Models of community care for severe mental illness: a review of research on case management
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Authors' objectives
To evaluate the effectiveness of different models of case management for persons with severe mental illness.

Searching
Relevant articles, presentations, reports to government granting agencies, and unpublished papers were identified through literature reviews, searches of computer databases, attendance at conferences, the researchers own knowledge of the literature and contacts with other researchers in the field. The databases searched, the search terms used and the dates of the search were not stated.

Study selection
Study designs of evaluations included in the review
There were no restrictions on study design. Random assignment, quasi-experimental and pre-post studies were included in the review. Studies were included in the review if they met at least one of two criteria:

1. Assessments were conducted at a follow-up point for two groups of patients receiving different models of community care (including studies comparing a case management model with another programme or service).

2. Assessments were conducted at baseline and follow-up for patients receiving one model of case management ("pre-post" studies).

The median follow-up time was 18 months (range 3 to 60 months).

Specific interventions included in the review
Various models of case management (also known as community care models) which include: standard case management (broker and clinical case management models), rehabilitation-oriented community care (strengths and rehabilitation models) and intensive comprehensive care (assertive community treatment (ACT) and intensive case management (ICT) models). Controls included: research unit controls, other unit controls, drop-in centre attendees, psychosocial rehabilitation recipients, and people receiving no case management.

Participants included in the review
Patients with severe mental illness. The median percentage of patients with schizophrenia/schizoaffective disorder was 66% (range 22-100%).

Outcomes assessed in the review
Time in hospital, symptoms, social adjustment (refers to the quality of social relationships), housing stability, jail/arrests, substance abuse, medication compliance, quality of life (the patient's subjective satisfaction with different areas of living, such as housing, finances, relationships and health), vocational functioning, patient and relative satisfaction (with treatment).

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.
Data extraction
The findings of the different studies were coded by two of the authors with a third author resolving discrepancies.

Methods of synthesis
How were the studies combined?
The studies were combined in a qualitative narrative.

How were differences between studies investigated?
Tests for heterogeneity were not reported.

Results of the review
Seventy-five studies were included, with the following experimental designs: controlled random assignment (n=32), non-controlled quasi-experimental (n=18) and non-controlled pre-post (n=25). The median number of participants was 90 (range 15 to 873).

The median attrition rate was 17% (range 0-53%).

Only the results of the 32 controlled randomly assigned studies will be reported here.

Time in hospital: Of 23 studies that examined hospitalisation time, 14 (61%) reported significant reductions compared to the control group. The authors state that some of the null findings can be explained by the relatively small sample sizes and implementation problems of the studies. Only one ACT or ICM study reported negative effects of ICM on time in hospital.

Housing stability: In 9 of 12 (75%) studies, ACT or ICM improved housing stability or independence.

Time in jail: Only 2 of 10 studies reported reductions in time in jail with ACT or ICM.

Symptoms: Among the 16 studies that evaluated symptomatology, 8 (50%) reported significant reductions in symptoms.

Medication compliance: The effect of ACT or ICM on medication compliance is unclear because few studies have examined this domain. Four studies have examined medication compliance, with two reporting improvements and two reporting no changes.

Substance abuse: Only six studies examined the effects of ACT or ICM on substance abuse, with one study reporting improvements and five studies finding no differences.

Social Adjustment: Only 3 of 14 (21%) of studies reported positive effects of ACT or ICM on social functioning.

Vocational functioning: Three studies found positive effects of ACT or ICM on vocational training, and five reported no benefits.

Quality of life: Seven studies reported positive effects of ACT or ICM on quality of life and six found no effects.

Patient and relative satisfaction: Six out of seven studies reported higher patient satisfaction, while two out of four studies reported higher satisfaction for relatives with ACT or ICM.

Reducing or withdrawing ACT or ICM programmes: Five studies which examined what happens when ACT or ICM services are reduced in intensity or withdrawn altogether suggested that there was some deterioration in gains.

Controlled studies of other community care models: Only five studies have examined other community care models. Two studies reported some positive effects of the strengths models, but both of these studies had limitations such as small sample size and short follow-up period. Each of the three remaining controlled studies examined a different
model of community care: standard case management, community nursing teams, and critical time intervention for homelessness. The findings of these studies were inconclusive.

The results of non-controlled studies were tabulated in the report, but not discussed.

**Cost information**
Yes. Most studies of cost-effectiveness of community care models have focused on ACT, with many reporting net savings and a few finding no difference. A number of factors may account for the variable effects of community care on cost across different models and settings. Patient and contextual characteristics may be especially critical. There is a general consensus that ACT-like models are most effective when provided to patients who have a history of high service use, since such approaches can reallocate the use of expensive hospital based services to less costly, community treatment.

**Authors' conclusions**
Controlled research on ACT and ICM indicates that these models reduce time in the hospital and improve housing stability, especially among patients who are high service users. ACT and ICM appear to have moderate effects on improving symptomatology and quality of life. Most studies suggest little effect on ACT and ICM on social functioning, arrests and time spent in jail, or vocational functioning. Studies on reducing or withdrawing ACT or ICM services suggest some deterioration in gains. Research on other models of community care is inconclusive.

**CRD commentary**
The review addresses a well defined question. Inclusion and exclusion criteria were appropriate. The authors do not state which databases they have searched, or the search terms or dates used. The search could have been extended to include handsearching of journals. The validity of the included studies was not assessed. Although some details of the individual studies were presented, the actual results of each study were not given. The authors only reported whether a particular type of case management was better, worse or equivalent to another. There was no indication whether or not these differences were significant. The non-controlled studies were not summarised, even though they were included in the tables. The conclusions follow from the results.

**Implications of the review for practice and research**
The authors made the following suggestions for future research in community care models.

1. To evaluate the fidelity of model implementation to explore determinants of positive and negative outcomes.
2. To compare different models of community care which have employed measures of the activity of case managers.
3. To determine the impact of geography (rural versus urban areas) on the critical ingredients of community care.
4. To examine the mechanisms underlying the effects of community care models e.g. to evaluate the effect of ACT or ICM on medication adherence or to explore whether medication mediates reductions in hospitalisation.
5. To evaluate the predictive relationship between the patient-case manager alliance and outcome in patients with severe mental illness.
6. To examine the relationship between specific patient characteristics and response to either different models or facets of community care.

The authors suggest that rather than focus research on a "horse race" between two or more competing models, it may be more fruitful to attempt to predict who will respond best to which model, or which components of a given model.
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