Residential alternatives to acute psychiatric hospital admission: systematic review
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CRD summary
The authors concluded that community-based residential services may provide a feasible and cost-effective alternative to hospital admission for some patients with acute mental illness. The authors’ conclusions reflected the evidence presented but, due to lack of reporting on certain review processes, their reliability is unclear.

Authors' objectives
To examine the effectiveness and cost-effectiveness of, and satisfaction with residential alternatives to acute psychiatric hospital admission.

Searching
MEDLINE, PsycINFO, Web of Science, CINAHL, EMBASE, the Cochrane Library and NHS EED were searched from inception to February 2008; search terms were reported. There were no language restrictions. Reference lists of retrieved articles and review articles were also searched. Directories of conference proceedings were also searched for grey literature. The reviewers contacted experts to identify papers in press and additional unpublished papers.

Study selection
Controlled trials and one-group interrupted time series studies of adults (aged 16 to 65 years) requiring acute psychiatric in-patient admission, that compared residential acute mental health services to standard acute in-patient mental health services, were eligible for inclusion. It appeared that in addition, the authors intended to include only those studies rated as moderate or high quality according to the criteria listed in the validity assessment.

The interventions evaluated in the review were community-based services (e.g. non-hospital services such as crisis houses and adult family placements), time-limited services (services offering admission with a time limit), and interventions comprising specific therapeutic models (involving changes to the working practices of more than one professional group). The patients in the included studies all required acute admission, including patients with schizophrenia.

The authors did not state any primary outcomes a priori, but reported any outcomes relating to clinical improvement, social functioning, service use, costs or cost effectiveness, or satisfaction with services. A wide range of assessment tools were used to measure clinical status and social function of the included patients.

Two reviewers independently selected the studies for inclusion; any disagreements were resolved by discussion and by a third reviewer.

Assessment of study quality
The methodological quality of the included studies was assessed using a an adapted quality assessment tool by Thomas (2003). Studies were judged to be strong, moderate or weak on the basis of potential selection bias, allocation bias, accounting for confounders, masking, data collection methods and withdrawals. The authors stated that the analysis strategy and intervention integrity of the studies was also appraised, and operational criteria were then generated from the quality ratings to classify studies as high, moderate or low quality.

The authors did not state how many reviewers performed the quality assessment.

Data extraction
Data were collected on outcomes as reported in each study. The data were abstracted using a standard data abstraction form, but the authors did not report how many reviewers performed the data extraction.

Methods of synthesis
The results were presented in a narrative summary because of substantial heterogeneity of interventions and patients. Tables of individual study data accompanied the text (some data was given in supplementary online tables, see URL for Additional Data).

**Results of the review**

Twenty-seven studies were included in the review (n=9,705 patients, although four studies did not state sample sizes). There were no high quality studies; all the studies were rated as either moderate or low quality. The outcomes of nine studies, judged to be of moderate quality, were analysed including community-based services (two prospective non-randomised quasi-experimental studies, four randomised controlled trials; n=810 patients), and time-limited services (three studies; n=425 patients). Follow-up ranged between 30-days post discharge and one year in the studies of community-based services, and between three months and one year for the time-limited services studies.

Significant differences favouring the use of community-based residential services were observed in the clinical outcomes measured by the Veteran’s version of the Short-Form Health Survey (n=99 patients; p=0.02) and in another study, the Global Assessment of Functioning questionnaire (n=177 patients; p=0.02) the Hamilton Rating Scale for Depression (p=0.01) and the Present State Examination (p=0.001). Homelessness at discharge was found to be statistically significantly less in one study (n=99 patients; p=0.001).

Overall satisfaction with community-based services was observed to be higher in one study as measured by the Verona Service Satisfaction Scale in one study (n=117 patients; p=0.02) and by the Perceptions of Care Questionnaire in a second study (n=99 patients; p=0.05) and by the Treatment Effectiveness Scale in a third study (n=85 patients; p<0.001 at discharge and p<0.01 at four-month follow-up).

There were no statistically significant differences observed between community-based services or time-limited services and standard acute mental health services in the other studies on measures of clinical improvement, social functioning, post-treatment admissions and homelessness.

**Cost information**

Two studies found statistically significant lower costs of admission with alternative community-based services. One trial (n=230 patients) had a lower one-year cost (22,000 US dollars ($) compared with $33,000; p=0.02). In another trial (n=119 patients), the cost of index admission with community-based services was $3,046 compared to $5,549 for standard treatment (p<0.001).

In one trial (n=230), there were cost benefits observed favouring the use of standard medical services with significantly less total in-patient bed days (78 days compared with 86 days; p<0.01) and shorter length of index admission (26 days compared with 55 days; p<0.001) than for community-based services. The latter finding was also observed in another trial (n=119 patients) with a length of index admission for standard services of 12 days compared with 19 days for the alternative community-based services (p<0.002).

There were no significant differences in cost effectiveness observed between standard services and community-based services in two studies, although one of these studies found that the cost to the NHS was higher at alternative services (data not stated).

There were shorter lengths of index admission observed with time-limited alternative residential services compared with standard acute services (nine days compared with 50 days; no p-value stated) and fewer inpatient days over two-year follow-up (47 days compared with 115 days; p<0.001).

**Authors’ conclusions**

Community-based services may provide a reasonable and acceptable alternative for some patients, but additional research is required to identify target populations for these services. More research is also needed to establish the effectiveness of alternative acute mental health service models.

**CRD commentary**

The review addressed a clear question that was broad in scope. The search was adequate and attempts were made to
identify unpublished studies. No language restrictions were applied to the search. Although the inclusion criteria were clearly stipulated, the methodological assessment appeared to be used as a tool for selecting studies for inclusion in the analysis. Consequently, the results of only a small proportion of the included patients were analysed in any way in the review. Steps were taken to minimise reviewer error and bias for study selection, but were not reported for the methodological quality assessment or for data extraction. The decision by the reviewers to present the results in a narrative summary was justified, given the substantial heterogeneity in patients and outcome measurements.

The authors’ conclusions reflected the evidence presented but, due to lack of reporting on certain review processes, their reliability is unclear.

Implications of the review for practice and research

Practice: The authors stated that the review found no evidence against alternative models of care and indicated that the provision of crisis beds in non-hospital settings may increase satisfaction for some patients.

Research: The authors stated that there is a need for further high quality evaluation of acute mental health services offering alternatives to admission to standard mental health units. In addition, more information is required about the precise elements of care provided in alternative residential settings. Given the challenges of conducting randomised controlled trials in acute mental health settings, the use of well-designed non-randomised studies may have an important role in acute mental health research. Other aspects identified by the authors when considering research in this area included: the evaluation of established enduring alternatives to investigate whether satisfaction is sustainable and not a function of service novelty; and how users of residential alternatives compare with people receiving crisis-at-home treatment to gain information about the extent to which alternatives serve patients who cannot be adequately treated at home.

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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.