were included.

Specific interventions included in the review
Admission to an acute psychiatric day hospital compared with admission to in-patient care. An acute psychiatric day hospital was defined as a unit that provided diagnostic and treatment services for acutely ill patients who would otherwise be treated on traditional psychiatric in-patient units.

Participants included in the review
Patients with acute psychiatric disorders (all diagnoses) who would have been admitted to in-patient care if day hospital admission had been unavailable. Studies were not eligible if they were largely restricted to patients who were aged under 18 years or over 65 years, or to those with a primary diagnosis of substance abuse and/or organic brain disorder.

Outcomes assessed in the review
There were four main outcome measures.

1. Feasibility and engagement: the proportion of patients suitable for day patient care, and the numbers lost to follow-up,

2. The extent of hospital care: the duration of initial admission; days in in-patient care; days in day patient care; days in in-patient or day patient care; and the number readmitted to in-patient or day patient care after discharge,

3. Clinical and social outcomes: mental state at various time points; social functioning at various time points; burden on carers at various time points; deaths (suicide/homicide/all cause); if employed at the end of the study; and satisfaction with care (patients and relatives).

4. The costs of care: cost of index admission; cost of hospital care (mean monthly, comprising the cost of index
admission plus the cost of subsequent admissions); cost of psychiatric care (mean monthly, comprising the cost of psychiatric care plus the cost of all ambulatory psychiatric care); cost of all care (mean monthly, comprising the cost of psychiatric care plus the costs of other medical or social care but excluding wages, costs to the relatives and transfer payments).

How were decisions on the relevance of primary studies made?
Two reviewers independently evaluated the abstracts and full articles to decide which met the inclusion criteria.

Assessment of study quality
The quality of all the included trials was rated according to three quality categories described in the Cochrane Collaboration Handbook: randomisation, allocation concealment and handling of withdrawals. Two reviewers rated the quality of all the included trials. It is not stated whether the quality rating was performed independently or whether blinding was applied. Any individual patient data (IPD) received were verified against the original trial reports, to ensure both the accuracy of the meta-analysis database and the quality of randomisation and follow-up.

Data extraction
IPD were sought from trialists for all patients randomised in eligible trials (published or unpublished). The data requested were: age; gender; diagnosis; randomisation status; social functioning at various time points; mental state at various time points; satisfaction with care; days in hospital; days in day hospital; time to discharge; the number readmitted; deaths; if employed at the end of the study; and the costs of care.

For trials in which IPD were unavailable, categorical and continuous data were extracted separately from the trial reports by two reviewers and cross-checked. Data were excluded if they could not be analysed on an intention to treat basis, were collected using unpublished scales, or were available on less than 50% of the randomised participants.

The feasibility of day treatment was defined as the percentage reduction in acute in-patient admissions that could be achieved by diverting patients to an acute day hospital. It was estimated using a modification of the method of Kluiter et al. (see Other Publications of Related Interest no.3). Continuous variables, such as days in hospital, were converted to a single common scale (e.g. mean days in hospital per month). The time spent in the day hospital was adjusted so that ‘days in day hospital' represented the actual number of attendances at the day hospital (including missed days), rather than the total time for which the patient was a day hospital patient. The outcomes for mental state and social function for each study were standardised to give variables with a zero mean and a standard deviation of 1.

Methods of synthesis
How were the studies combined?
The relative risk and 95% confidence intervals (CIs) were calculated for dichotomous data. The weighted or standardised means were calculated for continuous data. The trials tended to present similar outcomes in slightly different formats, making it difficult to synthesise the data. IPD were therefore sought so that the outcomes could be reanalysed using a common format. The mental state and social function outcomes were pooled using a multilevel statistical model that allowed for individual variation between patients within the treatment groups. A full model with a time-intervention group interaction was compared with a reduced model excluding this term.

How were differences between studies investigated?
Where the categorical data were pooled, a chi-squared test for homogeneity was carried out. When heterogeneity was present, the data were reanalysed using a random-effects model, and efforts were made to identify the main source of the heterogeneity.

A sensitivity analysis of feasibility was performed to give a ‘best' and 'worst' estimate of feasibility for each included trial.

Mental state and social function outcomes were analysed by the covariates age, gender and diagnosis.
Results of the review
Nine RCTs (n=1,568) were included. IPD were obtained for four of these trials (n=594).

A sensitivity analysis of the combined data suggested that day hospital treatment was feasible for at worst, 23.2% (n=2,268, 95% CI: 21.2, 25.2), and at best, 37.5% (n=1,768, 95% CI: 35.2, 39.8) of those currently admitted to in-patient care. IPD from three trials showed no difference in the number of days in hospital (combining day hospital days and in-patient days) between the day hospital patients and controls (n=465; weighted mean difference, WMD -0.38 days, 95% CI: -1.32, 0.55). However, compared with controls, the patients randomised to day hospital care spent significantly more days in day hospital care (n=265, WMD 2.34 days/month, 95% CI: 1.97, 2.70) and significantly fewer days in in-patient care (n=265, WMD -2.75 days/month, 95% CI: -3.63, -1.87). There was no difference between the readmission rates for day hospital and control patients (n=667, relative risk 0.91, 95% CI: 0.72, 1.15). IPD from three trials showed a significant time-treatment interaction, indicating a more rapid improvement in mental state (n=407, chi-squared 9.66, p=0.002) but not social functioning (n=295, chi-squared 0.006, p=0.941) amongst day hospital patients.

Cost information
Four of the five trials demonstrated that day hospital care was cheaper than in-patient care; the overall cost reductions ranged from 20.9 to 36.9%.

Authors' conclusions
Acute day hospitals are an attractive option in situations where demand for in-patient care is high and facilities exist that are suitable for conversion. They are a less attractive option when demand for in-patient care is low and where effective alternatives already exist. The interpretation of day hospital research would be enhanced if future trials made use of the common set of outcome measures used in this review. It is important to examine how acute day hospital care can be most effectively integrated into a modern community-based psychiatric service.

CRD commentary
The review question and the study selection criteria were clearly stated and applied. Details of the review process, such as how many of the reviewers performed the study selection and data extraction processes and validity assessment, were provided and were adequate. The literature search seemed comprehensive although it was unclear whether language restrictions were applied. The validity assessment was adequate. Details of the included studies were presented. The review is unusual in that summary data from trial reports was supplemented by IPD where this were available, and additional analyses were carried out. The meta-analysis and sensitivity analysis seemed appropriate.

The authors' conclusions seem representative of the results presented in the review, but they also address broader issues that were not directly examined in the review.

Implications of the review for practice and research
Practice: The authors state that the decision to establish an acute day hospital must be made after careful consideration of local problems and resources.

Research: The authors state the following. 1. There is a need for a multicentre randomised controlled trial to show how far the findings from the present small number of centres can be more widely replicated across a range of services and settings. Future trials should make use of the common set of outcome measures used in this review and should also take care to report data on mortality and other untoward events. 2. It may be of interest to compare the two approaches to day hospital care found in the review. 3. It would be of interest to explore the relative cost-effectiveness of the US and UK approaches to acute day hospital care, i.e. rapid discharge versus gradual discharge. 4. It would be useful to examine why the patients' psychiatric symptoms appear to resolve more rapidly when they are receiving day care, e.g. does hospital admission worsen symptoms of depression or anxiety?
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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.