

Appendix 15d: Service-level interventions study characteristics tables

Please note that all of the references and the data in this appendix have been incorporated from the previous guideline and have therefore not been updated to reflect current house style.

Full terms of abbreviations are listed at the back of the guideline, except in some instances where they are explained in situ.

An asterisk next to an author's name indicates that their study is the primary study.

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Community Mental Health Teams (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
<p>Tyrer P, Coid J, Simmonds S, Joseph P, Marriott S.</p> <p>Community mental health teams (CMHTs) for people with severe mental illnesses and disordered personality (Cochrane Review).</p> <p>In: <i>The Cochrane Library</i>, Issue 1, 2002. Oxford: Update Software.</p>	<ol style="list-style-type: none"> 1. Systematic review of randomised or quasi-randomised controlled trials. 2. Intramural sources of support to the review: Imperial College School of Medicine, North West London Mental Health Services NHS Trust, St Bartholomew's Hospital, and Royal London School of Medicine and Dentistry, London UK. Extramural sources of support to the review: North Thames Regional Health Authority, London UK. 3. Database origin to 1998. 4. Where possible the data were entered into RevMan and an intention-to-treat analysis undertaken. Tests of heterogeneity were undertaken. 5. 5 (3 after excluding three studies from original review and including one new trial). 6. 709 (344). 	<ol style="list-style-type: none"> 1. Community Mental Health Team: management of care from a multidisciplinary, community-based team (that is more than a single person designated to work within a team). 2. Standard or usual care: must be stated to be the normal care in the area concerned. This could be non-team community care, outpatient care, admission to hospital (where acutely ill people were diverted from admission and allocated CMHT or inpatient care), or day hospital. <p>The primary question of interest for this review is the value of CMHT management. Where this management was 'confounded' by a specific intervention, such as case management or a team strategy (for example, Assertive Community Team management (ACT)), studies were excluded. However, if both groups, CMHT and</p>	<p>The primary outcomes of interest were:</p> <ol style="list-style-type: none"> 1. Death. 2. Violence; <ol style="list-style-type: none"> 2.1 to others. <ol style="list-style-type: none"> 2.1.1 specific/ major (eg. homicide, sex attacks, attempted or actual serious assault, arson); and 2.1.2 non-specific/non-major (incidents requiring attendance of police or on-ward seclusion or special civil-law admissions to a place of safety). 2.2 to self. <ol style="list-style-type: none"> 2.2.1 fatal; and 2.2.2 non-fatal; 3. Acceptability of management as measured by loss to follow-up within the study. 4. General improvement. <p>Additional outcomes were sought on:</p> <ol style="list-style-type: none"> 1. Hospitalization. <ol style="list-style-type: none"> 1.1 admitted or not; and 1.2 days in hospital. 2. Symptoms of serious mental illness. <ol style="list-style-type: none"> 2.1 relapse; and 2.2 average change in symptoms. 3. Quality of life. 4. Participant and carer satisfaction. 5. Social functioning. <ol style="list-style-type: none"> 5.1 homelessness; 5.2 employment; 5.3 average change in social functioning. 6. Economic costs of all care and health care. <p>Outcome measures were selected which provided global estimations of functioning. Highly specific outcomes, such as, for example, 'sense of safety' were not reported. Such specific outcomes are rarely reported in more than one study and it is difficult to assess their relevance to the effectiveness of the treatment. Other outcomes not readily falling into these categories were also recorded but were not of pre-stated interest.</p>

Study characteristics tables: Community Mental Health Teams

		'standard care', received the specific intervention, then the study was appropriate to include.	Outcomes were divided into short-term (less than 3 months) medium-term (3-12 months) and long-term (over 1 year).
New RCTs	Gater-Manchester 1997 (N=89).		
RCTs excluded from original review	Burns-London 1993: inadequate allocation concealment. Fenton-Montreal 1979 (N=162); Hoult-Sydney 1981 (N=120): based on GDG definitions, these studies were deemed to be Crisis Interventions rather than CMHTs.		
Additional notes for quality assessment			
Author's objective	To evaluate the effects of community mental health team (CMHT) treatment for anyone with serious mental illness.		
What methods were used to identify primary studies?	Electronic searches of Biological Abstracts (1982-1997), the Cochrane Library (1998, Issue 2), EMBASE (1980-1997), MEDLINE (1966-1997), PsycLIT (1974-1997) and SCISEARCH (1997) were undertaken. The Journal of Personality Disorders was hand searched, and contact was made with colleagues at ENMESH, ISSPD and in forensic psychiatry.		
How were the inclusion criteria applied and what were they?	<p>1) Randomised or quasi-randomised controlled trials. 2) Participants: any individual presenting to, or being referred to, adult psychiatric services with severe mental illness (however diagnosed). 3) Appropriate intervention groups (see 'Interventions'). 4) Relevant outcomes (see 'Reported Outcomes').</p> <p>The search for trials was performed by SS. The first stage of selection was undertaken independently, and in parallel, by SS and PT. The abstracts, titles and descriptor terms of all downloaded material from the electronic searches were read and irrelevant reports discarded to create a pool of potentially eligible studies. These two pools were then merged and the selected original articles obtained. SS and PT separately evaluated the acquired studies and decided which should be included. Agreement was evaluated by the kappa statistic and if overall agreement was less than 0.75, the strategy of selection was reviewed. Where disagreement occurred a third reviewer (SM) was asked to resolve the dispute. Where resolution was not possible, the study was added to those awaiting assessment and the authors contacted for further data.</p>		
Criteria on which the validity (quality) of studies was assessed.	SS and PJ independently rated the quality of all included trials using the Jadad Scale. This rated the quality of reporting of randomisation, blindness and follow up of those who dropped out. Only trials reliably rating over 2 on this scale were included.		
How were the data extracted from the primary studies?	Data were independently extracted by SS and SM. Any disagreement was discussed, the decisions documented and, where necessary, the authors of the studies contacted to help resolve the issue.		

References to included studies

Gater-Manchester 1997 (published data only)

Gater R, Goldberg D, Jackson G, Jennett N, Lawson K, Ratcliffe J, Saraf T, Warner R. The care of patients with chronic schizophrenia: a comparison between two services. *Psychological Medicine* 1997;27:1325-36.

Merson-London 1992 (published and unpublished data)

Study characteristics tables: Community Mental Health Teams

Merson S, Tyrer P, Onyett S, Lack S, Birkett P, Lynch S, Johnson T. Early intervention in psychiatric emergencies: a controlled clinical trial. *Lancet* 1992;339:1311-4.

Tyrer P, Merson S, Onyett S, Johnson T. The effect of personality disorder on clinical outcome, social networks and adjustment: a controlled clinical trial of psychiatric emergencies. *Psychological Medicine* 1994;24:731-40.

Merson S, Tyrer P, Carlen D, Johnson T. The cost of treatment of psychiatric emergencies: a comparison of hospital and community services. *Psychological Medicine* 1996;26:727-34.

Tyrer-London 1998 (published data only)

Gandhi N, Tyrer P, Evans K, McGee A, Lamont A, Harrison-Read P. A randomized controlled trial of community-oriented and hospital-oriented care for discharged psychiatric patients: influence of personality disorder or police contacts. *Journal of Personality Disorders* 2001;15(1):94-102.

Tyrer P, Evans K, Gandhi N, Lamont O, Harrison-Reed P, Johnson T. Randomised controlled trial of two models of care for discharged psychiatric patients. *BMJ* 1998;316:106-9.

References to excluded studies

Audini 1994

Audini B, Marks IM, Lawrence RE, Connolly J. Home-based versus out-patient/in-patient care for people with serious mental illness: Phase II of a controlled study. *British Journal of Psychiatry* 1994;165:204-10.

Bedell 1989

Bedell J, Ward JC. An intensive community-based treatment alternative to state hospitalization. *Hospital and Community Psychiatry* 1989;40:533-5.

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Bond GR, Miller LD, Krumwied RD, Ward RS. Assertive case management in three CMHCs: A controlled study. *Hospital and Community Psychiatry* 1988;39:411-8.

Bond 1990

Bond GR, Witheridge TF, Dincin J, Wasmer D, Webb J, De Graaf Kaser R. Assertive community treatment for frequent users of psychiatric hospitals in a large city: a controlled study. *American Journal of Community Psychology* 1990;18:865-91.

Coelho 1993

Coelho RJ, Kelley PS, Deatsman-Kelley C. An experimental investigation of an innovative community treatment model for persons with a dual diagnosis (DD/MI). *Journal of Rehabilitation* 1993;59:37-42.

Connolly 1996

Connolly J, Marks I, Lawrence R, McNamee G, Muijen M. Observations from community care for serious mental illness during a controlled study. *Psychiatric Bulletin* 1996;20:3-7.

Crosby 1993

Study characteristics tables: Community Mental Health Teams

Crosby C. Health Services Research Unit (HSRU) University College of North Wales: Evaluation of the strategy for mental illness services in North Wales. *Journal of Mental Health UK* 1993;2:85-8.

Cuffel 1994

Cuffel BJ. Violent and destructive behavior among the severely mentally ill in rural areas: evidence from Arkansas' community mental health system. *Community Mental Health Journal* 1994;30:495-504.

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De-Cangas JPC. Psychiatric nursing assertive case management: a comprehensive evaluation of the effectiveness and outcomes of hospital based treatment versus a nurse directed assertive case management program. *International Journal of Psychiatric Nursing Research* 1995;1:72-81.

Dick 1991

Dick PH, Sweeney ML, Crombie IK. Controlled comparison of day-patient and out-patient treatment for persistent anxiety and depression. *British Journal of Psychiatry* 1991;158:24-7.

Essock 1995

Essock SM, Kontos N. Implementing assertive community treatment teams. *Psychiatric Services* 1995;46:679-83.

Ferguson 1992

Ferguson B, Cooper S, Brothwell J, Markantonakis A. The clinical evaluation of a new community psychiatric service based on general practice psychiatric clinics. *British Journal of Psychiatry* 1992;160:493-7.

Ford 1995

Ford R, Beadsmoore A, Ryan P, Repper J, Craig T, Muijen M. Providing the safety net: Case management for people with a serious mental illness. *Journal of Mental Health* 1995;4:91-7.

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Franklin JL, Solovitz B, Mason M, Clemons JR, Miller GE. An evaluation of case management. *American Journal of Public Health* 1987;77:674-8.

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Heitger B, Saameli W. Wirksamkeit einer psychiatrischen Tagesklinikbehandlung. Eine empirische Untersuchung aus den Psychiatrischen Diensten des Regionalspitals Thun [Effectiveness of treatment in a psychiatric day hospital]. *Schweizer Archiv für Neurologie und Psychiatrie* 1995;146:33-8.

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Husted J, Wentler SA, Bursell A. The effectiveness of community support programs for persistently mentally ill in rural areas. *Community Mental Health Journal* 1994;30:595-600.

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Study characteristics tables: Community Mental Health Teams

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Kovess 1988

Kovess V, Lafleche M. How do teams practise community psychiatry? Canada's Mental Health 1988;36:9-16.

Krupinski 1984

Krupinski J, Lippmann L. Multidisciplinary or nondisciplinary: Evaluation of staff functioning in a community mental health centre. Australian and New Zealand Journal of Psychiatry 1984;18:172-8.

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Kuldau JM, Dirks SJ. Controlled evaluation of a hospital-originated community transitional system. Archives of General Psychiatry 1977;34:1331-40.

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Kwakwa J. Alternatives to hospital-based mental health care. Nursing Times 1995;91:38-9.

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Lafave HG, De Souza HR, Gerber GJ. Assertive community treatment of severe mental illness: A Canadian experience. Psychiatric Services 1996;47:757-9.

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Leff J, Trieman N, Gooch C. Team for the assessment of psychiatric services (TAPS) project 33: Prospective follow-up study of long-stay patients discharged from two psychiatric hospitals. American Journal of Psychiatry 1996;153:1318-24.

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Linn MW, Caffey EM, Klett CJ, Hogarty G. Hospital vs community (foster) care for psychiatric patients. Archives of General Psychiatry 1977;34:78-83.

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Macias C, Kinney R, Farley OW, Jackson R, Vos B. The role of case management within a community support system: partnership with psychosocial rehabilitation. Community Mental Health Journal 1994;30:323-39.

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Marks IM, Connolly J, Muijen M, Audini B, McNamee G, Lawrence RE. Home-based versus hospital-based care for people with serious mental illness. *British Journal of Psychiatry* 1994;164:179-94.

Marshall 1995

Marshall M, Lockwood A, Gath D. Social services case-management for longterm mental disorders: A randomised controlled trial. *Lancet* 1995;345:409-12.

McClary 1989

McClary S, Lubin B, Evans C, Watt B. Evaluation of a community treatment program for young adult schizophrenics. Special Issue: Post-traumatic stress disorder. *Journal of Clinical Psychology* 1989;45:806-8.

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McCrone P, Beecham J, Knapp M. Community psychiatric nurse teams: cost-effectiveness of intensive support versus generic care. *British Journal of Psychiatry* 1994;165:218-21.

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Modcrin M, Rapp CA, Poertner J. The evaluation of case management services with the chronically mentally ill. *Evaluation and Program Planning* 1988;11:307-14.

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Muijen 1992b

Muijen M, Marks I, Connolly J, Audini B. Home based care and standard hospital care for patients with severe mental illness: a randomised controlled trial. *British Medical Journal* 1992;304:749-54.

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Muijen M, Cooney M, Strathdee G, Bell R, Hudson A. Community psychiatric nurse teams: intensive support versus generic care. *British Journal of Psychiatry* 1994;165:211-7.

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Paykel ES, Mangen SP, Griffith JH, Burns TP. Community psychiatric nursing for neurotic patients: A controlled trial. *British Journal of Psychiatry* 1982;140:573-81.

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Piper WE, Rosie JS, Azim HFA, Joyce AS. A randomized trial of psychiatric day treatment for patients with affective and personality disorders. *Hospital and Community Psychiatry* 1993;44:757-63.

Study characteristics tables: Community Mental Health Teams

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Quinlivan 1995

Quinlivan R, Hough R, Crowell A, Beach C, Hofstetter R, Kenworthy K. Service utilization and costs of care for severely mentally ill clients in an intensive case management program. *Psychiatric Services* 1995;46:365-71.

Rosenheck 1995

Rosenheck R, Neale M, Leaf P, Milstein R, Frisman L. Multisite experimental cost study of Intensive Psychiatric Community Care. *Schizophrenia Bulletin* 1995;21:129-40.

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Ruphan M, Kluiters H, Nienhuis FJ, Wiersma D, Giel R. Opnamevervangende dagbehandeling bij psychiatrische patienten: Effecten op het sociale functioneren, twee jaar na de start van een gecontroleerd experiment [Day-treatment versus inpatient treatment for psychiatric patients in need of admission: Longitudinal effects on social role-functioning studied by means of randomized trial]. *Tijdschrift voor Psychiatrie* 1992;34:571-83.

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Rushton A. Community-based versus hospital-based care for acutely mentally ill people. *British Journal of Social Work* 1990;20:373-83.

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Sands RG, Cnaan RA. Two modes of case management: assessing their impact. *Community Mental Health Journal* 1994;30:441-57.

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Schene AH, Van Wijngaarden B, Poelijoe NW, Gersons BPR. The Utrecht comparative study on psychiatric day treatment and inpatient treatment. *Acta Psychiatrica Scandinavica* 1993;87:427-36.

Slavinsky 1982

Slavinsky AT, Krauss JB. Two approaches to the management of long-term psychiatric outpatients in the community. *Nursing Research* 1982;31:284-9.

Smith 1974

Smith WG, Kaplan J, Siker D. Community mental health and the seriously disturbed patient: First admission outcomes. *Archives of General Psychiatry* 1974;30:696.

Smith 1975

Smith WG. Evaluation of the clinical services of a regional mental health center. *Community Mental Health Journal* 1975;11:47-57.

Solomon 1994

Solomon P, Draine J, Meyerson A. Jail recidivism and receipt of community mental health services. *Hospital and Community Psychiatry* 1994;45:793-7.

Schizophrenia (update): Appendix 15d

Study characteristics tables: Community Mental Health Teams

Solomon 1995a

Solomon P, Draine J. Consumer case management and attitudes concerning family relations among persons with mental illness. *Psychiatric Quarterly* 1995;66:249-61.

Solomon 1995b

Solomon P, Draine J. One -year outcomes of a randomized trial of case management with seriously mentally ill clients leaving jail. *Evaluation Review* 1995;19:256-73.

Solomon 1995c

Solomon P, Draine J. One-year outcomes of a randomized trial of consumer case management. *Evaluation and Program Planning* 1995;18:117-27.

Stein 1975

Stein LI, Test MA, Marx AJ. Alternative to the hospital: A controlled study. *American Journal of Psychiatry* 1975;132:517-22.

Tyrer 1995

Tyrer P, Morgan J, Van Horn E, Jayakody M, Evans K, Brummell R. A randomised controlled study of close monitoring of vulnerable psychiatric patients. *Lancet* 1995;345:756-9.

Wiersma 1991

Wiersma D, Kluiters H, Nienhuis FJ, Ruphan M. Costs and benefits of day treatment with community care for schizophrenic patients. *Schizophrenia Bulletin* 1991;17:411-9.

Wilkinson 1995

Wilkinson G, Piccinelli M, Falloon I, Krekorian H, McLees S. An evaluation of community-based psychiatric care for people with treated long-term mental illness. *British Journal of Psychiatry* 1995;167:26-37.

Wood 1995

Wood K, Anderson J. The effect on hospital admissions of psychiatric case management involving general practitioners: preliminary results. *Australia and New Zealand Journal of Psychiatry* 1995;29:223-9.

Zhang 1994

Zhang M, Yan H, Phillips MR. Community-based psychiatric rehabilitation in Shanghai. Facilities, services, outcome, and culture-specific characteristics. *British Journal of Psychiatry* 1994;165(supplement):70-9.

Zimmer 1985

Zimmer JG, Groth-Juncker A, McCusker J. A randomized controlled study of a home health care team . . . physician, nurse practitioner, and social worker. *American Journal of Public Health* 1985;75:134-41.

Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes
<p>Gater-Manchester 1997</p>	<p>Allocation: cluster Randomised* - service users from one group of GPs linked to new CMHT were compared with service users from GPs that continued to use traditional hospital-based service. Blinding: initial assessment of needs not blind. These findings presented to two blind co-raters who reached a final rating by consensus. Disagreements resolved by senior clinicians blind to participant allocation. Allocation concealment: A (adequate). Follow-up: 12, 24 months.</p>	<p>Diagnosis: schizophrenia (SCL CATEGO of S+ or P+ based on casenotes or interview with senior clinician). N = 89. Age: range 16-65, mean = ~45. Sex: 52 M 37 F. History: onset of symptoms >3 years before the start of the study, symptomatic or on medication over the 2 years prior to the start of the study. Recruitment: from GPs. Setting: Manchester.</p>	<p>1. Community team: multidisciplinary community based team, consisting of a core of five full time workers (2 community psychiatric nurses, social worker, occupational therapist, psychologist). Most participants allocated a non-medical keyworker who was responsible for ongoing contact with the participant and the coordination of their care. Team "aimed to provide a comprehensive range of community-based mental health services to the population they served. Work with clients was done mainly at home, at the health centre where the team was based and in GPs' surgeries." Team members carried out individual counselling work with clients, and operated groups and a weekly drop-in. N=42. 2. Traditional psychiatric service: teaching psychiatric unit in a district general hospital. Its mental health service included the same professional groups found in the community team but the different disciplines were not closely coordinated in multidisciplinary teams, had only limited contact with primary care and participants had no keyworker system. N=47.</p>	<p>1. Number of unmet needs - participants (based on MRC Needs for Care Schedule, KGV, PSE-40, Mini-Mental State scale, Client Satisfaction Questionnaire, Social Behaviour Schedule, modified Lancashire Quality of Life Scale, and Johnstone's scale for rating extra-pyramidal side-effects). 2. Economic costs. Unable to use: 1. Compliance (no data). 2. Number of unmet needs - relatives (no data). 3. participant satisfaction with services (Client Satisfaction Questionnaire - no SD or N available). 4. Relatives' satisfaction with services (no data). Not used: 1. Contacts with health professionals (number of participants who received the service at least once in the study period).</p>	<p>* Data not included in main meta-analysis due to cluster randomised design - see Additional Tables.</p>

Study characteristics tables: Community Mental Health Teams

<p>Merson-London 1992</p>	<p>Allocation: randomised, sealed envelopes, stratified by previous contacts with psychiatric services. Blinding: raters blind to allocation. Allocation concealment: A (adequate). Follow-up: 3 months.</p>	<p>Diagnosis: schizophrenia (38), mood disorders (32), neurotic (25), other (5). Personality disordered 50 (ICD-10), 35 (PAS)*. N = 100. Age: median 32. Sex: 40 M 60 F. History: 51% previous psychiatric contact. Exclusions: participants excluded if they required mandatory inpatient services, and/or were already in contact with psychiatric services at time of recruitment. Recruitment: from psychiatric emergencies presenting to district general hospital. Setting: Inner London (Paddington).</p>	<p>1. Early Intervention Service: multidisciplinary team, open referral, swift response, in-home assessments, collaboration maintained with already involved agencies, clinical decisions by team consensus, case manager assigned, no 24 hour cover. N=48. 2. Standard hospital treatment: usually OPD, occasional home visits. N=52.</p>	<p>1. Death. 2. Leaving study early. 3. Admitted to hospital. 4. Psychiatric symptoms (CPRS)**. 5. Social functioning (SFQ)**. 6. Duration of hospital admissions***. 7. Economic costs***.</p> <p>Unable to use: 1. Psychiatric symptoms (MADRS, BAS - no SD). 2. Team utilization (mean visits - no SD). 3. Social functioning (Network Schedule - no usable data) 4. participant satisfaction questionnaire (not peer-reviewed, published instrument)</p>	<p>* Additional diagnosis of personality disorder made and trial data presented separately on this subgroup. ** Data obtained by authors of the Cochrane review could not be verified by GDG reviewers. *** Insufficient data for meta-analysis - available data presented in additional tables.</p>
<p>Tyrer-London 1998</p>	<p>Allocation: sealed, randomly mixed, envelopes. Blinding: raters blind to allocation. Allocation concealment: A (adequate). Follow-up: 12 months.</p>	<p>Diagnosis: schizophrenia (86), bipolar affective disorder (20), depressive disorder (24), other (25) (OPCRIT). N=155. Age: range 16-65. Sex: no information provided. History: >1 admission in last 3 years. Recruitment: from discharged in-patients. Setting: Inner/outer London (Paddington, North Kensington, Brent).</p>	<p>1. Community team: multidisciplinary community based team, keyworker allocated, care plan developed and reviewed weekly, treatment at home or other appropriate setting. N=82. 2. Standard hospital treatment: care plans and reviews organised from hospital base. N=55.</p>	<p>1. Death*. 2. Admitted to hospital. 3. Leaving the study early. 4. Not using primary care. 5. Not using social services. 6. Economic costs**. 7. Duration of hospital admissions**.</p> <p>Unable to use: 1. Mental state (BAS, CPRS, HADS, MADRS - no usable data). 2. Social functioning (SFQ - no usable data). 3. Global assessment, clinical & social (GAF - no usable data). 4. Number of police contacts (no usable data).</p>	<p>* 1 accidental death considered 'suspicious circumstances' for this review. ** Insufficient data for meta-analysis - available data presented in additional tables.</p>

GENERAL

F1 psychosis = Medical Subject Heading Codes.

ICD-10 = 10th revision of the International Classification of Diseases.

OPD = Outpatient department.

Study characteristics tables: Community Mental Health Teams

SCALES

Mental state

BAS = Brief Rating Scale for Anxiety.

BPRS = Brief Psychiatric Rating Scale.

CPRS = Comprehensive Psychopathological Rating Scale.

MADRAS = Montgomery and Asberg Depression Rating Scale.

OPCRIT = Operational Criteria for diagnosing Severe Mental Illness.

PEF = Psychiatric Evaluation Form.

PSE = Present State Examination(to measure clinical symptoms).

Family burden

FEF = Family Evaluation Form.

Functioning

GAF = Global Assessment of Functioning.

HSRS = Health Sickness Rating Scale (to measure a person's functioning).

PEF = Psychiatric Evaluation Form.

SFQ = Social Functioning Questionnaire.

SFS = Social Functioning Schedule

Characteristics of excluded studies

Study	Reason for exclusion
Audini 1994	Allocation: randomised. Participants: severely mentally ill. Intervention: assertive community treatment vs standard care.
Bedell 1989	Allocation: not randomised, matched controls.
Bond 1988	Allocation: randomised. Participants: severely mentally ill. Intervention: assertive community treatment vs standard care.
Bond 1990	Allocation: randomised. Participants: severely mentally ill. Intervention: assertive community treatment vs 'drop in' centre.
Coelho 1993	Allocation: randomised. Participants: people with mild to moderate developmental disability, together with a DSM III diagnosis of mental illness. Interventions: intensive case management vs standard care.
Connolly 1996	Allocation: not randomised.
Crosby 1993	Allocation: not randomised.
Cuffel 1994	Allocation: not randomised.

Study characteristics tables: Community Mental Health Teams

De-Cangas 1995	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs standard care.
Dick 1991	Allocation: randomised. Participants: severely depressed or anxious. Intervention: day hospital vs out-patient treatment.
Essock 1995	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs case management.
Ferguson 1992	Allocation: not randomised, case control study.
Ford 1995	Allocation: randomised. Participants: severely mentally ill. Intervention: intensive case management vs standard care.
Franklin 1987	Allocation: randomised. Participants: chronic mentally ill. Interventions: case management vs standard care.
Heitger 1995	Allocation: not randomised.
Husted 1994	Allocation: not randomised, repeated measures within subject design.
Kluiter 1990	Allocation: randomised. Participants: severely mentally ill. Interventions: day hospital vs standard care.
Kovess 1988	Allocation: not randomised.
Krupinski 1984	Allocation: not randomised.
Kuldau 1977	Allocation: randomised. Participants: mentally ill men. Interventions: therapeutic community type approach vs rapid discharge with pre-discharge planning (both inpatient treatment programmes).
Kwakwa 1995	Allocation: not randomised.
Lafave 1996	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs hospital based care.

Study characteristics tables: Community Mental Health Teams

Leff 1996	Allocation: not randomised.
Linn 1977	Allocation: randomised. Participants: male mentally ill. Interventions: foster care preparation and placement vs continued hospitalisation.
Littrell 1995	Allocation: not randomised.
Locker 1984	Allocation: not randomised, case control design.
Macias 1994	Allocation: randomised. Participants: severely mentally ill. Interventions: case management and psychosocial rehabilitation vs psychosocial rehabilitation.
Marks 1994	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs hospital based care.
Marshall 1995	Allocation: randomised. Participants: severely mentally ill. Intervention: case management vs standard care.
McClary 1989	Allocation: not randomised.
McCrone 1994	Allocation: randomised. Participants: seriously mentally ill. Interventions: community intensive support team vs generic CPN care.
Modcrin 1988	Allocation: randomised. Participants: chronic mentally ill. Interventions: developmental aquisition model of case management vs standard case management.
Muijen 1992a	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs standard care.
Muijen 1992b	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs standard care.
Muijen 1994	Allocation: randomised. Participants: severely mentally ill. Intervention: intensive CPN support vs generic CPN care.
Paykel 1982	Allocation: randomised. Participants: severely mentally ill. Interventions: CPN care vs standard out-patient care.

Study characteristics tables: Community Mental Health Teams

Piper 1993	Allocation: randomised. Participants: mentally ill. Interventions: day treatment vs no treatment.
Polak 1976	Allocation: randomised. Participants: individuals requiring psychiatric hospitalisation. Interventions: community based therapeutic environments vs standard hospital care.
Quinlivan 1995	Allocation: randomised. Participants: severely mentally ill. Interventions: intensive case management vs traditional case management vs standard care.
Rosenheck 1995	Allocation: randomised. Participants: mentally ill. Interventions: intensive psychiatric community care vs standard care.
Ruphan 1992	Allocation: randomised. Participants: severely mentally ill. Interventions: day hospital treatment vs standard care.
Rushton 1990	Allocation: not randomised, review.
Sands 1994	Allocation: not randomised, case control study.
Schene 1993	Allocation: randomised. Participants: people referred for in-patient treatment. Interventions: day treatment vs inpatient care.
Slavinsky 1982	Allocation: randomised. Participants: people referred for long term psychiatric care. Interventions: nurse lead social support programme vs medication clinics.
Smith 1974	Allocation: not randomised, matched pairs design.
Smith 1975	Allocation: not randomised.
Solomon 1994	Allocation: randomised. Participants: seriously mentally ill. Interventions: assertive community treatment vs Intensive case management vs standard care.
Solomon 1995a	Allocation: randomised. Participants: major mental illness diagnosis. Interventions: consumer case management vs professional case management.
Solomon 1995b	Allocation: randomised. Participants: severely mentally ill. Interventions: assertive community treatment vs forensic intensive case management vs standard care.

Study characteristics tables: Community Mental Health Teams

Solomon 1995c	Allocation: randomised. Participants: major mental illness diagnosis. Interventions: consumer case management vs professional case management.
Stein 1975	Allocation: randomised. Participants: chronically mentally ill. Interventions: training in community living case vs standard care.
Tyrer 1995	Allocation: randomised. Participants: vulnerable psychiatric service users. Interventions: care programming approach vs standard follow up.
Wiersma 1991	Allocation: randomised. Participants: those with schizophrenia. Interventions: specialised day centre vs hospital care.
Wilkinson 1995	Allocation: not randomised, cohort study.
Wood 1995	Allocation: not randomised, matched group design.
Zhang 1994	Allocation: not randomised, case control study.
Zimmer 1985	Allocation: randomised. Participants: elderly chronically ill / terminally ill.

CPN - Community Psychiatric Nurse.

Assertive Community Treatment/Assertive Outreach Teams (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
Marshall M, Lockwood A. Assertive Community Treatment for People with Severe Mental Disorders (Cochrane Review). In: <i>The Cochrane Library</i> , Issue 4, 2001. Oxford: Update Software.	<ol style="list-style-type: none"> 1. Systematic reviews of RCTs. 2. Intramural sources of support to the review: Manchester University Department of Psychiatry. Extramural sources of support to the review: Nuffield Trust. 3. 1966-97. 4. Categorical data extracted twice and cross-checked, Peto odds ratios and NNTs calculated. Numerical scale data subject to quality assessment, and combined using Standard Mean Difference. 5. 20 (22 including two new trials). 6. 3502 (3722) 	For an intervention to be accepted as ACT it must have been described in the trial report as: Assertive Community Treatment, Assertive Case Management or PACT; or as being based on the Madison, Treatment in Community Living, Assertive Community Treatment or Stein and Test models. The review did not consider the use of ACT as an alternative to acute hospital admission. The review also excluded studies of 'Home-Based Care.'	<ol style="list-style-type: none"> 1. Measures of numbers remaining in contact with psychiatric services. 2. Measures of hospital admission. 3. Measures of clinical and social outcome. 4. Measures of economic cost.
New RCTs (UK only)	Chandler-California (N=60); Fekete-Indiana (N=160).		
Additional notes for quality assessment			
Author's objective	To determine the effectiveness of Assertive Community Treatment (ACT) as an alternative to i. standard community care, ii. traditional hospital-based rehabilitation, and iii. case management. For each of the three comparisons the main outcome indices were i. remaining in contact with the psychiatric services, ii. extent of psychiatric hospital admissions, iii. clinical and social outcome and iv. costs.		
What methods were used to identify primary studies?	Electronic searches of CINAHL (1982-1997), the Cochrane Schizophrenia Group's Register of trials (1997), EMBASE (1980-1997), MEDLINE (1966-1997), PsycLIT (1974-1997) and SCISEARCH (1997) were undertaken. References of all identified studies were searched for further trial citations.		
How were the inclusion criteria applied and what were they?	The inclusion criteria were that studies should i. be randomised controlled trials, ii. have compared ACT to standard community care, hospital-based rehabilitation, or case management and iii. have been carried out on people with severe mental disorder the majority of whom were aged from 18 to 65. Studies of ACT were defined as those in which the investigators described the intervention as "Assertive Community Treatment" or one of its synonyms. Studies of ACT as an alternative to hospital admission, hospital diversion programmes, for those in crisis, were excluded. The reliability of the inclusion criteria were evaluated. The search for trials was performed independently by two reviewers (AL, MM). Each read the abstracts of all publications detected by their search (see search strategy above) and discarded irrelevant publications, retaining only those trials in which some form of case management or ACT had been compared against a control treatment. The results of the two independent searches were then		

Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

	merged to form a pool and copies were obtained of all papers pertaining to trials in the pool. The reviewers together evaluated the trials in the pool and decided which should be included in the systematic review of ACT. Subsequently, an independent rater was asked to repeat the classification exercise on the pool of trials.
Criteria on which the validity (quality) of studies was assessed.	Both reviewers rated the quality of all included trials. A rating was given for each trial based on the three quality categories as described in the Cochrane Collaboration Handbook. Only trials in category A or B were included in this review. It was required that all included trials were to be conducted on an intention-to-treat basis.
How were the data extracted from the primary studies?	All data were extracted twice and then cross-checked to ensure reliability.

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Audini-London (published data only)

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Bond-Chicago1 (published data only)

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Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

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Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

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Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
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Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

<p>Aberg-Stockholm</p>	<p>Allocation: randomised - no further details. Follow-up: 24 months. Lost to follow-up: 5/40.</p>	<p>Setting: Kungsholmen sectorised service, Stockholm, Sweden. Inclusion criteria: i. DSM-III-R schizophrenic disorder; ii. age 25-55; iii. recently admitted to ward / currently in OPD. Age: mean 38 years. Sex: 35% F. N=40.</p>	<p>1. "Intensive team-based case management based on...principles [of]...Stein and Test" (1 hospital, 1 OPD multi-disciplinary team (size = 4); shared case load, team held primary responsibility, unlimited follow up, 24 hour care available (not from team), contact > 4.5 hrs / week / client, approach emphasised medication compliance & offered life skills training & support*, staff:client ratio 1:2.5. N=20. 2. "Standard psychiatric services" from multi-disciplinary specialist OPD, each assigned 1 contact person, co-ordinated via team meetings, staff:client ratio ~ 1:10. N=20.</p>	<p>1. Lost to follow-up. Unable to use: 1. Days in hospital (no mean, no SD). 2. Number of emergency visits (no mean, no SD). 3. Quality of life (no mean, no SD). 4. Social network size (measure validated on children only, no mean, no SD). 5. Burden of care (no mean, no SD).</p>	<p>* Sharing of case load, frequency of team meetings, role of co-ordinator, frequency and location of contacts - not clear.</p>	<p>B</p>
<p>Audini-London</p>	<p>Allocation: randomised - no further details. Follow-up: 4, 15 months. Lost to follow-up: 8/66 (12%).</p>	<p>Setting: London, UK. Inclusion criteria: "seriously mentally ill" people (30% schizophrenia) who had completed > 20/12s in treatment arm of a trial of ACT (see Muijen-London). Age: median 37. Sex: 54% F. History: mean 0.17 admissions in last year. N=66.</p>	<p>1. ACT: "modelled on the ACT care services developed in Madison by Stein and Test". N=33. 2. Routine care from the psychiatric services. N=33.</p>	<p>1. Hospital admission. 2. Numbers lost to follow-up. 3. Deaths. 4. Days in hospital. 5. Mental state (BPRS). 6. Social functioning (SAS). 7. participant satisfaction (CSQ). Unable to use: 1. Days in hospital (no SD). 2. Mental state (GAS, PSE, same variable (mental state) assessed by multiple measures) 3. Relative's satisfaction (not peer-reviewed scale).</p>	<p>People in this study recruited after 20-30 months of ACT within Muijen-London. Authors report that the ACT team became "depleted and demoralized" in the course of this trial.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

<p>Bond-Chicago1</p>	<p>Allocation: randomised, sealed envelope, independent secretary performed assignment. Follow-up: 12 months. Lost to follow-up: 30/88 34(%)</p>	<p>Setting: Chicago, Illinois, USA. Inclusion criteria: i. >18 years; ii. schizophrenia, schizo-affective disorder, affective disorder, or incapacitating personality disorder; iii. living within 3 miles of treatment program; iv. 3 hospitalisations in last 2 years; v. total of 5 hospitalisations in life-time; vi. not already receiving ACT. N=88.</p>	<p>1. ACT: N=45. 2. Standard care from a drop-in centre. N=43.</p>	<p>1. Hospital admission. 2. Days in hospital. 3. Lost to follow-up. 4. Deaths 5. Client satisfaction (number reporting treatment as "very helpful"). 6. Imprisoned / arrested.</p> <p>Unable to use: 1. Social functioning (not peer-reviewed scale, no SD) 2. Subjective Quality of Life (not peer-reviewed scale, no SD). 3. Satisfaction with Care (CSQ, no SD). 4. Global functioning (GAS, no SD).</p>		<p>A</p>
<p>Bond-Indiana1</p>	<p>Allocation: random allocation - no further details. Follow-up: 6 months. Lost to follow-up: 43/167 (25.7%)</p>	<p>Setting: 3 CMHCs, Indiana, USA. Inclusion criteria: i. >17 years; ii. diagnosis of psychotic disorder; and either iii. discharged from a state hospital in past year; or iv. hospitalised > 3 times in past 2 years; or v. believed by staff to be at risk of readmission; or vi. awaiting commitment to an Indiana State Hospital; or vii. presenting for admission to the CMHC inpatient unit and having had four hospitalisations in last 2 years. Diagnosis: 61% schizophrenia. Age: mean 34.5. Sex: 38% F. History: mean number previous admissions 8.8; mean number admissions in previous year: 1.5. N=167.</p>	<p>1. "PACT developed by Stein and Test", staff:client ratio ~ 1:7. N=84. 2. Public mental health services (included unspecified amount of brokerage-style case management). N=83.</p>	<p>1. Hospital admission. 2. Lost to follow-up. 3. Death (data from centre A only). 4. Arrests. 5. Days in hospital. 6. Costs - total.</p> <p>Unable to use: 1. Quality of life (not peer-reviewed scale, no data).</p>	<p>Results reported separately for the 3 centres and data reported inconsistently across centres. 'N' therefore varies depending on quality of data reporting.</p>	<p>B</p>
<p>Bush-Atlanta</p>	<p>Allocation: random assignment - no further details. Follow-up: 12 months. Lost to follow-up: 0/28.</p>	<p>Setting: Atlanta, USA. Inclusion criteria: i. "severe mental illness"; ii. "high rates of recidivism"; iii. "difficulties in community living". N=28.</p>	<p>1. ACT (Madison model), staff:client ratio ~ 1:2. N=14. 2. Low intensity case management & rehabilitation from standard services. N=14.</p>	<p>1. Lost to follow-up. 2. Death. 3. Days in hospital.</p> <p>Unable to use: 1. Compliance (no data). 2. Accommodation (no data).</p>	<p>* Not defined further.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Chandler-California 1</p>	<p>Allocation: randomised - no further details. Follow-up: 12 months Lost to follow-up: 116/516 (22.5%).</p>	<p>Setting: 1 urban, 1 rural but integrated service agencies in California, USA. Inclusion criteria: i. "serious and persistent mental disorder" - not substance abuse; ii. functional impairment due to mental disorder; iii. eligible for public assistance due to mental disorder. Diagnosis: 50% schizophrenia. Age: ~ a third > 45 years. Sex: 41% F. History: 26% admitted in last year. N=516.</p>	<p>1. "TCL model described by Test" - multi-disciplinary teams (psychiatrist involved); team takes primary responsibility; 24 hour cover; unlimited intervention; separate site from hospital; shared case load; emphasis on assertive outreach and in vivo treatment. N=252. 2. "Usual services" - included OPD, day treatment, case management and minimal rehabilitative services. N=264.</p>	<p>1. Lost to follow-up. 2. Hospital admission. 3. Arrest. 4. Employment. 5. Days in hospital. 6. Costs of hospital care and of all mental health care. Unable to use: 1. Quality of life (QOLS, no data). 2. Self-esteem (RSES, no data). 3. Mental state (CSI, no data). 4. Social Activity (not peer-reviewed scale).</p>		<p>B</p>
<p>Chandler-California 2</p>	<p>Allocation: randomisation in blocks over a 4-month period. Follow-up: ~12 months. Lost to follow-up: 5/59* (8%).</p>	<p>Setting: Alameda County, California, USA. Inclusion criteria: Diagnosis: 61% schizophrenia, 34% schizoaffective, 5% other. Age: 39% aged over 45. Sex: 39% F. History: at time of group allocation all individuals were in-patients in "long-term locked subacute facility" operated by private care provider, 66.7% of participants in ACT group and 33.3% of participants in comparison group had previously been in a state institution**, 49% prior criminal history. N=60.</p>	<p>1. ACT: STRIDES (Steps Towards Recovery, Independence, Dignity, Empowerment, and Success) programme operated by private capitated care provider. One line staff member for each 6.2 people, 24 hr crisis service, assertive approach that included (if needed) two times daily delivery of medications. All staff members worked with all of the clients, and programme relied on staff members to provide a range of services, including drop-in centre, specialized employment and substance abuse treatment. Fidelity to ACT model measured with Community Program Philosophy Scale (CPPS). 2. Comparison group: "long-term locked subacute facility" operated by private capitated care provider.</p>	<p>1. Lost to follow-up. 2. Death. 3. Not living independently. 4. Unemployed. 5. Quality of life (7-item version of Lehman's QOLS). 6. Satisfaction with services (CSS). 7. Community tenure (time not in acute or subacute facility). 8. Number, duration of admissions***. 9. Economic costs***. Not used: 1. Use of emergency services. 2. Continuity of care (contacts with services before and after acute episode). Unable to use: 1. Number, duration of contacts with services (data only available for ACT group). 2. Fidelity to service model (no usable data). 3. Social functioning (not peer-reviewed scale). 4. Global functioning (only available for ACT group and not assessed by an independent rater).</p>	<p>* 1 participant in ACT group died of natural causes. ** Statistically significant at $p \geq 0.05$. *** Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>De Cangas-Quebec</p>	<p>Allocation: random allocation - no further details. Follow-up: 6 months after discharge from hospital. Lost to follow-up: 85/120 (29.2%).</p>	<p>Setting: Quebec, Canada. Inclusion criteria: i. Just admitted to psychiatric hospital; ii. no primary diagnosis of organic brain disorder, personality disorder, substance abuse or mental retardation. Age, sex: data reported on completers, unable to give data of those randomised. N=120.</p>	<p>1. "Le case management affirmatif" (ACT) from team of 3 nurses, staff:client ratio 1:20. N=60. 2. Routine inpatient care, then routine community care from hospital services. N=60.</p>	<p>1. Hospital admission. 2. Lost to follow-up. 3. Imprisonment, arrests. 4. Employment. 5. Deviant behaviour (REHAB). 6. Costs - total. Unable to use: 1. Days in hospital (error in data table). 2. Social functioning (REHAB, full data not reported). 3. Family Burden: (no SD). 4. Quality of life ("Oregon 5. Quality of Life Inventory" - not peer-reviewed scale, reporting by items). 5. Expressed emotion (Five Minute Speech Sample - trivial outcome in an ACT trial).</p>		<p>B</p>
<p>Essock-Connecticut</p>	<p>Allocation: "randomly assigned" - no further details. Follow-up: 18 months Lost to follow-up: ~ 13/262.</p>	<p>Setting: 3 centre study, Connecticut, USA. Inclusion criteria: i. severe mental disorder; ii. high service use (>2 admissions last 2 years / 1 admission >180 days last 2 years / >2 contacts with crisis services last 2 years); and iii. significant difficulty meeting demands of everyday life (homeless at some time in past year / required extensive supervision or assistance > weekly to meet personal needs). Diagnosis: 67% schizophrenia. Age: mean 41 years. Sex: 36% F. History: mean number admissions > 2. N=262.</p>	<p>1. ACT - 3 teams (2 F/T nurses, P/T psychiatrists, 10 members), no individual case loads, 24 hr cover; 9.1 hrs face-to-face/ month; 66% contacts in non-office setting, staff:client ratio ~1:6. N=131. 2. "High quality" case management - generalist model but case managers mobile, seeing participants in own homes, and "assertive" on their behalf, graduate (usually) social workers carried discrete caseloads; no 24 hr cover; 1.3 hrs face-to-face/ month; 78% contacts in non-office setting, staff:client ratio ~ 1:25/30. N=131.</p>	<p>1. Days in hospital. 2. Days homeless.</p>	<p>Results not fully published as yet.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Fekete-Indiana</p>	<p>Allocation: "randomly assigned." Follow-up: 6, 12, 24 months. Lost to follow-up: 33%.</p>	<p>Setting: rural Indiana, USA. Inclusion criteria: i. at least 18 yrs old; ii. severe mental illness (DSM-III-R); iii. demonstrated poor utilization of community mental health services; iv. clients had to meet at least one of 10 further criteria that demonstrated frequent use of psychiatric hospitals or emergency services, legal problems, or housing problems. Diagnosis: 48% schizophrenia, 32% affective disorder, 20% other. Age: mean 38.1 (SD 11.1). Sex: 57% F. History: mean age at 1st admission 24.6 (SD 9.5), mean no. lifetime admissions 8.4 (SD 7.5), mean no. admissions in year prior to study 1.3 (SD 1.1), mean no. days in hospital in year prior to study 51.3 (SD 82.4). N=160.</p>	<p>1. ACT*: each of four rural CMHCs established an ACT team comprising 2 case managers. Staff "made home and community visits, targeted clients at risk for hospitalisation, focused on practical problems in living, and served clients on a time-unlimited basis." ACT programmes were mandated to use a team approach. Staff:client ratio 1:10. 2. Control: clients received existing mental health services, including day treatment, partial hospitalization, outpatient therapy, and residential services. Control services "were generally office-based and subscribed to the tradition of individual case management." Staff:client ratio 1:30 to 1:60.</p>	<p>1. Lost to follow-up. 2. Number of hospital admissions**. 3. Days hospitalized**.</p> <p>Unable to use: 1. Quality of life (N unavailable, not peer-reviewed, published scale). 2. BPRS (N unavailable, not completed by independent raters). 3. Attitudes to Medication (N unavailable, not completed by independent raters, not peer-reviewed, published scale). 4. GAF (N unavailable, not completed by independent raters). 5. No. days at longest residence (N unavailable). 6. Vocational and legal outcomes (no data). 7. Indiana LOF (N unavailable, not completed by independent raters, not peer-reviewed, published scale). 8. Contacts with services (only reported for ACT). 9. Fidelity of program implementation (only assessed for ACT). 10. Satisfaction with services (no usable data, not peer-reviewed, published scale).</p>	<p>*3 out of the 4 ACT teams were rated for fidelity of programme implementation. They averaged 0.35, which was substantially lower than the mean for the urban programmes (0.61) reviewed elsewhere. "Items on which the rural teams scored lower included the number of home/community visits, minutes of overall service contact, total caseload size, team size, presence of a nurse on the team, psychiatrist involvement, and team approach (shared caseloads)." ** Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>
<p>Hampton-Chicago</p>	<p>Allocation: random allocation - no further details. Follow-up: 6, 12 months. Lost to follow-up: ~ 26/165 (15.7%).</p>	<p>Setting: 2 centres, Chicago, USA. Inclusion criteria: i. admitted to inpatient units at state hospital; ii. homeless on admission / at risk of homelessness on discharge. Diagnosis: 42.1% schizophrenia. Age: mean 37.3 years. Sex: 23% F. History: mean number previous admissions ~ 13; mean number admissions in last year ~ 2.8. N=165.</p>	<p>1. "Assertive case management" and "ACT", staff:client ratio ~1:10. N=82. 2. Routine follow-up care from psychiatric services. N=83.</p>	<p>1. Lost to follow-up (site 1). 2. Death. 3. Housing status at end of study. 4. Days in hospital.</p> <p>Unable to use: 1. Lost to follow up (site 2 - figures in project report do not add up - > than total N in study). 2. Admissions (no SD).</p>	<p>In one centre there were possible problems with program implementation - this centre had less positive results. It is not clear how far the stated 'Ns' include those leaving the study early. Authors are being contacted for further information.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

<p>Herinckx-Portland</p>	<p>Allocation: randomised - no further details. Follow-up: 2.4 years Lost to follow-up: 70/174 (40%) at 2.4 years.</p>	<p>Setting: Portland, Oregon, USA. Inclusion criteria: i. severe mental disorder (schizophrenia, bipolar disorder, major depression); ii. persistent history of psychotic symptoms not due to substance abuse; iii. impaired functioning in > 2 of:- social role, daily living, social acceptability; iv. not mentally retarded. Diagnosis: 60% schizophrenia. Age: mean 36.5 years. Sex: 39% F. History: 61% 2+ admissions in last 6 months. N=174.</p>	<p>1. "ACT" (non consumer), 4 F/T & 1 P/T case managers (includes team leader), input from nurse & psychiatrist, trained in ACT-style treatment, caseload assigned to entire team, services delivered in vivo, small case loads; 24 hour cover, continuity of care, team had ultimate responsibility. N = 58. 2. "ACT" (consumer), as above but consumer case managers (60% had suffered from bipolar disorder). N=58. 3. Care from 1 of 4 CMHCs and a number of smaller agencies (none providing assertive outreach). N=58.</p>	<p>1. Lost to follow-up (at 15 months).</p>	<p>Participants were being transferred from inpatient care or moving from other services in the community. Study design suggests that other outcomes will become available.</p>	<p>B</p>
<p>Jerrell-SCarolina 2</p>	<p>Allocation: randomised - no further details. Follow-up: 18 months Lost to follow-up: none.</p>	<p>Setting: "Large urban mental health system", USA. Inclusion criteria: i. DSM-III-R psychotic or major affective disorder; ii. 2+ in-patient admissions in last year or lengthy residential treatment & repeated emergency visits; and iii. 2+ of:- poor work history, eligible for public assistance, poor living skills, poor social support, history of inappropriate behaviour. N=122.</p>	<p>1. "PACT adaption model", multi-disciplinary team including psychiatrist, daily meetings, mainly home-based treatment, staff:client ratio ~ 1:15-20. N=40. 2. "Intensive broker case management", intensive support from case managers ("paraprofessionals" working independently and solely in the field), weekly meetings, service "relationship oriented", focussing on "empowering clients", staff:client ratio ~ 1:15-18. N=42. 3. Clinical team with some supplemental case management for 25% most unstable clients, staff:client ratio 1:35 or more. N=40.</p>	<p>1. Costs - total of psychiatric care. 2. Social behaviour (SAS). Unable to use: 1. Mental state (data skewed). 2. Role functioning (not peer-reviewed scale).</p>		<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Lafave-Ontario</p>	<p>Allocation: "randomly assigned" - no further details. Follow-up: 12, 24 months. Outcome assessment: by independent consultants. Lost to follow-up: 13/65 (20%).</p>	<p>Setting: Brockville, Ontario, Canada. Inclusion criteria: i. age 16-65; ii. referred for "psychiatric rehabilitation" to long-term hospital. Diagnosis: 57% schizophrenia. Age: mean 36 years. History: mean number previous admissions 3.8. N=65.</p>	<p>1. "ACT", provided by multidisciplinary team (psychiatrist, nurses, social workers, vocational counsellor, 'consumer' support-worker), staff:client ratio > 1:4. N=24. 2. Standard psychosocial rehabilitation for high service users, +/- rehabilitation assessment (hospital-based) and psycho-social rehabilitation (community-based) from hospital treatment team. N=41.</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. 3. Days in hospital. 4. Accommodation outcome. Unable to use: 1. Quality of life (QOLS, no SD). 2. Satisfaction with care (CSQ, no SD). 3. Quality of environment (Environmental Index, unclear if this is an appropriate measure - designed for use in institutions, no SD).</p>	<p>Unclear if those randomised to group 2 were admitted to hospital as a matter of course. If this were the case it would be preferable to compare post-discharge readmission rates.</p>	<p>B</p>
<p>Lehman-Baltimore</p>	<p>Allocation: stratified random assignment - no further details. Follow-up: 2,6,12 months. Lost to follow-up: 26/152 (17%) (12 months).</p>	<p>Setting: Baltimore, Maryland, USA. Inclusion criteria: i. homeless*; ii. severe mental disorder**. Diagnosis: 58.4% schizophrenia. Age: mean 37 years. Sex: 33% F. N=152.</p>	<p>1. "PACT model of Stein and Test", continuity of care, 24 hour availability, 12 F/T staff (including social worker director, psychiatrist, 6 clinical case managers (nurses, social workers), 2 consumer advocates, receptionist, family outreach worker, P/T nurse practitioner - each assigned to mini-team), whole team knew clients & took part in decision-making, daily meetings, site visit confirmed fidelity to ACT model, staff:client ratio ~ 1:10. N=77. 2. Routine psychiatric care, mainly CMHCs, emergency facilities, some generic case management in comparison programme (degree unclear). N=75.</p>	<p>1. Hospital admission. 2. Lost to follow-up. 3. Living independently. 4. Mental state (CSI). 5. Quality of life (QOLS). 6. Days in hospital. 7. Days in stable accommodation. 8. General health (SF36). 9. Economic costs***. Unable to use: 1. Specific items reported from QOLS (not global assessments). 2. Social functioning (objective QOLS, no data). 3. Days in jail (so infrequent as to be a trivial outcome). 4. Days homeless (split reporting of different types of homelessness, no SD).</p>	<p>* Homeless - on street or shelter for >4 days last 45 or >14 last 180; or in temporary accommodation with >2 residential moves in last 6 months. ** Severe mental disorder - diagnosis of schizophrenia or schizophrenia-like illness or receiving benefit because of mental disorder or had another axis I disorder and either >2 hospitalisations of >21 days in past 3 years or a total of >42 days prior to current hospitalisation or >90 days in psychiatric hospital or nursing home in past 3 years or mental disability lasting >1 year during which not able to spend >75% of time in some gainful activity. Note complex inclusion criteria. *** Data presented in additional tables.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Marx-Madison</p>	<p>Allocation: random allocation - no further details. Follow-up: 5 months. Lost to follow-up: 1/41 (2.4%).</p>	<p>Setting: Madison, Wisconsin, USA. Inclusion criteria: i. Inpatient at Mendota State Hospital; ii. considered by staff to be incapable of sustained community living; iii. duration of admission 3-18 months; iv. < 50% of past 4 years in hospital; v. 20-45; vi. no primary diagnosis of organic brain disease or substance abuse. Diagnosis: 80.4% schizophrenia. Age: mean 29 years. Sex: 36.5% F. History: mean number past admissions ~ 3.5 in past 4 years. N=41.</p>	<p>1. Early version of TCL model (undertaken by inventors of ACT approach), in-patients judged to require hospital rehabilitation were instead discharged to "total in-community treatment", staff:client ratio at worst 1:10. N=21. 2. Prepared for discharge on rehabilitation unit by the same staff who provided ACT in group 2. N=20.</p>	<p>1. Lost to follow-up. 2. Living independently. 3. Employed (paid work). Unable to use: 1. Days in hospital (no SD). 2. Numbers in hospital at end of study (not independent of outcome). 3. Global functioning (SCRS, IMPS, no data). 4. Social functioning (KATZ self report, ACL, MACC II Behavioral Adjustment scale, no data). 5. Self-esteem (RSES, no data).</p>	<p>Those in hospital randomised to immediate ACT (community-based) or active rehabilitation (hospital-based) from the same ACT team members. There was further comparison group receiving standard hospital care.</p>	<p>B</p>
<p>Morse-St Louis1</p>	<p>Allocation: random assignment*. Follow-up: 12 months. Lost to follow-up: 44/136 (37.8%).</p>	<p>Setting: Homeless mentally ill services, St Louis, USA. Inclusion criteria: i. homeless; ii. no indication of serious violent behaviour; iii. serious psychiatric disorder (previous psychiatric hospitalisation, score > 90th centile on GSI, and on psychoticism, paranoid ideation, or depression subscales of BSI). Diagnosis: 30.1% schizophrenia. Age: mean 33.7 years. Sex: 42% F. History: 75% >1 admissions. N=116.</p>	<p>1. "Guided by principles from...ACT programs associated with the TCL program", staff:client ratio 1:10. N = 52. 2. Routine care from outpatient psychiatric services operated by Missouri Department of Mental Health, psychotherapy, psychiatric medication, assistance in obtaining social security. N=64.</p>	<p>1. Days homeless. 2. Lost to follow-up. 3. Satisfaction with care. 4. Mental state (GSI of BSI). 5. Social functioning (PSNAS). 6. Self-esteem (RSES). Unable to use: 1. Housing state (no data). 2. Monthly income (data skewed). 3. Alienation (not peer-reviewed scale). 4. Alcohol consumption (data skewed).</p>	<p>*Initially 50 assigned to each group - those who subsequently refused treatment, failed to be linked to treatment, or were lost within one month of screening (n=28) were replaced by people also randomly assigned to the 3 groups. Data in this review is based on sample sizes after replacement of early drop-outs. Data from a drop-in centre control group is not included in this analysis.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Morse-St Louis2</p>	<p>Allocation: randomised - no further details. Follow-up: 18 months. Lost to follow-up: 30/165 (18.1%).</p>	<p>Setting: ACT teams - city centre, case management team - St Louis Mental Health Centre, USA. Inclusion criteria: i. severe mental illness (not defined); ii. recently homeless, or history of frequent homelessness, or in acute crisis as indicated by current treatment in an emergency room or hospital unit. Diagnosis: 81% schizophrenia. Age: mean 34.8 years. Sex: 42% F. N=165.</p>	<p>1. "ACT", indefinite duration, 5-7 F/T staff; 2 hours from psychiatrist / week, no nurses, team took full responsibility for clients, staff:client ratio ~ 1:10. N=55. 2. "ACT with community workers" - as for 1. but a paraprofessional community worker also assigned to each client. N=55. 3. "Broker case management" - case manager (mainly office-based) assigned to develop individual service plan, arrange & purchase mental health & social services, monitor the quality of purchased care & adjust services accordingly, staff:client ratio 1:85. N=55.</p>	<p>1. Mental state (BPRS). 2. Self-esteem (RSES). 3. Satisfaction with care. Unable to use: 1. Severity of substance misuse (ASI, no global score provided). 2. Income (highly skewed data).</p>		<p>B</p>
<p>Quinlivan - California</p>	<p>Allocation: "random allocation" - no further details. Follow-up: 2 years. Lost to follow-up: apparently none - not clear.</p>	<p>Setting: San Diego County, USA. Inclusion criteria: i. age >18; ii. DSM-III-R axis I disorder; iii. 3+ hospitalisations in last 2.5 years. Diagnosis: 67.8% schizophrenia. Age: mean 37 years. Sex: 56% F. N=90.</p>	<p>1. ACT style case management, included assertive outreach, team working, control of participant finances, staff:client ratio 1:15 (or less). N=30. 2. Low-intensity case management, staff:client ratio 1:40. N=30. 3. Treatment from public mental health system. N=30.</p>	<p>1. Days in hospital (reported but not suitable for meta-analysis). 2. Costs of psychiatric inpatient care (reported but not suitable for meta-analysis). Unable to use: 1. Costs of other psychiatric care (not one of the three cost outcomes examined by this study).</p>		<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

<p>Rosenheck-USA-10site</p>	<p>Allocation: random assignment by independent researcher. Follow-up: 24 months. Lost to follow-up: not clear - outcome based on service utilisation statistics.</p>	<p>Setting: 4 neuropsychiatric hospital and 6 general medical hospital intensive psychiatric community care programs, USA. Inclusion criteria: i. Current inpatient in VA psychiatric unit; ii. no primary diagnosis of substance abuse or organic brain disease; iii. recent high user of psychiatric care (definition varied by site). Diagnosis: 50.5% schizophrenia. Age: mean 47.6 years. Sex: 100% M. N=873.</p>	<p>1. "ACT-like"... ..based on consultation with... expert in the Wisconsin ACT model", fidelity of intervention assessed by "a second expert in the PACT approach", program inadequately implemented, staff:client ratio 1:7-15. N=454. 2. Routine care from the psychiatric services. N=419.</p>	<p>1. Days in hospital. 2. Cost - total (data highly skewed but log transformed before analysis - findings reported in review text).</p>		<p>A</p>
<p>Solomon-Philadelphia2</p>	<p>Allocation: "randomly assigned" - no further details. Follow-up: 1, 6 months. Lost to follow-up: not reported.</p>	<p>Setting: Jail system of large urban centre, USA. Inclusion criteria: i. about to be released from prison; ii. homeless; and iii. seriously mentally ill. Age: mean 35.4. Sex: 100% M. N=140.</p>	<p>1. Intensive case management from forensic case manager working individually with CMHC, staff:client ratio ~ 1:4. N=43. 2. "Intensive case management using the ACT team approach" - team included 4 case managers & 1.5 psychiatrist equivalents, staff:client ratio ~ 1:10. N=42. 3. Referral to local CMHC. N=55.</p>	<p>1. Imprisonment.</p>		<p>B</p>
<p>Test-Wisconsin</p>	<p>Allocation: random assignment - no further details. Follow-up: 6,12,18, 24 months. Lost to follow-up: 9/122 (7.3%).</p>	<p>Setting: Madison, Wisconsin, USA. Inclusion criteria: i. 18-30; ii. resident in Dane County, Wisconsin; iii. schizophrenia, schizoaffective disorder, or schizotypal personality; iv. < 12 months spent in psychiatric and penal institutions. Diagnosis: 73.8% schizophrenia. Age: median 23.1 years. Sex: 32.8% F. History: mean number previous admissions ~ 3.4. N=112.</p>	<p>1. "ACT", staff:client ratio ~ 1:9. N=75. 2. Routine care from Dane County psychiatric services - included an unspecified degree of case management. N=47.</p>	<p>1. Hospital admission. 2. Days in hospital. 3. Lost to follow-up. 4. Death. 5. Imprisoned. 6. Living independently. Unable to use: 1. Mental State (BPRS, BSI, no data). 2. Quality of life (SLS, not peer-reviewed scale, no data).</p>	<p>Preliminary report from 12 year ongoing study. Data reported separately for first 6 months (regarded as stabilisation period) - data reported above thus refers to months 7-24.</p>	<p>B</p>

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

General abbreviations

~: about.

ACT: Assertive Community Treatment.

CMHC: Community mental health centre.

F: female.

F/T: full time.

M: male.

N: number.

OPD: outpatient department.

Schizophrenia: includes "schizophrenia-like" disorders.

SD: standard deviation.

PACT: Program of Assertive Community Treatment .

P/T: part time.

TCL: Treatment in Community Living.

VA: Veterans Administration.

Scales / operational checklists

ACL: Adjective Check List.

ASI: Addiction Severity Index.

BPRS: Brief Psychiatric Rating Scale.

BSI: Brief Symptom Inventory.

CPPS: Community Program Philosophy Scale (80-item inventory describing practices in treatment programmes for people with psychiatric disability).

CSI: Colorado Symptom Index.

CSQ: Client Satisfaction Questionnaire.

CSS: Client Satisfaction Scale.

DSM-III-R: Diagnostic Statistical Manual, 3rd Edition, revised.

GAS: Global Assessment Scale.

GSI: Global Severity Index.

IMPS: Inpatient Multidimensional Psychiatric Scale.

PSE: Present State Examination.

PSNAS: Personality and Social Network Adjustment Scale.

QOLS: Quality of Life Scale.

REHAB: a scale of social functioning.

RSES: Rosenberg Self Esteem Scale.

SAS: Social Adjustment Scale.

SCRs: Short Clinical Rating Scale.

SLS: Satisfaction with Life Scale.

Characteristics of excluded studies

Study	Reason for exclusion
Bigelow-Oregon	Allocation: not randomised, quasi-experimental design.
Bond-Chicago2	Allocation: not randomised, matched groups design. Interventions: two types of crisis housing.
Bond-Indiana2	Allocation: not randomised, allocation to ACT and reference group was not random in one of the three participating centres. The study could be included if separate data can be obtained from the two centres where randomisation took place.
Borland-Spokane	Allocation: not randomised.
Burns-London	Allocation: randomised. Intervention: multi-disciplinary team home treatment, not ACT.
Champney-Ohio	Allocation: randomised. Intervention: all 4 comparison groups received some form of case management, no ACT.
Curtis-New York	Allocation: randomised. Participants: those with serious mental illnesses. Interventions: Intensive case management versus routine care, not ACT.
Dean-Birmingham1	Allocation: not randomised.

Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

Dean-Birmingham2	Allocation: not randomised, quasi-experimental study.
Dharwadkar-Victoria	Allocation: not randomised, before and after design.
Fenton-Montreal	Allocation: randomised. Intervention: not clearly case management or ACT.
Ford-London	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: intensive community support versus routine care, not ACT.
Franklin-Houston	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: case management versus routine care, not ACT.
Glick-New York	Allocation: randomised. Intervention: day hospital care vs out-patient group therapy, not ACT.
Goering-Toronto	Allocation: not randomised, historical controls.
Herz-New York	Allocation: randomised. Interventions: brief hospitalization vs standard hospital care, not ACT.
Holloway-London	Allocation: randomised. Interventions: case management, not ACT.
Hornstra-Kansas	Allocation: not randomised, historical controls.
Hoult-Sydney	Allocation: randomised. Interventions: ACT vs acute admission to a psychiatric hospital, this hospital diversion ACT will be a focus of another review.
Jerrell-SCarolina	Allocation: randomised. Interventions: ACT vs 12 step recovery program and behavioural skills training, no standard care control group.
Knight-Los Angeles	Allocation: not randomised, quasi-experimental design.
Kuldau-California	Allocation: randomised. Interventions: rapid discharge vs hospital care, not ACT.
Langsley-Denver	Allocation: randomised. Interventions: out-patient family crisis management vs hospital admission.
Lehman-Maryland	Allocation: randomised. Interventions: intensive case management (non-ACT, staff/patient ratio 1:15) vs lower intensity case management (staff/patient ratio 1:25).

Study characteristics tables: Assertive Community Treatment/ Assertive Outreach Teams

Macias-Utah	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: case management versus psychosocial rehabilitation programme at CMHC, not ACT.
Marshall-Oxford	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: case management versus routine care, not ACT.
Martin-Delaware	Allocation: unclear if randomised. Interventions: ACT.
McFarlane-New York	Allocation: unclear if randomised. Interventions: ACT vs ACT plus family support (FACT), no standard care group.
McGowan-California	Allocation: unclear if randomised, control and treatment groups were "randomly selected" from a population already receiving ACT or standard care.
McGrew-Indiana	Allocation: not randomised, before and after design.
Merson-London	Allocation: randomised. Interventions: multi disciplinary team home treatment vs emergency assessment at hospital, no standard care group.
Modcrin-Kansas	Allocation: randomised. Interventions: strengths model of case management vs standard case management, not ACT.
Mosher-San Francisco	Allocation: not randomised, alternative assignment.
Muijen-London1	Allocation: randomised. Interventions: ACT vs acute admission to a psychiatric hospital, this hospital diversion ACT will be a focus of another review.
Muijen-London2	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: case management versus care from CPNs in primary care, not ACT.
Pai-Bangalore	Allocation: not randomised, alternative assignment.
Polak-Denver	Allocation: randomised. Interventions: admission to small "community-based therapeutic environments" vs standard hospital care.
Reibel-Manhattan	Allocation: randomised. Interventions: brief hospital admission, not ACT.
Rosler-Mannheim1	Allocation: not randomised, case control study.
Rosler-Mannheim2	Allocation: not randomised, case control study.

Study characteristics tables: Assertive Community Treatment/Assertive Outreach Teams

Santiago-Arizona	Allocation: randomised. Participants: those with serious mental illnesses. Interventions: case management versus standard care, not ACT.
Solomon-Philadelph1	Allocation: randomised. Interventions: one type of case management vs another, not ACT.
Stein-Madison	Allocation: randomised. Interventions: ACT versus acute admission to a psychiatric hospital, this hospital diversion ACT will be a focus of another review.
Susser-New York	Allocation: randomised. Interventions: "Critical time intervention", neither case management nor ACT - it is a time-limited approach aimed at stabilising the patient's social support network.
Teague-New Hamps	Allocation: not randomised.
Thornicroft-Baltim	Allocation: not randomised.
Toro-New York	Allocation: randomised. Participants: a minority of the participants suffered from severe mental illness, around 80% were simply homeless. Interventions: "intensive case management". Outcomes: follow-up rate below acceptable levels.
Tyrer-London	Allocation: randomised. Participants: those with severe mental illnesses. Interventions: case management versus routine care, not ACT.
Vincent-Cleveland	Allocation: not randomised, alternative assignment.
Wood-New Zealand	Allocation: not randomised, case control study.

ACT - Assertive Community Treatment
 CMHC - Community Mental Health Centre
 CPN - Community psychiatric nurse

Acute Day Hospital vs Admission (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
<p>Marshall M, Crowther R, Almaraz-Serrano A, Creed F, Sledge W, Kluiters H, Roberts C, Hill E, Wiersma D.</p> <p>Acute day hospital versus admission for acute psychiatric disorders (unpublished Cochrane Review).</p> <p>NB: Also available in <i>Health Technology Assessment</i> 2001;5(21).</p>	<ol style="list-style-type: none"> 1. Systematic review of RCTs. 2. Intramural sources of support to the review: Guild Community Healthcare Trust, UK. Extramural sources of support to the review: NHS Health Technology Assessment 3. 1966-2000. 4. Relative risks and 95% confidence intervals (CI) were calculated for dichotomous data. Weighted or standardised means were calculated for continuous data. Day hospital trials tend to present similar outcomes in slightly different formats, making it difficult to synthesise data. Individual service user data were therefore sought so that outcomes could be reanalysed in a common format. 5. 9 (7 after removing 2 studies). 6. 1568 (1255). 	<p>Acute psychiatric day hospitals were defined as a units that provided "diagnostic and treatment services for acutely ill patients who would otherwise be treated on traditional psychiatric inpatient units."</p> <p>Standard inpatient care.</p>	<p>The four main outcome measures were:</p> <ol style="list-style-type: none"> 1. Feasibility and engagement: <ol style="list-style-type: none"> 1.1 proportion of participants suitable for day patient care 1.2 number lost to follow up. 2. Extent of hospital care: <ol style="list-style-type: none"> 2.1 duration of initial admission; 2.2 actual days in inpatient care; 2.3 actual days in day patient care; 2.4 actual days in inpatient or day patient care; 2.5 number re-admitted to inpatient or day patient care after discharge. 3. Clinical and Social outcomes: <ol style="list-style-type: none"> 3.1 mental state (at various time points); 3.2 social functioning (at various time points); 3.3 burden on carers (at various time points); 3.4 deaths (suicide/homicide/all causes); 3.5 employed at end of study; 3.6 satisfaction with care (patients and relatives). 4. Costs of care: <ol style="list-style-type: none"> 4.1 cost of index admission 4.2 cost of hospital care (mean monthly - comprising cost of index admission plus cost of subsequent admissions); 4.3 cost of psychiatric care (mean monthly - comprising cost of hospital care plus cost of all ambulatory psychiatric care); 4.4 cost of all care (mean monthly - comprising cost of psychiatric care plus costs of other medical/social care, but excluding wages, costs to relatives, and transfer payments).

Study characteristics tables: Acute Day Hospital vs Admission

1. New RCTs added to review. 2. RCTs removed from review.	1. None. 2. Two studies were excluded from the original review as they involved >80% participants with diagnoses other than schizophrenia. These studies were: Dick-UK-1985; Schene-NL-1993.
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Additional notes for quality assessment	
Author's objective	To assess the effectiveness of day hospital versus inpatient care, for people with acute psychiatric disorders.
What methods were used to identify primary studies?	Authors searched the Cochrane Controlled Trials Register (Cochrane Library, issue 4, 2000), MEDLINE (January 1966 to December 2000), EMBASE (1980 to December 2000), CINAHL (1982 to December 2000), Psyc LIT (1966 to December 2000), and the reference lists of articles. Researchers were approached to identify unpublished studies.
How were the inclusion criteria applied and what were they?	<p>The search for trials was performed independently and in parallel by two reviewers (MM and AA). Each reviewer read the abstracts of all publications and discarded those that were irrelevant to create a pool of trials in which day hospital treatment had been compared against a control treatment. The two pools were then merged and photocopies of the articles describing the trials were obtained. Each reviewer then independently evaluated the trials in the pool to decide which met the inclusion criteria. Of 51 trials identified, nine met the inclusion criteria. A reliability study was performed, which showed complete agreement between raters on which trials met the inclusion criteria.</p> <p>Criteria: Eligible studies were randomised controlled trials that compared admission to an acute psychiatric day hospital with admission to inpatient 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 inpatient units." Participants were people with acute psychiatric disorders (all diagnoses) who would have been admitted to inpatient care if the alternative of day hospital admission had not been available. Studies were not eligible if they were largely restricted to people 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.</p>
Criteria on which the validity (quality) of studies was assessed.	Reviewers MM and AA rated the quality of all included trials according to three quality categories described in the Cochrane Collaboration handbook. All trials in categories A, B or C were included.
How were the data extracted / synthesized from the primary studies?	<p>Individual service user data were sought from trialists for all participants randomised in eligible trials (published or unpublished). The data requested were: date of birth or age, sex, 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, number readmitted, deaths, if employed at the end of the study, and the costs of care. All individual participant data 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. Any queries were resolved by contacting the trialists. The final database entries were verified by the responsible trial investigator or statistician. For trials for which individual participant data were not available, categorical and continuous data were extracted separately from trial reports by two reviewers and cross-checked. Continuous data available only from trial reports were noted in the text but not included in the meta-analysis (this was not an a priori exclusion; there were just no instances where these data were presented in a usable form). Data were excluded if they: (1) could not be analysed on an intention-to-treat basis; (2) were collected using unpublished; or (3) were available on less than 50% of randomised subjects.</p> <p>The feasibility of day treatment was defined as the percentage reduction in acute inpatient admissions that could be achieved by diverting participants to an acute day hospital. Feasibility was estimated by a modification of the method suggested by Kluiters, the general formula being: $100 \times \frac{\text{number engaged in day hospital treatment}}{\text{number assessed for eligibility} \times R}$, where R is the randomisation ratio for the trial (defined as number of participants randomised to day hospital divided by number of participants randomised). However, estimates of feasibility are profoundly affected by judgements about what is "engagement" in day hospital treatment and how many participants have been "assessed for eligibility". It was therefore decided to perform a sensitivity analysis to give a "best" and "worst" estimate of feasibility for each included trial. The best estimate of feasibility was based on defining: (1) "engagement in day hospital" as being randomised to day hospital treatment; and (2) "number assessed for eligibility"</p>

Study characteristics tables: Acute Day Hospital vs Admission

	<p>as those remaining after exclusions for administrative reasons. participants excluded for administrative reasons were defined as those who: (1) were too well to be randomised to day care; (2) left before they could be assessed; or (3) lived outside the study catchment area. The worst estimate of feasibility was based on defining: (1) “engagement in day hospital” as: number randomised to day hospital treatment (number admitted as inpatients in first 4 weeks + number of day patients who did not turn up for day hospital treatment); and (2) “number assessed for eligibility” as the number presenting for admission before any administrative exclusions were made. A weighted average was derived for the best and worst estimates of feasibility derived in this way. However, for a minority of trials the formula for calculating feasibility could not be applied because all participants were admitted to inpatient care before randomisation to continuing inpatient care or day hospital care. For these trials, a single estimate of feasibility was calculated, based on those participants randomised to day hospital care who experienced only a brief episode of inpatient care before transfer to a day hospital.</p> <p>The number lost to follow-up was estimated by taking the number who were not re-interviewed at the final follow-up assessment. It was assumed that clients lost to follow-up also dropped out of care. To facilitate comparisons between trials, continuous variables such as days in hospital were converted to a single common scale (such as mean days in hospital per month). 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 service user was a day hospital patient (except in the case of duration of initial admission). One trial did not distinguish between duration of care and actual number of attendances, so the latter was estimated using the ratio of duration/actual attendances reported in another trial from the same centre (which took place in the same day hospital and inpatient unit). Data concerning the use of hospital care were skewed, but are nonetheless presented as Cochrane plots in this review to facilitate comparison between trials (analysis using non-parametric tests gives the same results as the parametric analyses reported in the Cochrane plots).</p> <p>For both mental state and social function there was no common outcome measure across the included studies. In order that the datasets could be pooled into a single analysis, 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. The data were then combined in a single longitudinal analysis using a random effects model. A difference in the effect of treatment would manifest itself in a more rapid decline in one treatment group than the other. A multilevel statistical model was used that corresponds to straight lines being fitted to each subject. Random intercepts were considered to allow for individual variation between participants within treatment groups. An initial analysis was carried out to assess whether a random slope effect term needed to be included in the models. The average effect of each intervention over time is expressed as a mean line. The treatment effect can be measured by a time-intervention group interaction in the model. To assess the effect of treatment, a full model with a time-intervention group interaction was compared with a reduced model excluding this term. All analysis was performed using the MLwiN statistical program, which provides a system for the specification and analysis of a range of multilevel models with estimation using iterative generalised least squares. Three covariates common to the included trials (age, diagnosis and sex) were included in the analysis.</p>
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References to included studies

Creed-UK-1990 {published data only}

Creed F, Black D, Anthony P, Osborn M, Thomas P, Tomenson B. Randomised controlled trial of day patient versus inpatient psychiatric treatment. *BMJ* 1990;300:1033-7.

Creed-UK-1996 {published data only}

Creed F, Mbaya P, Lancashire S, Tomenson B, Williams B, Holme S. Cost effectiveness of day and inpatient psychiatric treatment. *BMJ* 1997;314:1381-5.

Dick-UK-1985 {published data only}

Dick P, Cameron L, Cohen D, Barlow, Ince A. Day and full time psychiatric treatment: a controlled comparison. *Brit J Psychiat* 1985;147:246-9.
Dick P, Ince A, Barlow M. Day treatment: suitability and referral procedure. *Brit J Psychiat* 1985;147:250-3.

Study characteristics tables: Acute Day Hospital vs Admission

Herz-US-1971 {published data only}

Herz MI, Endicott J, Spitzer RL, Mesnikoff A. Day versus inpatient hospitalization: a controlled study. Am J Psychiatry 1971;10:1371-82.

Kris-US-1965 {published data only}

Kris EB. Day hospitals. Current Therapeutic Research 1965;7:320-3.

Schene-NL-1993 {published data only}

Schene AH, van Wijngaarden B, Poelijoe NW, Gersons BPR. The Utrecht comparative study on psychiatric day treatment and inpatient treatment. Acta Psychiatr Scand 1993;87:427-36.

Sledge-US-1996 {published data only}

Sledge WH, Tebes J, Rakfeldt J, Davidson L, Lyons L, Druss B. Day hospital/crisis respite care versus inpatient care, part I: clinical outcomes. Am J Psychiatry 1996;153:1065-73.
 Sledge WH, Tebes J, Wolff N, Helminiak TW. Day hospital/crisis respite care versus inpatient care, part II: service utilization and costs. Am J Psychiatry 1996;153:1074-83.

Wiersma-NL-1989 {published data only}

Wierma D, Kluiters H, Nienhuis F, Ruphan M, Giel R. Day-treatment with community care as an alternative to standard hospitalization: an experiment in the Netherlands. A preliminary communication. Groningen, Netherlands: Department of Social Psychiatry, University of Groningen, 1989.
 Nienhuis FJ, Giel R, Kluiters H, Ruphan M, Wiersma. Efficacy of psychiatric day treatment. Course and outcome of psychiatric disorders in a randomised trial. Eur Arch Psychiatry Clin Neurosci 1994;244:73-80.
 Kluiters H, Giel R, Nienhuis FJ, Ruphan M, Wiersma D. Predicting feasibility of day treatment for unselected patients referred for inpatient psychiatric treatment: results of a randomized trial. Am J Psychiatry 1992;149:1199-205.
 Wiersma D, Kluiters H, Nienhuis FJ, Ruphan M, Giel R. Costs and benefits of hospital and day treatment with community care of affective and schizophrenic disorders. Brit J Psychiat 1995;166:52-9.
 Wiersma D, Kluiters H, Nienhuis FJ, Ruphan M, Giel R. Costs and benefits of day treatment with community care for schizophrenic patients. Schizophrenia Bulletin 1991;3:411-9.

Zwerling-US-1964 {published data only}

Zwerling I, Wilder JF. An evaluation of the applicability of the day hospital in the treatment of acutely disturbed patients. The Israel Annals of Psychiatry and Related Disciplines 1964;2:162-85.
 Wilder JF, Levin G, Zwerling I. A two-year follow-up evaluation of acute psychotic patients treated in a day hospital. Am J Psychiat 1966;122:1095-101.

Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
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Study characteristics tables: Acute Day Hospital vs Admission

<p>Creed-UK-1990</p>	<p>Setting: Acute day hospital in inner-city Manchester, UK. Allocation: randomised, sealed envelope. Follow up: 3, 12 months. Evaluation: by rater independent of treating clinician, but not blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: schizophrenia 23.5%, mood disorder 25.4%, other 51%. Inclusion criteria: (i) presenting for inpatient admission; (ii) not involuntary patient; (iii) not too ill for day care; (iv) no social factors that made day care impractical. N= 102. Age ~ 42 years. Sex: F 44%, M 66%. History: ethnic ?%; married 39%; unemployed 45%; mean previous admissions 1.8.</p>	<p>1. Acute day hospital treatment (8 nurses and 3 occupational therapists), N=51. 2. Routine inpatient treatment. N =51.</p>	<p>Number lost to follow up. Readmitted. Duration index admission (estimated from IPD). Inpatient & day patient days/month (IPD). Mental state (IPD-PSE, Wing 1972). Social functioning (IPD-SBAS Role, Platt 1981). Burden on relatives (IPD-SBAS Burden, Platt 1981). Costs of hospital care (estimated from IPD). Unable to use - Hamilton rating scale - only measured depressive symptoms. Social behaviour (SBAS behaviour, Platt 1981) - role functioning used as key indicator of social functioning.</p>	<p>Type 1 trial (IPD obtained). Loss to follow up 31%.</p>	<p>A</p>
<p>Creed-UK-1996</p>	<p>Setting: Acute day hospital in inner-city Manchester, UK. Allocation: randomised, sealed envelope. Follow up: 0.5, 1, 2, 3, 6, 12 months. Evaluation: by rater independent of treating clinician, but not blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: schizophrenia 38.5%, mood disorder 30%, other 31.5%. Inclusion criteria: (i) presenting for IP admission; (ii) 18-65; (iii) not involuntary patient; (iv) not too ill for day care; (v) not admission for detox; (vi) no organic brain disease, personality disorder or mania. N=187. Age: mean ~ 38 years. Sex: F45.5%, M 54.5% History: ethnic minority 21.5%; married 33%; unemp 41.5%; mean prev admissions 2.6.</p>	<p>1. Acute day hospital treatment (CPN out of hours) N = 94 2. Routine inpatient treatment. N = 93</p>	<p>Number lost to follow up. Readmitted. Duration index admission (IPD). Inpatient & day patient days/month (IPD). Mental state (IPD-CPRS, Asberg 1978). Social functioning (IPD-SBAS Role, Platt 1981). Burden on relatives (IPD-SBAS Burden, Platt 1981). Duration of index admission (IPD). Costs of care (IPD). Unable to use - Social behaviour (SBAS behaviour, Platt 1981) - role functioning used as key indicator of social functioning. Burden on relatives (GHQ, Goldberg 1972) - redundant measure, more extensive measure of burden from this trial already included).</p>	<p>Type 1 trial (IPD obtained). Loss to follow up: 23.5%.</p>	<p>A</p>

Study characteristics tables: Acute Day Hospital vs Admission

<p>Dick-UK-1985 (Excluded from current review)</p>	<p>Setting: Acute day hospital in Dundee, Scotland. Allocation: randomised - no further details. Follow up: 0, 3, 12 and 52 weeks. Evaluation: by an independent research psychiatrist, who was not blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: schizophrenia % not known, mood disorder 56%. Inclusion criteria: (i) suitable for day hospital treatment (excluded if: too ill; suicidal; or impractical). N=91. Age: mean ~ 35 years Sex: F 67.6%, M 32.4% History: ethnic minority % not reported; married 50.4%; unemp 56.6%; mean prev admissions not known.</p>	<p>1. Acute Day hospital (2 trained staff + occupational therapist, patient /staff ratio: 12.5:1, individual counselling, groups, activities and medication), N = 43. 2. Inpatient care (mixed sex and female wards), N = 48.</p>	<p>Number lost to follow up. Readmitted. Satisfaction with care. Duration of index admission. Mental state (CIS, Goldberg 1972). Cost of index admission. Unable to use - On medication at one year - not an outcome for this review.</p>	<p>Type 1 trial (contacted but IPD no longer exists). Lost to follow up 29.6%.</p>	<p>B</p>
<p>Herz-US-1971</p>	<p>Setting: Acute day hospital in New York State, USA. Allocation: randomised by random number table. Candidates admitted to inpatient care, then evaluated and those eligible for day hospital randomly allocated to day hospital or continuing inpatient care. Follow up: 2 weeks, 1, 5, 24, months. Evaluation: by independent research interviewers, who were not blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: schizophrenia 36%, other 64%. Inclusion criteria: (i) not too ill for day care; (ii) not too well for day care; (iii) day care impractical. N=90. Age: mean ~ 32 years. Sex: F 59%, M 41% History: ethnic minority 37%; married 11%; unemployed % unknown; prev admission 49%.</p>	<p>1. Acute Day hospital, (5 days (weekdays) attendance, 8-4.30pm), group-oriented psychotherapy; patient/staff ratio not reported. N = 45. 2. Routine inpatient care. Staff, setting and activities are the same for both groups. N = 45.</p>	<p>Number lost to follow up. Deaths. Readmitted. Duration of index admission. Unable to use - Mental state - Psychiatric Evaluation Form (Spitzer 1967) & Psychiatric Status Schedule (Spitzer 1970) - no summary data provided.</p>	<p>Type 1 trial (contacted, but IPD no longer exists). Lost to follow up 18.8%.</p>	<p>B</p>

Study characteristics tables: Acute Day Hospital vs Admission

<p>Kris-US-1965</p>	<p>Setting: Acute day hospital in New York, USA. Allocation: randomised at time of relapse, to day hospital or inpatient admission - no further details. Follow up: 2 months after discharge. Evaluation: unclear, but data available only on number of participants in employment. Analysis: intention to treat .</p>	<p>Diagnosis: not reported, but all had suffered from "psychosis". Inclusion criteria: previously treated in hospital for psychotic symptoms. N= 141. Age: mean unknown. Sex: F unknown, M unknown. History: ethnic minority % unknown; married % unknown; unemployed % unknown; mean previous admissions % unknown.</p>	<p>1. Acute Day hospital, Mondays to Fridays, 9-5pm; patient/ staff ratio not reported; emphasis on milieu and group therapy. N = 71 2. Standard inpatient treatment. N = 70.</p>	<p>Number employed (2 months after treatment ended). Unable to use - Days in hospital - mean and sd not reported. Mental state (Wittenborn rating scale) - no data reported.</p>	<p>Type 1 trial (unable to contact). Lost to follow up - not clear.</p>	<p>B</p>
<p>Schene-NL-1993 (Excluded from current review)</p>	<p>Setting: Acute day hospital at the University of Utrecht, Netherlands. Allocation: randomised - no further details, but 14 later withdrawn because of "incorrect randomisation". Follow up: at 6 ms following discharge. Evaluation: unclear if raters independent of treating clinicians, not blind. Analysis: not intention to treat, see notes. Lost to follow up: not clear given exclusions.</p>	<p>Diagnosis: precise estimate not possible because of post-randomisation exclusions. Inclusion criteria: (i) referred for inpatient treatment; (ii) under 65; (iii) no organic brain disease; (iv) no primary diagnosis or substance abuse or mental retardation; (v) no other contraindications to day treatment. N=222. Demographic composition is uncertain given the exclusions post-randomisation.</p>	<p>1. Acute day hospital at the University of Utrecht. Staff patient ration1:12.5; emphasis on psychosocial therapy. 2. Standard inpatient care at University Psychiatric Clinic in Utrecht.</p>	<p>All outcomes other than data relating to feasibility were excluded as this was not an intention to treat analysis.</p>	<p>Type 1 trial (no attempt to obtain IPD as not an intention to treat analysis). Lost to follow up: not clear given exclusions. Not an intention to treat analysis as 72 participants were excluded after randomisation including any day patients transferred to a closed ward for more than 28 days.</p>	<p>C</p>

Study characteristics tables: Acute Day Hospital vs Admission

<p>Sledge-US-1996</p>	<p>Setting: Day hospital of a community mental health centre day hospital in New Haven, Connecticut, USA. Allocation: computer-generated randomisation by a researcher unaware of participant characteristics. (However, if no bed available candidate was allocated to the other condition). Follow up: discharge, 2, 5, 10 months. Evaluation: by rater independent of treating clinician, but not blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: schizophrenia 39%, mood disorder 52%, other 9%. Inclusion criteria: (i) >18 years, (ii) presenting for IP admission; (iii) living locally; (iv) not involuntary; (v) not too ill for DP treatment; (vi) not intoxicated or medically unwell. N= 197. Age: mean ~ 33 years. Sex: F49% M 51%. History: ethnic minority 32%; married 13.7%; unemployed 37%; prev admissions - unknown but 52% were previously high service users.</p>	<p>1. Acute Day hospital/crisis respite programme+ "back up" bed if necessary. (Day hospital is a 20 patient facility with doctors, nurses, social workers, therapists; open 9-3pm Mondays to Fridays. Emphasis in group work, control of symptoms and improvement of daily skills). N = 93. 2. Inpatient care (36 bed unit with doctors and nursing staff, psychologist, mental health workers and a very active programme). N = 104.</p>	<p>Number lost to follow up. Readmitted. Duration of index admission (IPD). Inpatient & day patient days/month (IPD). Mental state - (BPRS, Overall 1962). Social functioning (SAS, Weissman 1981). Costs of care. Unable to use Global functioning - Global Assessment Scale (Endicott 1976) - not an outcome in this review. Mental state - (SCL-90, Derogatis 1977) - redundant measurement - BPRS also used. Quality of life - unpublished scale. Satisfaction - unpublished scale.</p>	<p>Type 1 trial (IPD obtained). Lost to follow up 28.4%.</p>	<p>A</p>
<p>Wiersma-NL-1989</p>	<p>Setting: Acute day hospital operated by the Regional Institute for Ambulatory Mental Health Care in Groningen, Netherlands. Allocation: randomisation - by block using sealed envelope. Follow-up: 1 and 2 years. Evaluation: by independent raters who were not blind to group allocation. Analysis: Intention to treat.</p>	<p>Diagnosis: schizophrenia 33.1%, mood disorder 30.1%, other 36.8%. Inclusion criteria: (i) presenting for admission; (ii) forensic patients on court order; (iii) people with dementia. N= 160. Age: mean ~ 42 years. Sex: F 50%, M 50%. History: ethnic minority % unknown; married 37.5%; unemployed 89%; prev admissions 61% .</p>	<p>1. Acute Day hospital in hospital grounds. Pts admitted as soon as considered no risk to self or others. 8.30 - 16.30 5/7. Could be inpatient for 1-2 nights on demand and 24 hr on call line to nurse. N = 103 2. Routine hospital inpatient care. N = 57</p>	<p>Number lost to follow up. Deaths. Readmitted. Unemployed. Days in hospital care (IPD). Mental state - (IPD-PSE, Wing 1974). Social functioning - (IPD-Groningen Social Disability Scale, Wiersma 1990). Unable to use - Satisfaction with care (data available on less than 50% of those entering the trial).</p>	<p>Type 2 trial (IPD obtained). Lost to follow up: 41% at 2 years.</p>	<p>A</p>

Study characteristics tables: Acute Day Hospital vs Admission

<p>Zwerling-US-1964</p>	<p>Setting: Acute day hospital in New York, USA. Allocation: randomisation via list held by phone answering service (fixed ratio). Follow up - 2 years. Evaluation: by rater independent of treating clinician, but not blind to group allocation. Analysis: Not an intention to treat analysis, participants with organic brain disease were randomised but then excluded.</p>	<p>Diagnosis: not known. Inclusion criteria: patients about to be admitted were allocated to day hospital or inpatient treatment. N= 378. Age: not known. Sex: F% not known. History: ethnic minority % not known; married % not known; unemployed % not known; prev admission % not known.</p>	<p>Acute day hospital with group oriented activities and family therapy. Participants are reviewed twice weekly; five day attendance. N = 189 2. Routine inpatient care. N = 189</p>	<p>All outcomes other than data relating to feasibility were excluded as this was not an intention to treat analysis.</p>	<p>Type 2 trial (unable to contact). Lost to follow up: 8%</p>	<p>A</p>
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IPD = individual patient data.

(IPD) = individual patient data were used to calculate this outcome.

"~" indicates "approximately".

Vocational Rehabilitation (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes (<i>including new RCTs</i>)
<p>Crowther R, Marshall M, Bond G, Huxley P.</p> <p>Vocational rehabilitation for people with severe mental illness (Cochrane Review).</p> <p>In: <i>The Cochrane Library</i>, Issue 4, 2001. Oxford: Update Software.</p>	<ol style="list-style-type: none"> 1. Systematic review of RCTs. 2. Intramural sources of support to the review: Guild Community Healthcare Trust, UK. Extramural sources of support to the review: NHS Health Technology Assessment; NHS Executive North West. 3. Database origin to 1998. 4. Relative risks (RR) and 95% confidence intervals (CI) of homogeneous dichotomous data were calculated. A random effects model was used for heterogeneous dichotomous data. Continuous data were presented in tables (there were insufficient continuous data for formal meta-analysis). A sensitivity analysis was performed, excluding poorer quality trials. 5. 18 (20 including new trials). 6. 2417 (2840 including new trial). 	<ol style="list-style-type: none"> 1. Pre-vocational Training: defined as any approach to VR in which participants were expected to undergo a period of preparation, before being encouraged to seek competitive employment. This preparation could involve either work in a sheltered environment (such as a workshop or work unit), or some form of pre-employment training or transitional employment. Includes both traditional (sheltered workshop) and Clubhouse approaches. 2. Supported Employment: defined as any approach to VR that attempted to place clients immediately in competitive employment. It was acceptable for Supported Employment to begin with a short period of preparation, but this had to be of less than one month duration and not involve work placement in a sheltered setting, or training, or transitional employment. 3. Modifications of vocational rehabilitation programs: defined as either Pre-vocational Training or Supported Employment that had been enhanced by some technique to increase participants' motivation. Typically such techniques consisted of payment for participation in the program, or some form of psychological intervention. 4. Standard care: defined as usual psychiatric care for participants in the trial, without any specific vocational component. In all trials where an intervention is compared against standard care, unless otherwise stated clients will have received the intervention in addition to standard care. Thus, for example, in a trial comparing Pre-vocational Training against standard community care, participants in the Pre-vocational Training group will also be in receipt of standard community services, such as out-patient 	<p>The primary outcome was number of clients in competitive employment at various time points (defined as a full or part time position held by the client in an ordinary work setting, for which they were receiving payment at the market rate).</p> <p>Secondary outcome measures were grouped into three main categories.</p> <ol style="list-style-type: none"> 1. Other employment outcomes: <ol style="list-style-type: none"> 1.1 in any form of employment (defined as competitive employment, transitional employment, sheltered employment or voluntary work); 1.2 in any form of employment or education (defined as above but including people on training courses or full or part-time education); 1.3 mean hours per month in competitive employment; 1.4 mean monthly earnings. 2. Clinical outcomes: <ol style="list-style-type: none"> 2.1 numbers lost to follow up (for trials with community or hospital controls only) or numbers not participating in program (for trials comparing different VR approaches); 2.2 admitted to hospital (for trials with a community control) or number living in community at end of study (if a hospital control); 2.3 other clinical outcomes (e.g. symptoms, quality of life and social functioning). 3. Costs: <ol style="list-style-type: none"> 3.1 mean monthly program costs (direct costs of experimental program versus direct costs of control program); 3.2 mean monthly healthcare costs (including costs of all psychiatric/medical care and program costs, but excluding earnings

Study characteristics tables: Vocational Rehabilitation

		appointments.	or transfer costs i.e. benefits obtained).
New RCTs	Mueser 2001 (N=204); Lehman 2002 (N=219).		

Additional notes for quality assessment	
Author's objective	To assess the effects of Pre-vocational Training and Supported Employment (for people with severe mental illness) against each other and against standard care (in hospital or community). In addition, to assess the effects of: (a) special varieties of Pre-vocational Training (Clubhouse model) and Supported Employment (Individual Placement and Support model); and (b) techniques for enhancing either approach, for example payment or psychological intervention.
What methods were used to identify primary studies?	Searches were undertaken of CINAHL (1982-1998), The Cochrane Library (Issue 2, 1999), EMBASE (1980-1998), MEDLINE (1966-1998) and PsycLIT (1887-1998). Reference lists of eligible studies and reviews were inspected and researchers in the field were approached to identify unpublished studies.
How were the inclusion criteria applied and what were they?	The list of publications identified by the search strategy was examined by two reviewers working independently (MM, RC). Each reviewer discarded irrelevant publications and retained only those trials in which some form of vocational rehabilitation had been compared against a control treatment. The reviewers then obtained copies of all papers relating to relevant trials. Once these papers had been obtained they were read independently by the two reviewers who decided whether the trials were eligible for the study and allocated them to one of six possible comparisons (Pre-vocational Training versus hospital control; Pre-vocational Training versus community control; Supported Employment versus Pre-vocational Training; Supported Employment versus community control; modifications of vocational rehabilitation programs). Inter-rater agreement was assessed for overall eligibility and for allocation of trials to comparisons.
Criteria on which the validity (quality) of studies was assessed.	MM and RC rated each trial according to the three categories of allocation concealment described in the Cochrane Collaboration Handbook. When the method of allocation concealment was unclear, trialists were contacted for further details. Blinding of participants and treating clinicians is not possible in trials of vocational rehabilitation. It is also difficult for those evaluating outcome to remain blind to group allocation, as they are obliged to collect data that indicate group allocation (such as days in different types of employment). However, trials were rated on independence of evaluators from those providing the intervention.
How were the data extracted from the primary studies?	All data were extracted by the two reviewers working alone and then cross-checked to ensure reliability.

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Schizophrenia (update): Appendix 15d

Study characteristics tables: Vocational Rehabilitation

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Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
<p>Beard-NewYork</p>	<p>Allocation: by day of application - participants referred on every fourth day allocated to control group. Follow up: every 3 months for two years.* Lost to follow-up: 14%, hard to verify from data. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. discharged from in-patient psychiatric care in last 4 months; ii. in-patient >2 months; iii. no primary diagnosis of substance abuse, "overt homosexuality", epilepsy, "criminal behaviour"; iv. local resident. Diagnosis: schizophrenia, schizophrenia-like disorders (82%). N=352. Age: 68% under 35. Sex: 40% women. Race: 12% non-white. History: ever married 23%, ever employed U/K, time since last employment U/K, previous admissions >1. Setting: urban psychiatric rehabilitation centre, New York, USA.</p>	<p>1. Clubhouse group: i. social activities; ii. "work-ordered day" on work-crews; iii. transitional employment for 3-4 months after completing phases i. + ii.; iv. real job placement with outreach and supported accommodation (mean daily attendance ~75, 10 F/t staff, mainly psychiatric social workers, emergency psychiatric consultation provided by P/t psychiatrist. N=274. 2. Control: continued to receive community care from other services (not specified). N=78.</p>	<p>In competitive employment.* In any form of employment. Not participating in program. Rehospitalised.</p>	<p>* Not all participants followed up for a full two years - participants continued to enter the study until the last 3 months. Thus numbers followed up are different at different time points.</p>	<p>C</p>

Study characteristics tables: Vocational Rehabilitation

<p>Becker-Fort Worth</p>	<p>Allocation: 'randomly assigned' - no details given. Follow up: 8 months.* Lost to follow-up: 0%. Objectivity of rating of outcome: unclear.</p>	<p>Inclusion criteria: i. age <62; ii. in psychiatric hospital >2 years in last 4; iii. no dementia or severe disability; iv. not about to be discharged; v. no unpredictable violence (149/411 in-patients excluded, random sample of 50 selected from remainder). Diagnosis: schizophrenia, schizophrenia-like disorders (78%). N=50. Age: mean ~46 years. Sex: not reported. Race: not reported. History: ever married U/K, ever employed >50%, time since last employment >2 years, previous admissions >1, mainly veterans or seamen. Setting: general psychiatric hospital, Texas, USA.</p>	<p>1. Specialised rehabilitation ward: i. intensive multi-disciplinary input; ii. social skills groups; iii. group and individual vocational assignments; iv. tours of local industrial facilities; v. sheltered workshop; vi. transitional work experience in local community enterprises. N=25. 2. Control: continuing inpatient treatment on rehabilitation wards, option of referral to external vocational rehabilitation services. N=25.</p>	<p>In competitive employment. In any employment. Discharged from hospital. Lost to follow up.</p>	<p>* The full trial was three phases lasting for total of 20 months - only phase 1 is relevant to this review.</p>	<p>B</p>
<p>Bell-Connecticut</p>	<p>Allocation: 'randomised' - method not specified. Follow up: 5 months. Lost to follow-up: 4%. Objectivity of rating of outcome: independent raters.</p>	<p>Inclusion criteria: i. diagnosis of schizophrenia or related disorder; ii. stable (no changes in drugs, housing or treatment status in month); iii. no organic brain disease or physical disability. Diagnosis: schizophrenia, schizophrenia-like disorders (100%). N=150. Age: mean ~43 years. Sex: 4% women. Race: 31% non-white. History: ever married U/K, ever employed U/K, time since last employment U/K, previous admissions ~8.5. Setting: general hospital, Connecticut, USA.</p>	<p>1. Sheltered set-aside jobs in the hospital: i. up to 20 hours/week; ii. paid \$3.4/hour; iii. worked alongside regular hospital staff in posts ranging from administrative to portering; iv. attended weekly 50 minute support group. N=80. 2. Control: as above but not paid. N=70. Both groups continued to receive benefit entitlement.</p>	<p>In any type of employment.* Monthly earnings. Not participating in program. Rehospitalised. Mental state: PANSS. Unable to use - Time in any form of employment (not primary or secondary outcome variable).</p>	<p>* People lost to follow up treated as not working. 6 participants in control group transferred to half-way house and excluded because it had its own work program - treated as working and as not dropping out.</p>	<p>B</p>

Study characteristics tables: Vocational Rehabilitation

<p>Blankertz-Philadelph</p>	<p>Allocation: random allocation with "oversampling of experimental group" - not clear what this means.* Follow up: 9 months. Lost to follow-up: 0%. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. severe mental illness (unspecified); ii. unemployed; iii. client of CMHC. Diagnosis: schizophrenia, schizophrenia-like disorders (72%). N=122. Age: mean 36 years. Sex: 36% women. Race: 20% non-white. History: ever married 16%, ever employed 82%, time since last employment ~9 years, previous admissions U/K. Setting: CMHC, Philadelphia, USA.</p>	<p>1. Two employment specialists: using counselling, social learning techniques, group sessions, rewards for passing up a "ladder" of success (making positive changes, setting goals, making transition to state vocational rehabilitation centre, entering the world of work). No specific prevocational training, but some job finding for a few who did not want to enter the VR system, plus usual CMHT. N=61. 2. Control: usual services of CMHT: including partial hospitalisation, outpatient services, therapy and medication management. No specific vocational services, but could have referral to state VR service. N=61.</p>	<p>In competitive employment. Not participating in program. In any form of employment or education. Unable to use - Self-esteem: Rosenberg's scale (no comparison with control group). Social functioning: Social Level of Functioning Scale (no comparison with control group).</p>	<p>* Method of randomisation unusual - the paper suggests that a high drop-out rate after randomisation led to replacement of people in the treatment group - but this is not explicit. It is possible that this is not an intention to treat analysis.</p>	<p>B</p>
<p>Bond-Chicago1</p>	<p>Allocation: random assignment - information from trialists indicates that sealed envelope method was used. Follow up: 4,9,15 months. Lost to follow-up: 18%. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. age >18; ii. no prior participation in program; iii. unemployed; iv. wanting employment; v. attendance of >40 hours in first 4 weeks after admission (drop-out rate of 20% before screening). Diagnosis: schizophrenia, schizophrenia-like disorders (55%). N=131. Age: mean ~25 years. Sex: 31% women. Race: 25% non-white. History: ever married U/K, ever employed 72%, time since last employment 9 months, previous admissions U/K but 48% >3 admissions. Setting: urban, private psychosocial rehabilitation agency, Chicago, USA.</p>	<p>1. Immediate job placement: i. paid transitional employment (minimum 2 days/week); ii. no prevocational preparation; iii. strong expectation to engage in paid employment; iv. close supervision by staff member. N=64. 2. Control: i. gradual approach to supported employment; ii. remained in unpaid prevocational work crew (minimum 4 months); iii. followed 'standard' schedule; iv. if placement failed returned to work crews before starting again; v. volunteer placements also available. N=67. Both groups could participate in individual and group counselling, evening support groups and a job-club.</p>	<p>In competitive employment. In any employment. Monthly earnings. Not participating in program. Rehospitalised. In any form of employment or education. Unable to use - Time in employment (not primary or secondary outcome).</p>		<p>B</p>

Study characteristics tables: Vocational Rehabilitation

<p>Bond-Indiana</p>	<p>Allocation: 'randomly assigned' - information from trialists indicates that randomisation was by an independent co-ordinator using sealed envelopes. Follow up: 12, 24, 48 months. Lost to follow-up: 14% at 1 year, 6% at 4 years - only 1 site followed up at 4 years. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. age 18-60; ii. severe mental disorder (Indiana Department of Mental Health Criteria - based on diagnosis, disability & duration); iii. eligible for disability benefit; iv. enrolled in the CMHC community support program; v. no recent V-R; vi. unemployed >3 months; vii. wanting to work; viii. consistent attendance at CMHC over preceding 4 weeks. Diagnosis: schizophrenia, schizophrenia-like disorders (66%). N=86. Age: mean ~35 years. Sex: 49% women. Race: 20% non-white. History: ever married 52%, ever employed 82%, time since last employment 38 months, previous admissions 5.3. Setting: 4 CMHTs, 57%:43% urban:rural population, Indiana, USA.</p>	<p>1. Immediate entry into supported employment: >4 months preparation in prevocational work-readiness training then rural CMHC provided i. 2 employment specialists (employed by CMHC, receiving internal referrals, 1 client at a time, intensive job-coaching at beginning of placement.); ii. follow-on staff worker (maintained contact after initial adjustment phase) and urban CMHCs provided 3 employment specialists (liaised with teams, carried individual case loads). N=43. 2. Control: >4 months preparation in prevocational work-readiness training. N=43.</p>	<p>In competitive employment. Not participating in program. Monthly earnings. Costs: program costs, all health care costs. Unable to use - In competitive employment at 48 months (follow up <50%). Admitted to hospital (no data). Time in any employment (not a primary or secondary outcome variable).</p>	<p>Two separate trials described in the reports. Both involve accelerated placement in supported employment. One involves VR team integrated into a CMHC, the other, an independent VR team liaising with 4 different CMHCs. Not possible to report all data separately for the two trials. The integrated site has a slightly better outcome for the accelerated group.</p>	<p>A</p>
<p>Chandler-LongBeach</p>	<p>Allocation: 'randomised' - no further details. Follow up: 12, 24, 36 months. Lost to follow up: 21% at 1 year, 29% at 3 years. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. "serious & persistent mental disorder" (DSM-III-R); ii. no primary diagnosis of substance abuse; iii. substantial functional impairment due to mental disorder (not defined); iv. eligible for public assistance as a result of functional impairment. Diagnosis: schizophrenia, schizophrenia-like disorders (55.2%). N=256. Age: ~30% over 45 years. Sex: 43% women. Race: ~32% non-white. History: ever married 47%, ever employed U/K, time since last employment U/K but 82% >1year, previous admissions U/K. Setting: integrated services agency, California, USA.</p>	<p>1. Village integrated services agency: i. assertive community treatment; ii. employment program based at central site (possible immediate entry into employment opportunities [cafe, store, catering service, client bank, janitor service]); iii. two staff to develop competitive jobs and support clients (supported employment). Finding employment was key value of program. N=127. 2. Control: usual mental health services i. limited case management; ii. limited amount of other rehabilitative services. N=129.</p>	<p>In competitive employment. In any employment. Monthly earnings. Admitted to hospital. Not participating in program. Costs: total mental health costs. Unable to use - Other clinical outcomes are available but unclear how far they are attributable to Assertive Community Treatment and how far to supported employment (see text for explanation).</p>		<p>B</p>

Study characteristics tables: Vocational Rehabilitation

<p>Dincin-Chicago</p>	<p>Allocation: 'random assignment at intake' - information from trialists indicates randomisation was by independent trial co-ordinator using sealed envelopes. Follow up: 9 months. Lost to follow-up: 37%. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. severe mental disorder; ii. accepted by agency for rehabilitation; iii. no primary diagnosis of substance abuse or mental retardation; iv. age >19. Diagnosis: schizophrenia, schizophrenia-like disorders (86%). N=132. Age: mean ~25 years. Sex: 47% women. Race: not reported. History: ever married U/K, ever employed U/K, time since last employment U/K, previous admissions ~3. Setting: urban, privately operated VR centre, Chicago, USA.</p>	<p>1. Threshold rehabilitation program: i. individual case work; ii. work crews leading to transitional employment; iii. problem-solving and activity groups; iv. linked residential facilities (where suitable); v. special education program; vi. medication and relapse discussion group; vii. staff:patient ratio 1:10. N=66. 2. Control: 6 hours/week supportive treatment "widely used by practitioners who treat severely disturbed clients"; i. referral to existing community services where appropriate; ii. discussion and peer-support group; iii. visits fortnightly by consulting psychiatrist (prescribed and discussed medication); iv. in nearby church; v. staffed by 2 P/t workers and volunteers; vi. staff:patient ratio 1:20. N=66.</p>	<p>In competitive employment. Admitted to hospital. Not participating in program.* Costs of care.</p>	<p>*15 people in each group excluded from further analysis after randomisation because they failed to participate in programs - have been added to the denominator for number not participating.</p>	<p>A</p>
<p>Drake-New Hampshire1</p>	<p>Allocation: 'randomly assigned' - information from trialists indicated that randomisation was by an off-site co-ordinator using computer-generated random numbers. Follow up: monthly for 2 years (preceded by 4 once-weekly "informational" meetings). Lost to follow-up: 2%. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. major mental illness with major role dysfunction for past 2 years; ii. in community >1 month; iii. living locally; iv. age 20-65 years; v. unemployed >1 month, wanting to work; vi. no substance dependence, physical disability, or memory impairment. Diagnosis: schizophrenia, schizophrenia-like disorders (46.9%). N=143. Age: mean ~37years. Sex: 52% women. Race: 5% non-white. History: ever married 50%, ever employed - "relatively good employment history", time since last employment U/K, previous admissions U/K but "many" hospitalised in last year. Setting: urban, New Hampshire, USA.</p>	<p>1. Individual placement and support program: i. integrated team working within mental health services; ii. employment specialists attached directly to clinical teams (helped clients find jobs immediately, provided on-job training, supportive follow-up); iii. 3 staff working directly with clients in all phases of supported employment (direct contact time with staff ~62 hours). N=74. 2. Brokered model (GST) pre-employment preparation group: i. discussions of skills needed to get and keep jobs; ii. practising these skills; iii. exploration of work-related values; iii. exploration of clients' strengths and weaknesses as workers; iv. interview skills meetings; v. discussion of job leads and interviews (meetings 2/week); vi. once employed received on job support (liaison with mental health providers, follow-along support); vii. 3 staff divided functions into job training, job development, and job support roles (direct contact time with staff=74 hours). N=69.</p>	<p>In competitive employment. Time in competitive employment. Monthly earnings. Not participating in program. Global functioning: GAS scores. Self-esteem: Rosenberg's scale Mental state: BPRS expanded. Costs: program costs, all health care costs. Unable to use - Quality of life: Lehman's scale (subscales only).</p>	<p>Two centre trial but not possible to separate the data by site.</p>	<p>A</p>

Study characteristics tables: Vocational Rehabilitation

<p>Drake-Washington</p>	<p>Allocation: by off-site co-ordinator using random number tables, stratified according to work history (information from trialists). Follow up: 6, 12 & 18 months. Lost to follow up: 5% at 18 months. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. severe mental disorder; ii. unemployed; iii. no memory impairment or medical illness precluding working/ participating in job interviews. Diagnosis: schizophrenia, schizophrenia-like disorders (67%). N=152. Age: mean ~39 years. Sex: 61% women. Race: 83% non-white. History: ever married 34%, ever employed U/K, time since last employment U/K, previous admissions U/K. Setting: urban, Washington DC, USA.</p>	<p>1. Individual Placement and Support (IPS): i. rapid job search; ii. follow-on support after securing work (counselling, transportation, intervening with employer); iii. 3 employment specialists (25 clients each). N=76. 2. Enhanced Vocational Rehabilitation (EVR): i. VR service enhanced by extra VR counselor who monitored clients' satisfaction with service; ii. goal of competitive employment but involved prevocational experiences, work adjustment training in sheltered workshop (primarily paid). N=76.</p>	<p>In competitive employment. Monthly earnings. Mental state: BPRS expanded. Quality of life: Lehman's scale. Self-esteem: Rosenberg's scale. Unable to use - In any employment throughout study (not primary or secondary outcome). Satisfaction with leisure/ finances/job/housing/ town (sub-scale of Lehman's scale). Time to find employment (not primary or secondary outcome measure). Days in hospital (not primary or secondary outcome measure).</p>		<p>A</p>
<p>Gervey-New York</p>	<p>Allocation: 'randomly assigned' - information from trialists indicates this was "lots drawn from a hat". Follow up: 12 months (preceded by assessment and vocational skills training phase). Lost to follow-up: 0% - difficult to verify. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. severely disabled by major mental illness (SCID); ii young (not specified). Diagnosis: schizophrenia, paranoid personality disorder, major affective disorder, attention deficit disorder, oppositional-defiant disorder (proportions U/K). N=34. Age: mean ~19 years. Sex: 33% women. Race: 83% non-white. History: ever married U/K, ever employed 20%, time since last employment U/K, previous admissions U/K, from low-income families. Setting: densely populated urban centre, New York, USA.</p>	<p>1. Immediate placement in supported employment: support provided through job coaches or a family/peer support group. N=22.* 2. Control: employment training in sheltered workshop setting with weekly individual, family and peer group therapy. N=12.</p>	<p>In competitive employment. Time in competitive employment.</p>	<p>* Originally 2 groups: a. job placement plus job coaching; and b. job placement with family and peer support. No differences between these 2 groups and are combined into a single experimental group for this review.</p>	<p>C</p>

Study characteristics tables: Vocational Rehabilitation

<p>Griffiths-London</p>	<p>Allocation: 'randomised' - no further details. Follow up: 18 months (mean). Loss to follow up: 0%. Objectivity of rating of outcome: unclear if raters independent.</p>	<p>Inclusion criteria: i. psychotic illness; ii. in contact with psychiatric services during 12 month period beginning 1968; iii. age range 18-55 years. Diagnosis: all had a psychotic illness, specific diagnoses U/K. N=28. Age: U/K. Sex: U/K. History: U/K. Setting: urban, London, UK.</p>	<p>1. Rehabilitation program: i. co-ordinated program involving day hospital and industrial workshops; ii. participants treated by team (psychiatrists, nurses, OTs, psychologists); iii. comprehensive assessment used to plan individual treatment and rehabilitation programs. N=14. 2. Control: i. referred back to doctors; ii. mainly in day centres, at home or in hospital. N=14.</p>	<p>In competitive employment. Self esteem: Wing scale. Unable to use - Cognitive functioning: WAIS. Attitude: Attitude Rating Scale (unpublished).</p>		<p>B</p>
<p>Kline-Philadelphia</p>	<p>Allocation: "randomly assigned" - no further details. Follow up: 6 months. Lost to follow up: 0%. Objectivity of rating of outcome: unclear if raters were independent.</p>	<p>Inclusion criteria: i. midway through a 1 year rehabilitation program; ii. psychiatrically disabled (not defined). Diagnosis: schizophrenia, schizophrenia-like disorders (40%). N=20. Age: mean ~28 years. Sex: "predominantly male". Race: not reported. History: ever married U/K, ever employed 100%, time since last employment U/K, previous admissions U/K. Setting: psychosocial rehabilitation agency, Philadelphia, USA.</p>	<p>1. Employment group: i. met in group to discuss work values (1.5 hours/ week for 12 weeks); ii. VR counsellors were group facilitators; iii. aimed to reduce placement anxiety. N=10. 2. Control: usual VR services. N=10. Both groups received usual services from the VR program including entering a job search workshop.</p>	<p>Obtaining competitive employment. Not participating in program.</p>		<p>B</p>
<p>Kuldau-California</p>	<p>Allocation: by sealed envelope method. Follow up: 18 months. Lost to follow-up: 5%. Objectivity of rating of outcome: unclear if raters were independent.</p>	<p>Inclusion criteria: i. new admission to VA hospital; ii. residing locally. Diagnosis: schizophrenia, schizophrenia-like disorders (>27%). N=94. Age: mean ~41 years. Sex: all men. Race: not reported. History: ever married 74%, ever employed U/K but 12% unemployed for 5 years, time since last employment U/K, previous admissions, mean ~3. Setting: California, USA.</p>	<p>1. Treatment program: combination of i. inpatient care (in therapeutic community milieu); ii. transitional day hospital care; iii. community housing; iv. supported/sheltered work. An employment co-ordinator (ex-patient) i. scanned community for job possibilities; ii. worked with participants to help find employment; iii. placed people in jobs. participants i. worked through the 'progress and planning group' until a "work-readiness" committee declared them fit for work; ii. could independently seek work own or through this service. Staff liaison with employers about on-the-job problems. N=44. 2. Control: i. 'rapid' discharge with emphasis on discharge planning; ii. no housing or community employment service but emphasised work activities such as unpaid industrial therapy assignments in hospital. N=50.</p>	<p>Monthly earnings. Unable to use - Ever employed during study (not a primary or secondary outcome variable). Time in competitive employment (data unclear). Living in community at end of study (not a primary or secondary outcome variable).</p>		<p>A</p>

Study characteristics tables: Vocational Rehabilitation

<p>Lehman-Baltimore</p>	<p>Allocation: by sealed envelope method. Follow-up: monthly for 24 months. Lost to follow-up: 31% at 24 months. Objectivity of rating of outcome: unclear.</p>	<p>Inclusion criteria: i. severe mental illness; ii. unemployed for at least three months prior to joining study. Diagnosis: DSM-IV Axis I Psychotic Disorders (75%) or Mood Disorders (25%). N=219. Age: mean 41.5 (SD 8.5). Sex: 57% male. Race: 75% non-white. History: ever married 37%, employed in previous 5 years 49%, mean age at 1st admission 22.8 (SD 8.8), mean no. lifetime admissions 11.4 (SD 10.1). Setting: urban, Baltimore, MD, USA.</p>	<p>1. Individual Placement and Support (IPS): rapid job search with follow-on support after securing work. N=113. 2. Pre-vocational Training: Vocational services included in-house evaluation and training for individuals who staff felt were not yet fully prepared for competitive employment. Training focused on improving specific work-related skills such as appropriate social interaction and acceptance of supervision. In-house sheltered work and factory enclave projects were also offered. People deemed ready for competitive employment were either provided in-house assistance in securing employment or referred to city-based rehabilitation or vocational service programmes.</p>	<p>Vocational outcomes: In competitive employment. In any employment. Time spent working. Wages earned. Tenure (average weeks per job). Days to 1st job. Longest job among multiple job holders. Numbers not participating in program. Unable to use - Non-vocational outcomes (no data): Quality of life. Self-esteem. Work motivation. Medication attitudes. General health. Social networks.</p>		
<p>McFarlane-New York</p>	<p>Allocation: 'randomly assigned' - no further details. Follow up: 3 monthly for 18 months, partial follow up at 24 + 30 months. Lost to follow-up: 16% at 18 months. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. age 18-55; ii. family available; iii. interested in obtaining a job; iv. in treatment at site clinics; v. schizophrenia, schizoaffective disorder, bipolar disorder or major depression. Diagnosis: schizophrenia, schizophrenia-like disorders (65%). N=69. Age: mean ~33 years. Sex: 30% women. Race: 7% non-white. History: ever married 26%, ever employed U/K, time since last employment, mean ~15 months, previous admissions, mean ~5. Setting: 2 CMHCs, 1 urban, 1 rural, New York State, USA.</p>	<p>1. Family-aided Assertive Community Treatment: i. ACT; ii. family intervention; iii. vocational specialists: specialists' tasks a. developing contacts with employers; b. case-specific job development; c. job assessment; d. assessment of participants' cognitive, physical and social capacities; e. setting career goals; f. interview and resume practice and assistance; g. on or near job support; h. intervening with employers; i. close co-ordination with clinicians. N=37. 2. Control: conventional vocational rehabilitation with referral to state VR service often leading to placement in sheltered workshop. N=32.</p>	<p>Obtaining competitive employment. Obtaining any form of employment. Not participating in program Monthly earnings. Unable to use - Obtaining competitive employment at 30 months (follow up <50%) Admissions to hospital per patient (not a secondary outcome). Mental state (not reported by group).</p>		<p>B</p>

Study characteristics tables: Vocational Rehabilitation

<p>Mueser-Hartford</p>	<p>Allocation: 'randomly assigned' - no further details. Follow-up: 6, 12, 18, 24 months. Lost to follow-up: 19% at 24 months. Objectivity of rating of outcome: interview-based assessments carried out by one of three research staff - 15% of assessments also rated by a second person. Unclear just how independent the two ratings were.</p>	<p>Inclusion criteria: i. severe mental illness; ii. not competitively employed; iii. desire for competitive work; iv. attendance at two research introduction meetings; v. willingness and ability to provide informed consent. Diagnosis: schizophrenia, schizoaffective (75%). N=204. Age: mean ~41 years. Sex: ~62% male. Race: ~79% non-white. History: ever married ~28%, employed in previous 5 years ~45%, mean duration of lifetime hospitalization ~19 months. Setting: urban, Hartford, CT, USA.</p>	<p>1. Individual Placement and Support (IPS): i. rapid job search; ii. follow-on support after securing work (counselling, transportation, intervening with employer); iii. three employment specialists. N=68. NB: IPS represents supported employment approach. 2. Psychiatric Rehabilitation Model (PSR): i. preparatory training activities (cleical and janitorial skills); ii. transitional employment; iii. help obatining competitive work from 3 employment specialists. N=67. NB: PSR modelled on clubhouse model of pre-vocational training. 3. Standard Services: clients randomised to standard group met with vocational services coordinator at mental health centre and were then assigned to standard programme of their choice, either i) supported employment located off-site from mental health centre; or ii) vocational programme in which clients worked in supervised janitorial enclaves within the community. N=69.</p>	<p>Vocational outcomes: In competitive employment. In any employment. Time spent working. Wages earned. Tenure (average weeks per job). Weeks at longest job. Worked more than 20 hrs per week. Non-vocational outcomes: Psychiatric symptoms. Overall functioning. Social functioning and social networks. Quality of life. Self-esteem.</p>		<p>D</p>
<p>Okpaku-Nashville</p>	<p>Allocation: 'randomly assigned' - no further details. Follow up: 7 to 28 months.* Lost to follow-up: 0% - difficult to verify. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. serious mental illness as judged by eligibility for disability benefits; ii. client of CMHC. Diagnosis: schizophrenia, schizophrenia-like disorders (67%). N=152. Age: mean ~37 years. Sex: 41% women. Race: 40% non-white. History: ever married 52%, ever employed U/K, time since last employment U/K, previous admissions ~3. Setting: urban, Tennessee, USA.</p>	<p>1. Employment oriented case management:** i. multi-disciplinary team of rehabilitation specialists (case load/specialist ~10); ii. employment needs assessment; iii. regular review; iv. "aggressively pursued social and rehabilitative services". N=73. 2. Control: standard case management services from CMHC (case load 40-90). N=79.</p>	<p>Finding any employment Not participating in program. Unable to use - Cost data (insufficient data).</p>	<p>* Variable follow up period - all received 4 month intervention and one 3 month follow up interview, some followed up as long as 24 months. ** Not an assertive community treatment model - not explicit what the intervention was, but not supported employment.</p>	<p>B</p>

Study characteristics tables: Vocational Rehabilitation

<p>Walker-Massachusetts</p>	<p>Allocation: by table of random numbers. Follow up: 6 months. Lost to follow-up: 0%. Objectivity of rating of outcome: raters not independent.</p>	<p>Inclusion criteria: i. hospital in-patient + 2 successful weeks in hospital work program; ii. recommended as capable of work by rehabilitation therapist; iii. willing to work; iv. cleared as suitable by psychiatrist. Diagnosis: schizophrenia, schizophrenia-like disorders (50%). N=28. Age: U/K. Sex: all men. Race: U/K. History: ever married U/K, ever employed U/K, time since last employment U/K, previous admissions U/K. Setting: urban, Massachusetts, USA.</p>	<p>1. Community-based Hospital Industrial Rehabilitation Placement (CHIRP): i. placements in a regular industrial setting off grounds (~a form of paid sheltered workshop); ii. supervision by member of rehabilitation staff from hospital; iii. transport; iv. could continue to attend after leaving hospital; v. standard hospital and community care. N=14. 2. Control: standard hospital and community care, could not attend CHIRP. N=14.</p>	<p>Time in competitive employment (excluding CHIRP) Not participating in program. Unable to use - Obtaining competitive employment (data unclear). Earnings: median monthly (no mean, SD).</p>		<p>A</p>
<p>Wolkon-Cleveland</p>	<p>Allocation: 'random assignment' - no further details except randomisation took place before consent was obtained (207 of 333 participants assigned to control group refused to participate). Follow up: 12, 18, 24, 30 months. Lost to follow-up: 8%. Objectivity of rating of outcome: raters independent.</p>	<p>Inclusion criteria: i. age 20-60; ii. >1 month psychiatric hospitalisation + about to be discharged; iii. no primary diagnosis of substance abuse, mental retardation or organic brain disease.* Diagnosis: schizophrenia/schizophrenia-like disorders (78%). N=540. Age: mean ~36 years. Sex: 65% women. Race: 43% non-white. History: Ever married U/K, ever employed U/K, time since last employment U/K, previous admissions >2. Setting: urban, non-residential, transitional, social rehabilitation centre for adults recently released from psychiatric hospital, Ohio, USA.</p>	<p>1. Rehabilitative treatment: i. social group work; ii. individual counselling; iii. transitional work projects; iv. informed that participation was limited to 1 year (not clear if strictly enforced). N=333. 2. Control: standard aftercare services (not specified). N=207.</p>	<p>Rehospitalised. Unable to use - In competitive employment (no data reported). Psychiatric symptoms (unpublished scale).</p>	<p>* A random sample of all participants about to be discharged from 3 state psychiatric hospitals over a 2.5 year period.</p>	<p>B</p>

Allocation concealment: A = adequate, B = unclear, C = inadequate, D = allocation concealment was not used as a criterion to assess validity.

BPRS - Brief Psychiatric Rating Scale. PANSS - Positive And Negative Symptom Scale.
ACT - Assertive Community Treatment. VR - Vocational Rehabilitation. CMHC - Community Mental Health Centre
SCID. U/K - unknown. P/t - part time. F/t - full time.

Characteristics of excluded studies

Study	Reason for exclusion
Adams-Shollenberger	Allocation: not randomised, a survey comparing absenteeism rates.
Ax-Salem	Allocation: randomised. Participants: diagnosis unclear, at least one third had alcohol problems only, hence excluded. Intervention: PVT (job club) versus no intervention.
Azrin-Illinois	Allocation: randomised (coin flip). Participants: diagnosis unclear, not all severely mentally ill, many had physical handicaps alone, hence excluded. Intervention: PVT (job club) versus advice on finding work.
Bailey-New Hampshire	Allocation: not randomised, before and after study.
Becker-Boston	Allocation: not randomised, retrospective case series.
Bell-Connecticut2	Allocation: not randomised (quasi-experimental study comparing a hospital-based VR program with two other inpatient treatment units).
Block-Canada	Allocation: not randomised, before and after study.
Bond-Chicago2	Allocation: randomised. Participants: people with severe mental disorder Interventions: Assertive Community Treatment versus standard care. This trial of Assertive Community Treatment versus standard care happened to report vocational outcomes, but did not involve and any specific vocational rehabilitation intervention - hence excluded.
Briggs-Minnesota	Allocation: randomised. Participants: people with severe mental disorder Interventions: PVT (vocational counselling) versus standard community care. Outcomes: Excluded as not possible to do an intention-to-treat analysis. The number randomised appears to be fewer than the numbers followed up. Two different conflicting figures are given for the number of people recruited - excluded pending clarification. (Even if included, the study does not report any data that could be used in the review).
Campbell-Massachus	Allocation: not randomised - quasi-experimental design. Participants: people with severe mental disorder Interventions: PVT (sheltered workshop) versus PVT (an "industry-integrated model").
Chandler-Stanislaus	(This trial is described in the same paper as the included trial Chandler-Long Beach.) Allocation: randomised. Participants: people with severe mental disorder Interventions: Assertive Community Treatment versus standard community care. This trial of Assertive Community Treatment

Study characteristics tables: Vocational Rehabilitation

	versus standard care happened to report vocational outcomes, but did not involve and any specific vocational rehabilitation intervention - hence excluded.
Drake-New Hampshire2	Allocation: not randomised, quasi-experimental design. Participants: people with severe mental disorder attending a two rehabilitative day centres. Intervention: SE (one day centre closed and converted to SE program) versus rehabilitative day centre.
Fabian-Maryland	Allocation: not randomised, a survey comparing employed and unemployed participants.
Faulkner-Virginia	Allocation: not randomised, before and after design.
Huxley-Colorado	Allocation: not randomised, a survey comparing participants attending a Clubhouse program with controls from a neighbouring area.
Jennings-Virginia	Allocation: randomised. Participants: diagnosis unclear, hence excluded. Interventions: PVT enhanced by a psychological group treatment for enhancing participation versus unenhanced PVT.
Kaufman-Pittsburgh	Allocation: randomised. Participants: people with severe mental disorders referred to a self-help employment centre. Interventions: PVT approach (self-help employment centre) versus standard care - control condition unclear - all controls were referred to other VR services, but it is unclear how many (if any) actually engaged. Outcomes: no usable data - numbers randomised to treatment and control groups were not specified, hence it was not possible to report the number in employment on an intention to treat basis.
Keith-Michigan	Allocation: randomised. Participants: not all participants were mentally ill, hence excluded. Interventions: psychological approach for enhancing the effectiveness of vocational rehabilitation versus standard vocational rehabilitation counselling provided by the same agency.
Kregel-Virginia	Allocation: not randomised, a large survey of participants in Supported Employment services.
Luo-Nanjing	Allocation: not randomised, retrospective cohort study.
McAlpine-San Francis	Allocation: not randomised, quasi-experimental study comparing vocational outcome in participants receiving assertive community treatment with those receiving standard community care.
Noble-New York	Allocation: not randomised, compared clients in a Clubhouse program to those in newly developed Supported Employment Program.
Olah-Ohio	Allocation: not randomised, matched group design, examining effectiveness of a group intervention to increase self efficacy in people with mental disorder versus no intervention.
Otero-Spain	Allocation: not randomised, before and after study of a rehabilitation program for people with chronic schizophrenia.

Study characteristics tables: Vocational Rehabilitation

Proudfoot-London	Allocation: randomised. Participants: not mentally ill, hence excluded. Interventions: occupational training program (incorporating cognitive behavioural therapy) versus a program that emphasised social support.
Purvis-Denver	Allocation: randomised. Participants: discharged psychiatric patients. Interventions: group "community follow-up" versus individual "community follow-up" versus a control group - experimental interventions included "vocational counseling" but did not appear to involve any active vocational rehabilitation in the sense of either prevocational training or supported employment.
Ryan-Connecticut	Allocation: randomised. Participants: people recently discharged from hospital. Interventions: PVT versus standard community care. Outcomes: not an intention to treat analysis - participants randomly assigned whilst in-patients, but any who were judged not ready for discharge within two months were dropped from study. Similarly, any who failed to complete 3 months in the PVT after allocation were dropped. The trial seems to report data only on people who met these conditions after randomisation.
Sauter-New York	Allocation: randomised. Participants: people with chronic schizophrenia attending a sheltered work shop. Interventions: work skills training for sheltered workshop participants versus sheltered workshop alone. Outcomes: increasing productivity rates, not concerned with employment outcomes - hence excluded.
Stein-Madison	Allocation: randomised. Participants: people with severe mental illness requiring admission to hospital. Interventions: Assertive Community Treatment versus hospital admission. Vocational outcomes were reported but excluded as the intervention did not involve any specific vocational rehabilitation component.
Tomaras-Athens	Allocation: not randomised, before and after study.
Velasquez-Minnesota	Allocation: randomised. Participants: young adults with psychotic, neurotic or personality disorder. Interventions: residential milieu therapy versus standard community care. Vocational outcomes were reported, but the intervention did not involve any specific vocational component.

PVT - Pre-vocational Training
VR - Vocational Rehabilitation

Day Hospital vs Outpatient Care (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
<p>Marshall M, Crowther R, Almaraz-Serrano AM, Tyrer P.</p> <p>Day hospital versus out-patient care for psychiatric disorders (Cochrane Review).</p> <p>In: <i>The Cochrane Library</i>, Issue 1, 2002. Oxford: Update Software.</p> <p>NB: Also available in <i>Health Technology Assessment</i> 2001;5(21).</p>	<ol style="list-style-type: none"> 1. Systematic review of RCTs. 2. Intramural sources of support to the review: Guild Community Healthcare Trust UK. Extramural sources of support to the review: NHS Health Technology Assessment 3. 1966-2000. 4. Relative risks and 95% confidence intervals (CI) were calculated for dichotomous data. Weighted or standardised means were calculated for continuous data. 5. 8 (4 after removing 4 studies) 6. 821 (351). 	<ol style="list-style-type: none"> 1. Day treatment programmes were defined as: "psychiatric day hospitals (see above) offering intensive input to patients with non-psychotic disorders". 2. Day care centres were defined as "psychiatric day hospitals offering continuing care to patients with severe mental disorders". 3. Transitional day hospitals were defined as "psychiatric day hospitals offering time-limited care to patients discharged from in-patient care". 4. Standard out-patient care. 	<p>The outcomes in common to all three comparisons were:</p> <ol style="list-style-type: none"> 1. Engagement with treatment: <ol style="list-style-type: none"> 1.1 number lost to follow up. 2. Readmission to hospital: <ol style="list-style-type: none"> 2.1 number admitted to inpatient care; 2.2 mean days in inpatient care. 3. Clinical outcomes: <ol style="list-style-type: none"> 3.1 mental state; 3.2 social functioning; 3.3 quality of life; 3.4 death; 3.5 burden on relatives; 3.6 satisfaction with care. 4. Cost of care: <ol style="list-style-type: none"> 4.1 mean monthly cost of psychiatric care (comprising cost of hospital care plus cost of all ambulatory psychiatric care); 4.2 mean monthly cost of all care (comprising cost of psychiatric care plus costs of other medical/social care, but excluding wages, costs to relatives, and transfer payments). <p>For day treatment programmes two additional outcomes were included: (1) number refusing to enter trial because unwilling to attend day hospital; and (2) self harm/self mutilation.</p>
<ol style="list-style-type: none"> 1. New RCTs added to review. 2. RCTs removed from review. 	<ol style="list-style-type: none"> 1. None. 2. Four studies were excluded from the original review as they involved >80% participants with diagnoses other than schizophrenia. These studies were: Bateman-London-1999; Dick-Dundee-1991; Piper-Alberta-1993; Tyrer-S'hampton-1979 		

Study characteristics tables: Day Hospital vs Outpatient Care

Additional notes for quality assessment	
Author's objective	The review had three objectives. First, to assess the effectiveness of day treatment programmes versus out-patient care for people with treatment-refractory disorders. Second, to assess the effectiveness of day care centres versus out-patient care for people with severe long term disorders. Third, to assess the effectiveness of transitional day hospital care for people who had just been discharged from hospital.
What methods were used to identify primary studies?	Authors searched the Cochrane Controlled Trials Register (Cochrane Library, issue 4, 2000), MEDLINE (January 1966 to December 2000), EMBASE (1980 to December 2000), CINAHL (1982 to December 2000), Psyc LIT (1966 to December 2000), and the reference lists of articles. Researchers were approached to identify unpublished studies.
How were the inclusion criteria applied and what were they?	Abstracts of the 'hits' identified in the search were inspected independently by two reviewers (MM and AA). Potentially relevant abstracts were identified (i.e. those in which a group of day hospital patients meeting the participant inclusion criteria were compared against a control group) and full papers ordered. A reliability study found complete agreement on which trials met inclusion criteria Criteria: Randomised controlled trials comparing day hospital care (including day treatment programme, day care centre, and transitional day hospital) against out-patient care. For studies of day treatment programmes, participants were people with non-psychotic disorders (all diagnoses) who would have been treated in out-patient care had day hospital care not been available. It was not necessary for participants to be "refractory to out-patient treatment", as there is no generally agreed definition of this term. However, the review recorded the entry criteria for each day treatment programme and took these into consideration in the analysis of results. For studies of day care centres, participants were people with severe long term disorders (predominantly schizophrenia and other psychoses) who would have been followed up in out-patient care had day hospital care not been available. For studies of transitional day care, participants were in-patients on acute psychiatric wards, who would have been discharged to out-patient care had 'transitional day care' not been available. Studies were ineligible if a majority of participants were under 18 or over 65, or who had a primary diagnosis of substance abuse or organic brain disorder.
Criteria on which the validity (quality) of studies was assessed.	Each reviewer allocated the included trials to one of three categories of allocation concealment, as described in the Cochrane Collaboration Handbook (Clarke 2000). Disagreements were resolved by discussion, or failing this, by seeking further information from the trialists. Only trials in Category A or B were included in the review (i.e. randomised trials where method of allocation concealment was either adequate or unclear). Trials were also rated on degree of blindness. Blinding of participants and treating clinicians is not possible in a trial of day hospital treatment, but trials were rated on independence and blinding of evaluators (non-independent evaluators being defined as being also involved in the treatment of trial participants).
How were the data extracted / synthesized from the primary studies?	Extraction: Data were extracted independently by three reviewers (MM, AA and RC) and cross-checked. Where further clarification was needed the authors of trials were contacted to provide missing data. Synthesis: Incomplete data. Data were excluded if they could not be analysed on an intention to treat basis, for example if there was exclusion of subjects post-randomisation for reasons other than loss to follow up. Data were also excluded from studies where more than 50% of subjects were lost to follow up (except for the outcome of 'lost to follow up'). Binary data. For binary outcomes a standard estimation of the risk ratio (RR) and its 95% confidence interval (CI) was calculated. If the relative risk was significant, the number needed to treat statistic (NNT) was also calculated. If heterogeneity was found (see section 5) a random effects model was used. Continuous data. Summary statistic - for continuous outcomes a weighted mean difference (WMD) between groups was estimated. Continuous data presented without use of summary statistics (i.e. mean, SD/SE or non-parametric equivalent) were not considered good evidence, though the existence of such data was noted in the text. Scales - unpublished scales are known to be subject to bias in trials of treatments for schizophrenia (Marshall 2000). Therefore continuous data from rating scales were included only if the measuring instrument had been described in a peer-reviewed journal and the instrument was either a self report or completed by an independent evaluator or relative (not the therapist). Individual participant data - individual participant data were not sought for this review, however one author (PT) provided individual participant data. These data were verified against the original trial reports, and permitted a rating of social functioning to be upgraded from a mention in the text to an entry on RevMan (as summary statistics)

	were then available). Exclusion of these data do not alter the main conclusions of the review.
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Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
Bateman-London-1999 (Excluded from current review)	Setting: psychotherapy unit in inner-city London. Allocation: "random assignment" - no further details. Follow up: 3, 6, 9, 12, 15, 18 months. Evaluation: largely by self-report, unclear if hospital use data collected by evaluator independent of treating clinician and blind to group allocation and if statistical analysis performed blind. Analysis: not intention to treat - see notes.	*Diagnosis: borderline PD, depression 66%. Inclusion criteria: meeting standardised criteria (SCID) for borderline PD; no major mental disorder; willing to be randomised and participate in regular self-assessment. N=44. Age: mean ~32 years. Sex: 25F, 19 M. History: referred from local psychiatric services.	1. Day treatment program: 5 days/week, once-weekly individual psychotherapy; thrice weekly group therapy; once weekly psychodrama; weekly community meeting; psychiatric appointment monthly. N=22. 2. Standard treatment: review twice monthly from senior psychiatrist; 2 weekly community follow up from psychiatric nurse. N=22.	Acceptability (not participating in program). Unable to use - Self-harm frequency (not ITT). Mental state: BDI, SCL 90, State Trait Anxiety Inventory (not ITT). Hospital admission: (not ITT). Duration of admission (not ITT). Social adjustment: SAS (not ITT). Number of problems: Inventory of Interpersonal Problems (not ITT).	Drop out rate: 36%. Type of intervention: day treatment program. Not intention to treat analysis because 3 control participants crossed over to partially hospitalised group and were excluded from analysis; 3 participants dropped out of partially hospitalised group - although all three provided outcome data they were excluded from final analysis. *Data on characteristics of participants provided for completers only.	B
Dick-Dundee-1991 (Excluded from current review)	Setting: acute day hospital in Dundee, Scotland. Allocation: randomised, sealed envelopes used. Follow-up: 0, 6 months. Evaluation: by person independent of treating clinician and blind to group allocation (blindness not evaluated). Unclear if statistical analysis performed blind. Analysis: intention to treat.	Diagnosis: dep 92%, anx 8%. Inclusion criteria: continuous anx/dep of moderate severity for 6/12 months; not "too well" for DH; not requiring IP; no need for specific behav. programme; willing to accept DH or OP treatment. N=94 (N assessed = 124; N meeting inclusion criteria = 96). Age: not clear but 50% under 45 yrs. Sex: 75% F. History: Subjects referred from	1. DH specialising in treatment of people with severe neurotic disorders. The DH was problem-oriented with time-structuring and behavioural programmes. Staff ratio 1:12. N=46. 2. OP care, seen monthly for medication and anxiety management. N=50.	Acceptability (number lost to follow-up). Hospital admissions. Mental state (Standardised Psychiatric Interview [Goldberg 1970]). Satisfaction with care (yes/no). Unable to use - Time structuring (unpublished scale). Socialisation (unpublished scale). Coping (unpublished scale).	Drop out rate: 4% at 6 months. Type of intervention: day treatment program. Characteristics of subjects reported only for those who completed follow up (thus excludes 2 from each group).	A

Study characteristics tables: Day Hospital vs Outpatient Care

		out-patient clinics. Number of previous admissions not known.				
Glick-New York-1986	Setting: day hospital attached to New York Hospital. Allocation: "randomly assigned" - no further details. Follow-up: 0, 6, 12 months. Evaluation: unclear if evaluator was independent of treating clinician or blind to group allocation and if statistical analysis performed blind. Analysis: intention to treat.	Diagnosis: 47% scz , 53% major affective disorder. Inclusion criteria: (i) schizophrenia/ major affective disorder; (ii) discharged from IP unit; (iii) 18-60; (iv) no more than 2 previous admissions; (v) inadequate family support; (vi) residual psychotic symptoms; (vii) need for ongoing treatment. N=79 (N assessed = 109; N meeting inclusion criteria = 109). Age: 35. Sex: 63% F. History: referred from in-patient wards of New York Hospital. Number of previous admissions not reported.	1. Transitional day care (about 15 hrs/wk, limited to 6-12 weeks) and involving: (I) milieu, family, supportive & group therapy; (ii) medication; (iii) care management; (iv) recreation & dance therapy; (v) discharge planning. N=42. 2. OP follow-up involving: (i) 6-12 wks in out-patient group therapy (90 mins/wk); (ii) medication management; (iii) 24 hr crisis intervention. N=37.	Acceptability (number lost to follow up). Global functioning (GAS [Endicott 1976]). Psychiatric symptoms (Psychiatric Evaluation Form [Endicott 1972]). Social functioning (SAS [Weissman 1976]). Hospital admission. Unable to use - Social functioning (unpublished scale). Medication compliance (unpublished scale).	Drop out rate: 33%. Type of intervention: transitional day care.	B
Linn-USA-1979	Setting: 10 Veterans' Administration hospitals with associated day care centres. Allocation: randomised, sealed envelopes used. Follow-up: 6, 12, 18, 24 months. Evaluation: unclear if evaluator was independent of DTC, or blind to allocation.	Diagnosis: 100% scz. Inclusion criteria: adequate maintenance treatment; able to attend DH. N =162 (N assessed = 175; N meeting inclusion criteria = 162) Age: 37 Sex: Male. History: number of previous admissions 4.4. Recently discharged from IP and referred for DH.	1. VA day care centre that aimed to enhance social functioning in chronic service users by offering a place to socialise and engage in productive activities. Centre employed social workers and physicians and offered: recreational activities, group therapy, counselling, occupational therapy, and medication follow up. N=80. 2. OP drug management from same physicians offering medication follow up in DTC - no other aftercare was offered to this group. N=82.	Admission to hospital. Mean days in hospital (no SD, reported in text). Social functioning (SDRS [Linn 1969], no SD, reported in text). Mental state (BPRS [Overall 1962], no SD reported in text). Cost of care. Unable to use - Attitudes (unpublished scale).	Drop out rate: 15% at 24 months. Type of intervention: day care centre. This was a Veterans' Administration study hence no females in trial.	A
Meltzoff-NY-1966	Setting: day care centre in New York. Allocation: by random numbers table. Follow-up: 0, 3, 6, 9, 12, 15, 18 months. Evaluation: independent of treating clinicians, initially	Diagnosis: 91% scz, 1.5 % affective, 6% neurotic. Inclusion criteria: not suicidal or violent. N=80 (N assessed: not reported; N meeting inclusion criteria: not reported). Age: about 41 yrs. Sex: Male.	1. Day care centre with individual & group psychotherapy & medication. Patient/ staff ratio not reported. N=40. 2. Standard OP care. N=40.	Acceptability (number lost to follow up). Unable to use - Admission to hospital (not ITT). Social functioning (Outpatient Adjustment Rating Scales - not ITT, unpublished). Days in hospital (no SD, not ITT).	Drop out rate: 13.7%. Type of intervention: day care centre. Subjects who failed to turn up after the initial assessment and randomisation were not followed up.	A

Study characteristics tables: Day Hospital vs Outpatient Care

	blind to group allocation but it is stated that this would have become obvious during the interview. Unclear if data analysis was carried out blind. Analysis: not intention to treat -participants excluded from further follow up if they dropped out early.	History: veterans, with a service-connected neuropsychiatric disability , all having spent time in hospital. Mean duration of admissions 4.23 yrs.				
Piper-Alberta-1993 (Excluded from current review)	Setting: day treatment program for out-patients with affective and personality disorders. Allocation: participants matched in pairs, then one member of each pair randomly assigned to treatment or control group - no further details. Follow-up: after treatment (4.5 months from baseline), 12.5 months from baseline. Evaluation: independent of treating clinician, not blind to group allocation. Unclear if statistical analysis performed blind. Analysis: not intention to treat (see notes).	Diagnosis: diagnosis dep no data, anx no data. Inclusion criteria: (i) long term psychiatric problems; (ii) willing and able to engage in program; (iii) age >13 yrs; (iv) not psychotic, or suicidal, or abusing substances or learning disabled, or in treatment elsewhere. N =226 (N assessed not clear; N meeting inclusion criteria 260) Age: no data Sex: no data. History: no data on number of previous admissions.	1. Day treatment program (7 hours per day/5 days per week) involving: (i) psychotherapy in large and small groups; (ii) group activities including: psychotherapy, role play, peer feedback, life skills training and daily living tasks. N=137. 2. Waiting list control condition consisting of a weekly supportive out-patient group, which "few attended". N=89.	Acceptability (number lost to follow up). Unable to use - Symptoms (SCL 90 [Derogatis 1977], Mood Survey [Underwood 1980]; not ITT). Social functioning (SAS [Weissman 1971], not ITT). Self-esteem (Rosenberg scale [Rosenberg 1979], not ITT). Attachment (West scale [West 1987], not ITT). Dependency (Hirschfield scale [Hirschfield 1977], not ITT). Defensiveness (Bond scale [Bond 1983], not ITT).	Dropout rate: 38%. Type of intervention: day treatment program. This was not an intention to treat analysis - analysis was based only on those pairs who completed treatment - moreover, if a member of a pair dropped out, they were replaced by a new matching subject. It is not clear why the numbers randomised to treatment and control groups were not equal, given that randomisation was meant to occur in pairs.	B
Tyrer-S'hampton-1979 (Excluded from current review)	Setting: two day hospitals in Southampton, UK. Allocation: randomised, sealed envelopes used (information from trialist). Follow-up: 4, 8, 24 months. Evaluation: independent and blind to group allocation (not tested). Data analysed blind to group allocation (information from trialist). Analysis: intention to treat.	Diagnosis: neurotic disorder severe enough for DH treatment. N=106 (N assessed = 264; N meeting inclusion criteria = 106 Age: 16 - 60 yrs. Sex: no data.	1. Two different types of DH; one specialising in neurotic disorders (well staffed with psychotherapeutic orientation) and the other a standard DH (psychiatrists, nurses, occupational & art therapists). N=48. 2. Routine OP care. N=58.	Acceptability (number lost to follow up). Admission to hospital (8 & 24 ms). Deaths. Mental state (PSE [Wing 1972]; symptom severity using analogue scale [Remington 1979b]). Social functioning (SFS [Remington 1979a], IPD). Satisfaction with care (yes/no). Unable to use - Mental state (Leeds Scale [Snaith 1976], no overall score).	Dropout rate (24ms): 26%. Type of intervention: day treatment program. Data from day hospital groups combined for this analysis.	A

Study characteristics tables: Day Hospital vs Outpatient Care

<p>Weldon-NY-1979</p>	<p>Setting: day hospital in New York. Allocation: "randomly assigned" - no further details. Follow up: 3 months. Evaluation: unclear if independent or blind to group allocation. Analysis: intention to treat.</p>	<p>Diagnosis: scz. Inclusion criteria: recently discharged, not suicidal, violent or abusing drugs. N=30 (N assessed not known; N meeting inclusion criteria = 30). Age: about 37 Sex: female 70% History: N of previous admissions not known (63% had 2 or more).</p>	<p>1. Day care centre (5 days/week, group & goal-directed therapy, patient/staff ratio: 2.5). N=15. 2. Psychotherapy oriented OP care. N=15.</p>	<p>Acceptability (number lost to follow up). Death. Admission to hospital. Social functioning: CAS (Community Adaptation Schedule [Roen 1966]); Mental state (SCL-90 [Derogatis 1973]). Unable to use - Mental state (POMS (Profile of Mood States, McNair et al.1971).</p>	<p>Drop out rate: 0%. Type of intervention: day care centre.</p>	<p>B</p>
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Abbreviations:
Anx = anxiety.
Behav = behavioural.
BPRS = Brief Psychiatric Rating Scale.
Dep = depression.
DH = day hospital.
IP = Inpatient care.
IPD = individual patient data were used to calculate this outcome.
ITT = intention to treat analysis.
Meds = medication.
Mod = moderate.
OP = out-patient.
PD = personality disorder.
PSE = Present State Examination
SCID = Structured Clinical Interview for DSM IIIIR.
SCL = Symptom Check-List.
Scz = schizophrenia.
SD = standard deviation.
SDRS = Social Dysfunction Rating Scale.
VA = Veterans' Administration.

Characteristics of excluded Studies

Study	Reason for exclusion
<p>Austin-Los Angeles</p>	<p>Allocation: not randomised - a survey comparing randomly selected subjects from two different day hospitals.</p>
<p>Azim-Alberta</p>	<p>Allocation: not randomised - a quasi-experimental design comparing outcome for service users in a day treatment program for non-psychotic service users, with non-patient controls.</p>
<p>Barkley-Ontario</p>	<p>Allocation: not randomised - a retrospective study of admission rates at three day care centres.</p>
<p>Basker-Jerusalem</p>	<p>Allocation: not randomised - a before and after design examining outcome in a multi-purpose day hospital.</p>

Study characteristics tables: Day Hospital vs Outpatient Care

Beigel-New York	Allocation: not randomised - a survey, comparing service users who completed treatment in a multi-purpose day hospital with those who dropped out.
Boath-Stoke	Allocation: not randomised - a quasi-experimental design comparing service users in a day treatment program for post-natal depression with control participants treated in primary care.
Bowman-Dublin	Allocation: not randomised - a survey examining differences between participants admitted to acute day hospital and in-patient care.
Bradshaw-Minnesota	Allocation: randomised. Participants: people with schizophrenia who were long term attenders at a day care centre. Intervention: day care plus cognitive behavioural therapy versus day care alone. Excluded as no non-day care control group, essentially a trial of cognitive behavioural therapy in a day care centre.
Brook-Denver	Allocation: not randomised - a survey comparing participants treated in a crisis hostel with those treated in in-patient care.
Carey-US	Allocation: randomised. Participants: attenders at a day care centre who also abused substances. Intervention: problem-solving training plus day care versus day care alone. Excluded as no non-day care control group. This is a trial of problem-solving in a day care centre.
Case-New York	Allocation: not randomised. A retrospective study in which outcomes for day centre attenders with dual diagnoses (schizophrenia and substance abuse) were compared against outcomes for non-substance abusers.
Comstock-Texas	Allocation: not randomised - a retrospective multivariate analysis of attenders at a day treatment program.
Creed-Blackburn	Allocation: randomised by sealed envelope (however, the trialists judged that the randomisation procedure had been compromised), hence excluded. Participants: acute psychiatric service users about to be admitted to in-patient care. Intervention: acute day hospital versus in-patient care.
Creed-Manchester1	Allocation: not randomised - a quasi-experimental design comparing consecutive admissions to acute day hospital and in-patient care.
Creed-Manchester2	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus inpatient care. Excluded as not a trial of day hospital versus outpatient care.
Creed-Manchester3	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Dick-Dundee1	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Drake-New Hampshire	Allocation: not randomised - quasi-experimental design comparing outcome in long-term service users attending a day care centre with those attending a supported employment program (previously a day care centre).

Study characteristics tables: Day Hospital vs Outpatient Care

Ettlinger-New York	Allocation: not randomised - a retrospective case-control study comparing service users allocated to transitional day hospital care with those remaining in in-patient care.
Fink-Toronto	Allocation: not randomised - a quasi-experimental study of inpatient care versus acute day hospital care. Participants: people with acute psychiatric disorders requiring admission.
Glick-San Francisco	Allocation: randomised. Participants: people requiring hospital in-patient care. Intervention: short versus long hospital admission. Excluded as not a trial of day hospital treatment.
Grad-Chichester	Allocation: not randomised - a quasi-experimental design comparing outcome of community care in two towns.
Gudeman-Boston	Allocation: not randomised - a before and after design examining outcome for people with severe long-term mental disorder referred to a day care centre.
Guidry-New Orleans	Allocation: not randomised - a before and after design examining outcome for people with severe long-term mental disorder referred to a day care centre.
Guillette-Maryland	Allocation: not randomised - a cross-sectional study comparing costs of acute day hospital care with costs of in-patient care.
Guy-Baltimore	Allocation: randomised by sealed envelope. Participants: people with a variety of disorders (schizophrenia and neurotic disorders) referred for non-acute day hospital treatment from unspecified sources. Excluded as could not be classified as either day care centre, day treatment program, or transitional day hospital.
Herz-New York1	Allocation: randomised (random number table). Participants: people with acute psychiatric disorders admitted to in-patient care. Intervention: acute day hospital care versus admission. Excluded as not a trial of day hospital versus outpatient care.
Herz-New York2	Allocation: randomised (method not specified). Participants: people with acute psychiatric disorders about to be admitted to in-patient care. Interventions: routine in-patient care versus brief in-patient care plus day care. Excluded as not a comparison of day hospital versus out-patient care.
Hirsch-London	Allocation: random allocation (method not specified). Participants: people with acute psychiatric disorders about to be admitted to in-patient care. Intervention: brief in-patient care with some transitional day hospital care versus routine in-patient care. Excluded as not a comparison of day hospital versus out-patient care.
Hogg-Glasgow	Allocation: not randomised. A survey comparing long term in-patients with long term day patients.
Inch-Saskatchewan	Allocation: not randomised. A prospective study comparing BPRS scores between day hospital patients receiving "therapeutic" and "non-therapeutic" discharges.
Jarema-Warsaw	Allocation: not randomised. A survey comparing quality of life scores between day hospital patients, in-patients and out-patients.

Study characteristics tables: Day Hospital vs Outpatient Care

Kandel-US	Allocation: randomised. Participants: adult general psychiatry patients attending a day treatment program. Intervention: day treatment plus a small group intervention compared against day treatment, in order to assess effect on "future time perception". Excluded as no out-patient care control group.
Kecmanovic-Sarajevo	Allocation: not randomised - a cross-sectional case-control study comparing discharged in-patients with discharged day patients.
Klyczek-US	Allocation: not randomised. Quasi-experimental design comparing outcome in two day hospitals, one of which offered mainly psychotherapy, whilst the other offered mainly activity therapy.
Konieczynska-Warsaw	Allocation: not randomised. A follow up study comparing the outcome for people treated in a day hospital, in-patient ward and community mental health team.
Kris-US	Allocation: randomised. Participants: people requiring admission for acute relapse of schizophrenia. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Kuldau-California	Allocation: randomised Participants: in-patients about to be discharged. Intervention: rapid discharge from in-patient care versus community transitional system (which involves gradual discharge from hospital). Excluded because not a comparison of day hospital versus outpatient care.
Levenson-Houston	Allocation: randomised by table random numbers. Participants: people with acute relapse of schizophrenia. Intervention: treatment in an out-patient clinic versus hospital admission. Excluded as out-patient clinic does not meet criteria for day hospital.
Liang-Taipei	Allocation: not randomised. A survey comparing quality of life in people in various care settings, including day hospitals.
Lystad-Louisiana	Allocation: not randomised - quasi-experimental design comparing acute day hospital care to in-patient care.
Mathai-Bangalore	Allocation: not randomised - a survey of people in in-patient, out-patient and day hospital care.
Michaux-Maryland	Allocation: not randomised - a quasi-experimental design comparing acute day hospital care to in-patient care.
Milne-Wakefield	Allocation: not randomised - a quasi-experimental study comparing a day hospital offering behavioural treatment to one offering social milieu therapy.
Niskanen-Helsinki	Allocation: not randomised - a before and after design examining outcome for people treated in a day hospital.
O'Shea-Ireland	Allocation: not randomised. A retrospective cost-effectiveness analysis comparing day patients and in-patients.

Study characteristics tables: Day Hospital vs Outpatient Care

Odenheimer-USA	Allocation: not randomised - a survey of the relatives of day hospital patients.
Oka-Kurume (Japan)	Allocation: not randomised. Quasi-experimental design comparing outcome in 31 people with schizophrenia entering a day care centre with that of 30 out-patients with schizophrenia matched for age and sex.
Penk-Dallas	Allocation: not randomised. Quasi-experimental study (using matched controls) of day hospital versus in-patient care for people with acute psychiatric disorders.
Piersma-Michigan	Allocation: not randomised. Quasi-experimental study that compared the magnitude of improvement in a group of in-patients with that in a group of day hospital patients.
Platt-London	Allocation: randomised. Participants: people with acute psychiatric disorders Intervention: admission to day hospital versus in-patient care. The trial was abandoned when insufficient people (10) were randomised in the first 10 weeks.
Russell-Ottawa	Allocation: not randomised. Outcome for day patients was compared against a retrospectively obtained sample of in-patients.
Sandell-Stockholm	Allocation: not randomised. Cohort study in which outcome for people with personality disorder who remained in treatment in a day hospital was compared against outcome for those who dropped out of treatment.
Schene-Utrecht	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Sledge-Connecticut	Allocation: randomisation by sealed envelope. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital with crisis residence versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Tam-Hong Kong	Allocation: not randomised. A survey comparing day patients and in-patients on demographic and psychological variables.
Tantam-Manchester	Allocation: not randomised. A quasi-experimental study (using matched controls) comparing a rehabilitation team with a day care centre.
Vaglun-Oslo	Allocation: not randomised. A follow up study comparing outcome in day patients with different types of personality disorder.
Vaitl-Haar (Germany)	Allocation: not randomised. A retrospective study comparing outcome in patients treated at day hospitals with those treated at "night" hospitals.

Study characteristics tables: Day Hospital vs Outpatient Care

Washburn-Boston	Allocation: randomised, method not specified. Participants: Women receiving in-patient treatment. Intervention: continuing in-patient admission versus discharge to day patient care. Excluded as not a trial of day hospital versus outpatient care.
Welburn 2000	Allocation: not randomised. Quasi-experimental design in which outcome for patients participating in a psychotherapy-oriented day treatment program was compared against outcome for those awaiting admission to the program.
Wiersma-Groningen	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
Wilberg-Oslo	Allocation: not randomised. A quasi-experimental study of day treatment + psychotherapy versus day treatment alone, for people with borderline personality disorder.
Zwerling-New York	Allocation: randomised. Participants: people with acute psychiatric disorders requiring admission to hospital. Intervention: acute day hospital versus in-patient care. Excluded as not a trial of day hospital versus out-patient care.
van den Hout-NL	Allocation: randomised. Participants: depressed people on a day treatment program. Intervention: self-control therapy plus day care versus day care. Excluded as no out-patient control group. Effectively this was a trial of self-control therapy in addition to a day treatment program.

Crisis Resolution and Home Treatment Teams (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
<p>Joy CB, Adams CE, Rice K.</p> <p>Crisis intervention for people with severe mental illnesses (Cochrane Review).</p> <p>In: <i>The Cochrane Library</i>, Issue 1, 2002. Oxford: Update Software.</p>	<ol style="list-style-type: none"> 1. Systematic review of randomised controlled trials. 2. Intramural sources of support to the review: Gwent Community Health NHS Trust, Adult Services UK; Dept of Psychiatry, Oxford University UK; NHS Executive Anglia and Oxford R & D Directorate UK; Cochrane Schizophrenia Group General Fund UK. Extramural sources of support to the review: Welsh Office of Research and Development for Health and Social Care UK. 3. Database origin to 1998. 4. Reviewers evaluated data independently and analysed on an intention-to-treat basis. Reviewers assumed that people who left the study early or were lost to follow-up had no improvement. Where possible and appropriate odds ratios (OR) and their 95% confidence intervals (CI) were calculated. The number needed to treat (NNT) was estimated. For continuous data Weighted Mean Differences (WMD) were calculated. Data were inspected for heterogeneity. 5. 5 (6 after including one new trial). 6. 764 (694). 	<ol style="list-style-type: none"> 1. Crisis intervention: any type of crisis-orientated treatment of an acute psychiatric episode by staff with a specific remit to deal with such situations, in and beyond 'office hours'. 2. Standard care: the normal care given to those suffering from acute psychiatric episodes in the area concerned. 	<p>Five main outcomes were considered.</p> <ol style="list-style-type: none"> 1. Service utilisation: <ol style="list-style-type: none"> 1.1 admission to hospital; 1.2 number of days in hospital; and 1.3 number of staff/user contacts. 2. Satisfaction with treatment: <ol style="list-style-type: none"> 2.1 number of people remaining in contact with psychiatric services; 2.2 participant satisfaction; 2.3 staff satisfaction; and 2.4 carer satisfaction. 3. Clinical outcome: <ol style="list-style-type: none"> 3.1 death/suicide; 3.2 improvement, general or specific; 3.3 compliance with medication; 3.4 antipsychotic medication; and 3.5 relapses. 4. Social outcome: <ol style="list-style-type: none"> 4.1 social functioning including life skills; 4.2 employed (paid/voluntary/attendance at school/college); 4.3 able to live independently; and 4.4 number of carers - professional or significant others - needed to maintain stable state. 5. Cost of treatment: <ol style="list-style-type: none"> 5.1 total, mental health care or medical care costs; 5.2 staff input - hours worked; and 5.3 carer input - change in lifestyle/no change in lifestyle/loss of income. <p>Outcome measures were selected which provided global estimations of functioning. Highly specific outcomes, such as, for example, 'sense of safety' were not reported. Such specific outcomes are rarely reported in more than one study and it is difficult to assess their relevance to the effectiveness of the treatment. Other outcomes not readily falling into these categories</p>

Study characteristics tables: Crisis Resolution and Home Treatment Teams

			were also recorded but were not of pre-stated interest. Outcomes were divided into short-term (less than six weeks) medium-term (six weeks-three months) and long-term (more than three months).
New RCTs	Fenton-Maryland 1998 (N=119).		

Additional notes for quality assessment	
Author's objective	The primary objective was to review the effects of crisis intervention models for anyone with serious mental illness experiencing an acute episode when compared to the 'standard care' they would normally receive. A secondary objective, if data were available, was to compare effects of mobile crisis teams with crisis units based in hospitals or day centres.
What methods were used to identify primary studies?	Relevant randomised trials were identified by searching Biological Abstracts (1985-1998), CINAHL (1982-1998), The Cochrane Library, the Cochrane Schizophrenia Group's Register of trials, EMBASE (1980-1998), MEDLINE (1966-1998), PsycLIT (1974-1998), sociofile (1974-1998) and the ISI database (Science Citations and Social Science Citations). Further references were sought from published trials and their authors.
How were the inclusion criteria applied and what were they?	All randomised controlled trials of crisis intervention models (however defined) versus standard care for people with severe mental illnesses (however diagnosed). All reports of studies identified as above were inspected, independently, by each reviewer. Where disagreement occurred regarding the possible relevance of the study this was resolved by discussion, or where there was still doubt, the full article was acquired for further inspection. Once the full articles were obtained each reviewer, independently, decided whether they met the review criteria. Reviewers were not blinded to the names of the authors, institutions or journal of publication. Again, where disagreement occurred this was resolved by discussion and, when this was not possible, further information was sought. These trials were added to the list of those awaiting assessment pending acquisition of further information.
Criteria on which the validity (quality) of studies was assessed.	Two reviewers (CJ, KR) independently allocated trials to quality categories as per the Cochrane Collaboration Handbook (Mulrow 1999) and the Jadad Scale (Jadad 1996). Disagreement was resolved by discussion and where this was not possible the study was assigned to those awaiting assessment and the first author contacted for clarification. The Cochrane Collaboration Handbook criteria are based on the evidence of a strong relationship among the potential for bias in the results and the allocation concealment (Schulz 1995).
How were the data extracted from the primary studies?	Data were independently extracted by each reviewer and disagreements resolved by discussion. Where no data was possible to extract, or further information was needed, the trial was added to the list of those awaiting assessment and the first author contacted for clarification. Where some data was possible to extract, comments on the methods, participants, interventions and outcomes are presented in the Included Studies table.

References to included studies

Fenton-Maryland 1998 (published data only)

* Fenton WS, Mosher LR, Herrell JM, Blyler CR. Randomized trial of general hospital and residential alternative care for patients with severe and persistent mental illness. American Journal of Psychiatry 1998;155(4):516-22.

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Study characteristics tables: Crisis Resolution and Home Treatment Teams

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Muijen 2 - UK

Audini B, Marks IM, Lawrence R, Connolly J, Watts V. Home-based versus out-patient/in-patient care for people with serious mental illness. Phase II of a controlled study. *British Journal of Psychiatry* 1994;164:204-10.

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Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes
<p>Fenton-Maryland 1998</p>	<p>Allocation: random, using a computer-generated pattern. Blinding: six raters, blinding not clear. Allocation concealment: A (adequate). Follow-up: 6 months.</p>	<p>Diagnosis: schizophrenia, schizoaffective disorder, or other psychoses 55%, bipolar disorder 21%, other major mood disorder 20%, other 3%. N = 185* randomised at point of referral, 119 "successfully entered study." Age: mean 37 (SD 10). Sex: 52% M 48% F. History: mean age at 1st onset 16 (SD 9), mean age at 1st admission 23 (SD 9), mean no. prior admissions 13 (SD 14), mean length of lifetime prior admissions 43 months (SD 70). Exclusions: no psychopathology-based exclusion criteria. Recruitment: people experiencing an illness exacerbation who were enrolled in Montgomery County, Maryland, public mental health system. Setting: suburban USA.</p>	<p>1. "Community residential alternative" care: programme staffed by 2 bachelors level counselors 24 hrs/day, masters level social worker acted as programme director, medical responsibility for each participant's care maintained by outpatient psychiatrist, each newly admitted service user also evaluated by consulting psychiatrist who met weekly with programme staff to assist in treatment planning, monitor progress and provide staff supervision. Programme based at 8-bed facility, modeled on Soteria and Crossing Place. Other than supervised medication self-administration and one-to-one staff monitoring, programme avoided formal treatment. Aim was to provide "a normalizing homelike environment that minimizes stigma, loss of esteem, and assumption of the sick role while allowing participants to maintain continuity with outpatient treatment providers and community supports." N=93 randomised to group at point of referral, 69 "entered study." 2. Standard hospital care: provided by acute psychiatric ward of general hospital, supported by a day hospital and outpatient clinic. Hospital care included medical assessment, individual psychotherapy, group therapy, and pharmacologic management. N=92 randomised to group at point of referral, 50 "entered study."</p>	<p>1. Death. 2. Leaving the study early. 3. Admitted to acute care. 4. Readmitted to acute care. 5. Mean number of nonindex admissions. 6. Duration of acute inpatient care (nonindex). 7. Unemployed. 8. Homeless. 9. Arrested. 10. Number not discharged to community ("treatment failure rate").</p> <p>Unable to use: 1. PANSS (N not specified). 2. participant satisfaction (not a peer-reviewed published scale). 3. Social contacts (not a peer-reviewed published instrument).</p>	<p>* Demographic data only available for 119 participants who "entered study."</p>

Study characteristics tables: Crisis Resolution and Home Treatment Teams

<p>Fenton-Montreal 1979</p>	<p>Allocation: random assignment. Blinding: single, rated by independent researchers. Allocation concealment: B (unclear). Follow-up: 2 years.</p>	<p>Diagnosis: (ICD-8) schizophrenia 41.9%, psychosis 30.3%, neurosis 27.8%. N = 162.* Age: over 18 yrs, modal range 24-35 yrs. Sex: 40% M 60% F. History: in need of psychiatric admission, 40% 1st admissions, 34.2% hospitalized at least twice previously. Exclusions: organic brain syndrome, alcoholism, drug dependency, violent or suicidal behaviour. Recruitment: from service users presenting for admission to psychiatric unit of general hospital. Setting: inner city, Canada.</p>	<p>1. Home care: assessment and treatment in home environment, multidisciplinary team, 24 hr service, drug treatment, psychotherapy, instruction in living skills. N=78. 2. Standard care: short-term, intensive care in hospital, normal staffing levels, social work, follow-up visits after discharge. N=84.</p>	<p>1. Death. 2. Leaving study early. 3. Global functioning (PEF scale). 4. Admitted to acute care. 5. Readmitted to acute care. 6. Number of outpatient visits. 7. Economic costs**. 8. Duration of acute inpatient care (total)**.</p> <p>Unable to use: 1. Number of work days lost (no SD or N). 2. Family burden (FEF - data not usable as combined scores).</p>	<p>* Demographic data on 155 participants only. Paper states that non-compliance with questionnaire = non-response. ** Insufficient data for meta-analysis - available data presented in additional tables.</p>
<p>Hoult-Sydney 1981</p>	<p>Allocation: random assignment. Blinding: single, independent raters. Allocation concealment: A (adequate). Duration: 12 months.</p>	<p>Diagnosis: schizophrenia (50%), paranoid psychosis (10%), mania (9%), neurosis (6%), other (24%) (PSE). N = 120*. Age: 15 - 65 yrs. Sex: 46% M 54% F. History: 25% were 1st admissions, 66% had two or more previous admissions, 29% had previous lifetime hospitalization of 1 year or more. Exclusions: dual diagnosis, organic brain disorder, mental retardation. Recruitment: from service users presenting for admission to psychiatric hospital. Setting: inner city, Australia.</p>	<p>1. Project Team: multidisciplinary "project" team, drug treatment, counselling, training in social and basic living skills, family intervention, support and education, 24 hr cover. N=60. 2. Standard hospital care and follow-up. N=60.</p>	<p>1. Death. 2. Leaving study early. 3. Admitted to acute care. 4. Readmitted to acute care. 5. Attempted suicide**. 6. Duration of acute inpatient care (total)***. 7. Economic costs***.</p> <p>Unable to use: 1. Psychosocial functioning (HSRS - no SD or N). 2. Clinical outcomes (BPRS - no data, PSE - no SD).</p> <p>Not used: 1. Family burden questionnaires (not peer-reviewed, published instrument). 2. Relatives' satisfaction questionnaire (not peer-reviewed, published instrument).</p>	<p>* Diagnostic data only available for 115 participants. ** Data obtained by authors of the Cochrane review could not be verified by GDG reviewers. *** Insufficient data for meta-analysis - available data presented in additional tables. A sub-analysis was conducted using only those with schizophrenia (Hoult 1984).</p>

Study characteristics tables: Crisis Resolution and Home Treatment Teams

<p>Muijen-London 1992</p>	<p>Allocation: random envelope allocation. Blinding: single, independent raters. Allocation concealment: C (inadequate). Duration: 20 months.</p>	<p>Diagnosis: serious mental illness, 53% met criteria for schizophrenia (PSE). N = 189*. Age: range 17-64 (mean 35). Sex: 49.7% M 50.3% F. History: "all qualifying patients being admitted for the 1st time to a psychiatric hospital and 20% of those with previous admissions... the other 80% were excluded because the team would not have been able to care for this additional number of patients." Exclusions: primary addiction, primary diagnosis of organic brain damage. Recruitment: from service users deemed by an independent psychiatrist to be in need of immediate hospitalization. Setting: inner London (Southwark).</p>	<p>1. "Daily Living Programme" (home care): multidisciplinary team, crisis clinics, 24 hr answering service, problem solving, home visits and relative support, life skills training, assistance with financial and housing problems. N=92. 2. Standard care: hospital care, normal staffing levels, standard outpatient services, CPN. N=97.</p>	<p>1. Death**. 2. Harm to others (homicide). 3. Leaving study early 4. Admitted to acute care (based on CSRI)**. 5. Readmitted to acute care (based on CSRI)**. 6. Duration of acute inpatient care (for all admissions - based on hospital records at 3 months)**. 7. Duration of acute inpatient care (for all admissions/for index admissions/for nonindex admissions - based on CSRI)**,**. 8. Mental state (PSE, BPRS). 9. Global functioning (GAS). 10. Social functioning (SAS). 11. participant satisfaction (CSQ). 12. Economic costs****.</p> <p>Unable to use: 1. Harm to self (incomplete information, data given refers only to participants who were admitted). 2. Daily living (DLS was adapted for use in the SAS by authors) 3. Relatives' satisfaction (RSQ devised by authors, as yet not peer reviewed). 4. Service use (no data for standard care group).</p>	<p>* Exclusion criteria applied after randomisation but before completion of first assessment. 6 participants were excluded in the DLP group (2 lived outside area, one had organic disease, one was pregnant, one refused to participate, one had an absence of psychiatric illness). 1 participant was excluded from standard care group (absence of psychiatric illness). **The higher number of patients excluded in the home care group may be due to closer scrutiny of selection criteria by the DLP team and may have led to some selection bias." ** The three participants who committed suicide in DLP group were diagnosed with depression (1) or manic-depression (2). The two participants who committed suicide in standard care group included one patient with previous admissions for "psychotic depression" and paranoid ideas, and a second patient admitted for gross self-neglect. *** After 31 months change in policy meant DLP team lost control of admission & discharges. **** Insufficient data for meta-analysis - available data presented in additional tables.</p>
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Study characteristics tables: Crisis Resolution and Home Treatment Teams

<p>Pasamanick-Ohio 1964</p>	<p>Allocation: random allocation using a deck of random cards. Blinding: drug allocation, raters not blind. Allocation concealment: A (adequate). Duration: 24 months.</p>	<p>Diagnosis: schizophrenia. N = 163*. Age: range 18-62, mean 36.6. Sex: 32% M 68% F. History: ~30% 1st admissions. Exclusions: homicidal or suicidal tendencies, family members unable to supervise participant in the home. Recruitment: from service users recently admitted to hospital. Setting: urban/suburban Ohio and Kentucky.</p>	<p>1. Home-drug care: home-based nurse visits, drug treatment, practical assistance and support for participant and family, multidisciplinary team, 24 hr answering service. N=64**.</p> <p>2. Home-placebo care: as above except placebos given instead of prescribed medication. N=45***.</p> <p>3. Standard care: hospitalisation and medication, normal staffing levels and treatment programmes. N=54.</p>	<p>1. Admitted to acute care. 2. Readmitted to acute care. 3. Leaving the study early. 4. Days in hospital****.</p> <p>Unable to use: 1. Mental state (IMPS, MSPP, SORR & PHNR - no SD). 2. Family burden (no data for standard care group). 3. Role fulfillment (no data for standard care group). 4. Social activity (no data for standard care group).</p>	<p>* A second cohort recruited from community centres - only randomised to home-drug or home-placebo care - not used in this review.</p> <p>** Once a participant from the home-care group was admitted they were no longer treated by the community team, follow-up interviews still conducted.</p> <p>*** Not used in this analysis.</p> <p>**** Insufficient data for meta-analysis - available data presented in additional tables.</p>
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Study characteristics tables: Crisis Resolution and Home Treatment Teams

<p>Stein-Madison 1975</p>	<p>Allocation: random assignment. Blinding: single, independent raters. Allocation concealment: B (unclear). Duration: 14 months.</p>	<p>Diagnosis: any severe psychiatric disorder, ~50% schizophrenia (method of diagnosis unclear). N = 130. History: in need of psychiatric hospital admission. Sex: 55% M 45% F. Age: range 18-62, mean 31. History: mean duration previous lifetime hospitalization 14.5 months, mean no. previous admissions ~5, 17% 1st admissions. Exclusions: organic brain syndrome or primary alcoholism. Recruitment: from service users presenting for admission to inpatient ward of psychiatric hospital. Setting: urban/suburban Wisconsin.</p>	<p>1. "Training in Community Living" (home care): home-based care, multidisciplinary team, 24 hr service, drug treatment, coping skills taught, family support given, use of community agencies - for 14 months and then withdrawn. N=65. 2. Standard care: hospitalization, aim of returning to community as soon as possible, normal staffing levels, standard outpatient follow-up. N=65.</p>	<p>1. Death. 2. Leaving study early. 3. Attempted suicide. 4. Admitted to acute care*. 5. Readmitted to acute care. 6. Duration of acute inpatient care (for all admissions). 7. Time spent in prison. 8. Time spent unemployed. 9. Time spent in sheltered employment. 10. Time spent in competitive employment. 11. Arrested. 12. Economic costs**.</p> <p>Unable to use: 1. Leaving study early (relatives - not clear if all relatives followed up or just relatives living with the participant). 2. Mental state (SCRS - no mean or SD). 3. Global State (CAF devised by authors, as yet not peer reviewed). 4. Family burden (FBS devised by authors, as yet not peer reviewed). 5. Life satisfaction (LSS - no mean or SD). 6. Self-esteem (SES - no mean or SD).</p> <p>Not used: 1. Time spent in medical institution, 2. Time spent in "noninstitutional living situation" (supervised, unsupervised). 3. Competitive income earned. 4. ER use.</p>	<p>* preliminary report data based on N=60 in each group. ** Insufficient data for meta-analysis - available data presented in additional tables.</p>
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GENERAL

CPN = community psychiatric nurse.
F1 psychosis = Medical Subject Heading Codes.
ICD-10 = 10th revision of the International Classification of Diseases.
OPD = outpatient department.
SCALES
Mental state
BAS = Brief Rating Scale for Anxiety.
BPRS = Brief Psychiatric Rating Scale.
CPRS = Comprehensive Psychopathological Rating Scale.
MADRAS = Montgomery and Asberg Depression Rating Scale.
OPCRIT = Operational Criteria for diagnosing Severe Mental Illness.
PSE = Present State Examination.

Family burden

FEF = Family Evaluation Form.
Functioning
GAF = Global Assessment of Functioning.
GAS = Global Adjustment Scale.
HSRS = Health Sickness Rating Scale.
PEF = Psychiatric Evaluation Form.
SAS = Social Adjustment Scale.
SFQ = Social Functioning Questionnaire.
SFS = Social Functioning Schedule.
Satisfaction with Services
CSQ = Client Satisfaction Questionnaire.
Service use
CSRI = Client Service Receipt Interview.

Characteristics of excluded studies

Study	Reason for exclusion
Bond - USA	Allocation: not randomised, parallel case series.
Burns - UK	Allocation: randomised. 332 allocated but only 162 entered the study. Participants: anyone presenting for treatment to the mental health services in the relevant catchment area. Majority not severely ill, only 35% met PSE category 'psychotic'.
Bush - USA	Allocation: randomised. Participants: those with severe psychosis and high rate of rehospitalisation - not necessarily in 'crisis' or need of readmission at time of allocation. Interventions: community intensive outreach versus hospital care.
Levenson - USA	Allocation: randomised. Participants: people with acute schizophrenia (Spitzerian criteria). Intervention: admission versus 'community care'. Non hospitalised group sent home but not treated there - required to attend outpatient clinic daily, treatment not delivered by multidisciplinary team, not available 24 hrs.
Merson - UK	Allocation: randomised. Participants: anyone with a psychiatric disorder referred as a psychiatric emergency from the accident and emergency department or GP. Intervention: early intervention service (EIS) designed to treat people as quickly as possible versus standard care. EIS assessment at home and then case managers assigned - not a crisis intervention and not available 24 hrs a day.
Mosher - USA	Allocation: quasi randomisation. Participants: those with schizophrenia, first admission. Interventions: treated in a residential home versus hospital care - not managed in their home environment.
Pai - India	Allocation: quasi randomised - therefore excluded. Participants: those with severe mental illness in need of hospitalisation. Interventions: home care by nurse versus hospital care.
Pasamanick2-USA	Allocation: randomised. Participants: those with serious mental illness referred to the study from community centres. Not necessarily in a crisis and not allocated to the standard care as not in need of hospitalisation. Instead, they were allocated to the home-drug or home-placebo group. See included studies table (Pasmanick-Ohio) for more detail.
Polak - USA	Allocation: randomised. Participants: people with psychiatric illness requiring hospitalisation in a setting where a crisis ethos was already being practiced. Intervention: home based care via multidisciplinary team with 24 hrs on call service available vs hospital based care. Outcomes: denominators unclear, no usable data.
Sledge - USA	Allocation: randomised. Participants: people in acute phase of psychiatric disorder. Intervention: partial hospitalisation versus standard hospitalisation - both hospital-based packages.
van Minnen - Holland	Allocation: randomised. Participants: those with both "mental retardation and severe mental illness" - not clearly those with schizophrenia. Interventions: outreach versus hospital-based treatment.

Study characteristics tables: Crisis Resolution and Home Treatment Teams

Case Management (Previous guideline)

Author(s)	<ol style="list-style-type: none"> 1. Review type 2. Funding 3. Period covered 4. Data analysis 5. No. of studies 6. No. randomised 	Interventions	Reported Outcomes
<p>Marshall M, Gray A, Lockwood A, Green R.</p> <p>Case Management for People with Severe Mental Disorders (Cochrane Review).</p> <p>In: <i>The Cochrane Library</i>, Issue 4, 2001. Oxford: Update Software.</p>	<ol style="list-style-type: none"> 1. Systematic reviews of RCTs. 2. Intramural sources of support to the review: Manchester University Department of Psychiatry, Oxford University Department of Socio-legal Studies. Extramural sources of support to the review: Wellcome Trust, Nuffield Trust. 3. 1966-97. 4. Categorical data extracted twice and cross-checked, odds ratios and NNTs calculated. Continuous data used if scale peer-reviewed/self-report or independently rated/provided summary score of an area of functioning. Normally distributed continuous data used if means and SDs available. Tests for heterogeneity performed. 5. 10 (13 including three new trials). 6. 1695 (2546) 	<p>An intervention was considered to be 'case management' if it was described as such in the trial report. No distinction, for eligibility purposes, was made between 'Brokerage', 'Intensive', 'Clinical' or 'Strengths' models. The UK terms 'care management' and 'care program approach' were treated as synonyms for case management. The review excluded studies of two types of intervention often loosely classed as 'case management': (i) Assertive Community Treatment; and (ii) 'Home-Based Care.'</p>	<ol style="list-style-type: none"> 1. Measures of numbers remaining in contact with psychiatric services. 2. Measures of hospital admission. 3. Measures of clinical and social outcome. 4. Measures of economic cost.
New RCTs	Burns-UK700 (N=708); Holloway-London (N=70); Issakidis-Sydney (N=73).		
Additional notes for quality assessment			
Author's objective	To determine the effects of case management as an approach to caring for severely mentally ill people in the community. Case management was compared against standard care on four main indices: (i) numbers remaining in contact with the psychiatric services; (ii) extent of psychiatric hospital admissions; (iii) clinical and social outcome; and (iv) costs.		
What methods were used to identify primary studies?	Electronic searches of CINAHL (1997), the Cochrane Schizophrenia Group's Register of trials (1997), EMBASE (1980-1995), MEDLINE (1966-1995), PsycLIT (1974-1995) and SCISEARCH (1997) were undertaken. References of all identified studies were searched for further trial citations.		
How were the inclusion criteria applied and what were they?	The inclusion criteria were that studies should be randomised controlled trials that (i) had compared case management to standard community care; and (ii) had involved people with severe mental disorder mainly between the ages of 18-65. Studies of case management were defined as those in which the investigators described the intervention as 'case' or 'care' management rather than 'Assertive Community Treatment' or 'ACT'. The search for trials was performed independently by two reviewers (AL or MM). Each reviewer read the abstracts of all publications detected by the search and discarded irrelevant publications to create a pool of potentially eligible trials. Eligible		

Study characteristics tables: Case Management

	trials were those in which some form of 'case management' (including ACT and Home-based care) was compared against a control treatment. The results of the two searches were merged to form a pool and copies were obtained of all papers describing trials in the pool. The reviewers evaluated together all the trials in the pool in order to decide which should be included in the case management review. After trials had been selected, an independent rater, unfamiliar with the case management literature, was asked to repeat the classification exercise. The independent rater (AG) classified the studies in the pool into two groups: (i) not eligible; (ii) eligible for the case management review. This rater was guided by quality criteria for identifying a randomized controlled trial and by eligibility criteria for the case management comparison
Criteria on which the validity (quality) of studies was assessed.	MM & AL rated the quality of all included trials. A rating was given for each trial based on the three quality categories as described in the Cochrane Collaboration Handbook. Only trials in category A or B were included in this review.
How were the data extracted from the primary studies?	All data were extracted twice and then cross-checked to ensure reliability. "Data were reported as presented in the original studies, without making any assumptions about patients lost to follow-up. The number remaining in contact was estimated by taking the number of patients who were re-interviewed at the final follow-up assessment in each trial. When analysing loss of contact in trials where deaths had occurred, treatment and control groups were reduced by the respective numbers of deaths, so that deaths were not counted as losses of contact. Insufficient data were available to determine how many patients not re-interviewed were of: (i) unknown whereabouts; (ii) known whereabouts but not having psychiatric contact; and (iii) known whereabouts and having contacts but refusing to be re-interviewed. The estimate of numbers remaining in contact assumes that patients who were not re-interviewed were likely to be refusing or resisting further contact with the psychiatric services, but this may not be entirely correct."

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Burns-UK700 (published data only)

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Franklin-Houston (published data only)

Study characteristics tables: Case Management

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Holloway-London (published data only)

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Jerrell-Carolina (published data only)

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Macias-Utah (published data only)

Macias C, Kinney R, Farley WO, Jackson R, Vos B. The role of case management within a community support system: partnership with psychosocial rehabilitation. *Community Mental Health Journal* 1994;30:323-39.

Marshall-Oxford (published data only)

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Marshall M, Lockwood A, Gath D. Social services case-management for long-term mental disorders: a randomised controlled trial. *Lancet* 1995;345:409-12.

Muijen-London2 (published data only)

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Muijen M, Cooney M, Strathdee G, Bell R, Hudson A. Community Psychiatric Nurse Teams: Intensive support versus generic care. *British Journal of Psychiatry* 1994;165:211-7.

Quinlivan-California (published data only)

Quinlivan R, Hough R, Crowell A, Beach C, Hofstetter R, Kenworthy K. Service utilization and costs of care for severely mentally ill clients in an intensive case management program. *Psychiatric Services* 1995;46:365-71.

Solomon-Philadelphi2 (published data only)

Solomon P, Draine J, Meyerson A. Jail recidivism and receipt of community mental health services. *Hospital and Community Psychiatry* 1994;45:793-7.

Tyrer-London (published data only)

Tyrer P, Morgan J, Van Horn E, Jayakody M, Evans K, Brummell R, White T, Baldwin D, Harrison-Read P, Johnson T. A randomised controlled study of close monitoring of vulnerable psychiatric patients. *Lancet* 1995;345:756-9.

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Characteristics of included studies

Study	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment

Study characteristics tables: Case Management

<p>Burns-UK700</p>	<p>Allocation: "randomly assigned." Follow-up: 2 years. Lost to follow-up: 29/708 (4%).</p>	<p>Setting: four inner-city mental-health services - three in London and one in Manchester. Inclusion criteria: age 18-65; diagnosis of psychosis by structured OPCRIT examination; duration of psychotic illness at least 2 years; minimum of two previous admissions, one within last 2 years. Diagnosis: 86% schizophrenia or schizoaffective disorder. Age: ICM group mean 38.6 (SD 12.1), SCM group mean 37.9 (SD 11.2). Sex : 43% F. History: ICM group mean duration of illness 120 months (range 60-216), SCM group mean 108 months (range 48-204 months); ICM group mean no. days in hospital in previous two years 68 (range 30-150), SCM group mean 75 (range 36-150). N: 353 ICM; 355 SCM.</p>	<p>1. Intensive case management (ICM): case load 10-15 service users per case manager. 2. Standard case management (SCM): case load 30-35 service users per case manager. Note: case managers were mainly mental-health nurses, but also included occupational therapists, mental-health support workers, and psychologists. The degree of training and skill were similar in both ICM and SCM groups.</p>	<p>1. Numbers lost to follow-up. 2. Lost contact with case manager. 3. Death. 4. Admitted to hospital. 5. Number of admissions. 6. Days in hospital. 7. Mental state (CPRS, SANS). 8. Side effects of medication (AIMS). 9. Social functioning (DAS). 10. Quality of life (Lancashire Quality-of-life profile). 11. Committed assault. 12. Imprisoned. 13. Time spent in independent living. 14. Attempted suicide. 15. Economic costs*.</p> <p>Unable to use: 1. Satisfaction (not a published, peer-reviewed scale).</p> <p>Not used: 1. Camberwell assessment of unmet needs. 2. Number claiming benefits. 3. Number of contacts with services. 4. Duration of contacts with services.</p>	<p>* Data provided in additional tables.</p>	<p>A</p>
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Study characteristics tables: Case Management

<p>Curtis-New York</p>	<p>Allocation: "randomly assigned" - method not described. Follow-up: 35 - 52 months.</p>	<p>Setting: New York, USA. Inclusion criteria: about to be discharged from hospital, local residents, age 18-54, without a diagnosis of substance abuse or organic brain disorder, in-patients for >7 days, and not eligible for the 'community support system' program - that is no psychiatric admission of >6 months duration/three admissions of >10 days within last 2 years. Diagnosis: 38% schizophrenia. Age: mean 36 yrs. Sex: 59% F. History: mean N previous admissions >1. N: 147 intervention; 145 control.</p>	<p>1. Standard Care: routine aftercare from Harlem Hospital Center (HHC). 2. Case management: 'Intensive outreach case management' from a multi-disciplinary team at HHC. This implemented a discharge treatment plan, and monitored clinical and social problems. The team did not 'assume direct responsibility for care but [...] help[ed] the service user enroll in a day hospital program, adult mental health clinic, rehabilitation program, or alcohol treatment program'. Ratio: case manager 1: clients 35-40 .</p>	<p>1. Admitted to hospital. 2. Days in hospital*.</p>	<p>Some more severely ill clients not included in this part of study as they were eligible for CSS group. Follow-up period variable. Number lost to follow-up not applicable as only outcome measure was use of hospital services. * Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>
<p>Ford-London</p>	<p>Allocation: "computer-generated random numbers" - no further description. Follow-up: 18 months. Lost to follow-up: 6/77 (8%).</p>	<p>Setting: Southwark, London, UK. Inclusion criteria: psychotic illness, either: (a) a recent in-patient admission, (b) impairment in social functioning, (c) problems in compliance, or (d) problems in receiving necessary multi-disciplinary care. Organic brain disease, primary alcohol or drug abuse, and learning disability - excluded. 114 participants were screened of whom 77 met entry criteria. Diagnosis: 82% schizophrenia. Age: mean = 46 years. Sex: 53% F. History: 59.7% had had admission in last 2 years. N: 39 intervention; 38 control.</p>	<p>1. Standard Care: routine care from psychiatric services. 2. Case management: team = 4 nurses and 1 OT (leader) + advice from consultant psychiatrist. Case manager = "single accountable point of contact". Emphasis on care-co-ordination, advocacy, and direct care delivery. No formal purchasing of care. Case managers worked 9-5 pm with limited flexibility and no 24 hour cover. They provided considerable direct care but no specific psycho-social interventions. Ratio: case manager 1: client 10 (approximately).</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. 3. Days in hospital*. 4. Death. 5. Imprisonment. Not used: 1. Number of contacts with psychiatric care.</p>	<p>* Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>

Study characteristics tables: Case Management

<p>Franklin-Houston</p>	<p>Allocation: selection from list using computer generated-table of random numbers. Follow-up: 12 months. Lost to follow-up: 76/417 (18%).</p>	<p>Setting: Texas, USA. Inclusion criteria: >2 admissions to state/ county mental hospitals in last 2 years, living in catchment area of CMHC, not in nursing home, gaol or psychiatric hospital. Diagnosis: 56% schizophrenia. Age: mean = 49 years (estimated). Sex: 51% F. History: mean N previous admissions 4. N: 213 intervention; 204 control.</p>	<p>1. Standard Care: routine after care. 2. Case management: from 7 managers with graduate/ undergraduate degrees in social work, sociology, counselling or business administration, and mean of 4.3 years experience working with mentally ill people. Ratio: case manager 1: clients 30.</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. 3. Death. 4. Imprisonment.</p> <p>Unable to use: 1. Social functioning (Activities of Daily Living Instrument - unclear which instrument used). 2. Quality of life (unclear which instrument used, no SD). 3. Psychological well-being (no mean). 4. Self-esteem (no mean).</p>		<p>A</p>
<p>Holloway-London</p>	<p>Allocation: randomised by sealed envelope. Follow-up: 9, 18 months. Lost to follow-up: 7/70 (10)% at 9 months, 10/70 14% at 18 months.</p>	<p>Setting: East Lambeth, London. UK. Inclusion criteria: age 16-64; hospital diagnosis of functional psychosis Diagnosis: 66% schizophrenia or schizoaffective disorder. Age: ICM group mean 33.2 (1.01), control group mean 36.3 (10.1). Sex: 34% F. History: ICM group mean duration of illness 10.5 years (SD 8.9), control group mean 12.7 years (SD 8.3). N: 35 intervention; 35 control.</p>	<p>1. Intensive case management (ICM): core team (four nurses and an occupational therapist) with part-time involvement of two psychiatrists and a clinical psychologist. Case loads were eight clients per core team. Staff provided direct interventions and acted as advocates for their clients in linking with other health and social welfare services. 2. Control group service: clients remained under the care of the local consultant teams, receiving standard care from local services. Services were provided, as deemed appropriate, by CPNS, social workers, inpatient ward teams, outpatient clinics, local depot antipsychotic clinic and community care workers. The CPNS had case loads averaging 30 clients.</p>	<p>1. Lost to follow-up. 2. Death. 3. Admitted to hospital. 4. Days in hospital*. 5. Number of admissions*. 6. Mental state (CPRS, SANS, BDI). 7. Quality of life (Lancashire Quality of Life profile). 8. Social functioning (DAS social role performance).</p> <p>Unable to use: 1. Satisfaction (not peer-reviewed, published scale).</p> <p>Not used: 1. Social Behaviour Scale BSM score.</p>	<p>* Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>A</p>

Study characteristics tables: Case Management

<p>Issakidis-Sydney</p>	<p>Allocation: "randomly allocated" - no further description. Follow up: 12 months. Lost to follow-up: 19%.</p>	<p>Setting: Eastern Suburbs Mental Health Service (ESMHS), Sydney, Australia. Inclusion criteria: diagnosis of schizophrenia or bipolar disorder (method unclear), and at least 3 of the following – high relapse/readmission rate (operationalized as 1 or more SDs above the mean length of stay or admission rate for the area psychiatric inpatient unit over the 2 years prior to the study period; poor compliance with mental health services; frequent disturbing behaviour; frequent changes in accommodation; dysfunctional budgeting skills; a low quality of life; difficulty in managing under existing health services. Clients excluded if not in age range 16-70, had a primary diagnosis of substance use, organic brain disorder or intellectual disability. Diagnosis: 89% schizophrenia. Age: ICM mean 40 (SD 11), SCM mean 43 (SD 11). Sex: 44% F. History: "Just under one-third (N=21) of the sample were categorized as 'high hospital users' when they entered the study. There was no difference between the ICM and the SCM groups in the mean number of bed days, admissions, or the number of clients admitted" over the 12 months prior to their entry into the study. N: 37 ICM; 36 SCM.</p>	<p>1. Intensive case management (ICM): multidisciplinary team, individual caseloads of no more than 10 clients. Each nurse worked closely with social worker or psychologist so that each client was well known to at least 2 team members. Team conducted daily medication rounds and, in addition to providing direct clinical care, linked clients with other community and social services. Clients seen on average 103 (SD=25) times over 12 months, or twice per week. 2. Standard case management (SCM): multidisciplinary team, individual caseloads of 20-40 clients. Nurses and allied health workers not formally linked. Team did not conduct formal medication rounds. Clients seen on average 41 (SD=23) times over 12 months, or less than once per week. NB: Both teams had access to inpatient services, rehabilitation services and 24 hr crisis service, were directly managed by a team leader (nurse or allied health professional) and had access to a trainee and consultant psychiatrist. Case managers in both teams undertook the majority of planned client contact in community. Neither team received any special training before study began.</p>	<p>1. Lost to follow-up. 2. Lost contact with case manager. 3. Death. 4. Admitted to hospital. 5. Days in hospital. 6. Number of admissions. 7. Global functioning (Life Skills Profile – LSP)*. 8. Improved functioning (increase of more than 17 points on LSP). 9. Unemployed. 10. Self-harm or harm to others. 11. Non-compliant with medication. 12. Economic costs**.</p> <p>Not used: 1. Number of contacts with services.</p>	<p>* Unclear whether clinician rating this scale was blind to group allocation. ** Data provided in additional tables.</p>	<p>B</p>
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Study characteristics tables: Case Management

<p>Jerrell-Carolina</p>	<p>Allocation: "random allocation" - no further description. Follow up: 6,12,18 months. Lost to follow-up: unclear but appears low.</p>	<p>Inclusion criteria: severe mental disorder, about to be discharged from hospital, >2 admissions in past year or lengthy residential treatment, or repeated emergency visits, and >2 of following: (a) poor work history last 2 years or (b) eligible for public assistance, (c) poor basic living skills, (d) poor social support, (e) history of socially unacceptable behaviour. Diagnosis: unknown. Age: mean = 18-59 years Sex: unclear. History: unclear. N: 42 intervention; 40 control.</p>	<p>1. Standard Care: from one of 4 multi-disciplinary psychiatric team (team = 4 social workers and 1 psychiatrist). Teams carried about 150 clients (including those not in study). 2. Case management: 'Intensive Broker Model Team' composed of "paraprofessional staff" operating as "sole practitioners" exclusively in a "field-based" setting. Case managers linked clients to other forms of care, acted as advocates, and provided support in independent living skills. Ratio: case manager 1: client 15-18. 3. ACT.</p>	<p>1. Costs of psychiatric care*. 2. Behaviour (SAS). Unable to use: 1. Mental state (not normally distributed). 2. Role functioning (not peer-reviewed scale).</p>	<p>This is only a partial report of the study in a Journal for Health Service managers. The authors refer to more detailed reports of the study in press, but these have not yet appeared. Data from ACT arm not used in this review. * Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>
<p>Macias-Utah</p>	<p>Allocation: "randomly assigned" - no further details. Follow-up: 18 months . Lost to follow-up: 7/41 (17%).</p>	<p>Setting: Utah, USA. Inclusion criteria: serious, persistent mental disorder. Primary diagnosis of mental retardation / substance abuse excluded. Diagnosis: 46% schizophrenia. Age: not reported. Sex: 40% F. History: unclear. N: 21 intervention; 20 control.</p>	<p>1. Standard Care: psychosocial rehabilitation program at CMHC. 2. Case management: psychosocial rehabilitation and case management (Strengths model - focussing on consumer strengths). Required goal-setting, counselling, and strong case manager-consumer relationship. Ratio: case manager 1: clients 20.</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. Unable to use: 1. Mental state (BPWI, SRI - unpublished). 2. Family burden (Utah Family Burden Scale - unpublished). 3. Satisfaction (Utah Case Management Consumer Assessment Record - not independently rated - ratings made by case managers - no summary score, no SD).</p>		<p>B</p>
<p>Marshall-Oxford</p>	<p>Allocation: randomised by sealed envelope. Follow-up: 7, 14 months. Lost to follow-up: 19/80 (23.4%).</p>	<p>Setting: Oxford, UK. Inclusion criteria: severe psychiatric disorder, homeless/at risk of homelessness, or coping poorly in temporary accommodation, not already receiving case management. Diagnosis: 73.8% schizophrenia. Age: mean = 47.5 years. Sex: 15% F. History: 85% had >1 previous admission. N: 40 intervention; 40 control.</p>	<p>1. Standard Care: whatever care individuals had been receiving at start of study. 2. Case management: from 3 case managers (1 nurse and others with experience working with homeless people and refugees) and 1 team leader (OT with extensive experience in case management and community psychiatry). Ratio: case manager 1: clients 10 (approximately).</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. 3. Days in hospital*. 4. Cost of days in hospital*. 5. Social functioning (REHAB Scale). 6. Quality of life. 7. Death. 8. Imprisonment. Unable to use: 1. Mental state (skewed). 2. Need for care (skewed). 3. Social Integration Scale (not published in peer-reviewed journal). 4. Costs of other care.</p>	<p>* Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>A</p>

Study characteristics tables: Case Management

<p>Muijen - London</p>	<p>Allocation: "random allocation" - no further details. Follow up: 6,12,18 months. Lost to follow-up: 24/82 (29.2%).</p>	<p>Setting: London, UK. Inclusion criteria: age 18-64, schizophrenia / affective psychosis lasting >2 years, >2 hospital admissions in last 2 years, about to be discharged from hospital, living in catchment area, no primary diagnosis of organic brain disease. Diagnosis: 83% schizophrenia. Age: mean = 37 years. Sex: 44% F. History: mean N of admissions 5.7. N: 41 intervention; 41 control.</p>	<p>1. Standard Care: care from CPNs in primary care. 2. Case management: acting as advocate, practical assistance with welfare benefits and housing, no discharge policy. Community support team of 3 CPNs and team leader. Ratio: case manager 1: clients 8-11.</p>	<p>1. Lost to follow-up. 2. Admitted to hospital. 3. Days in hospital*. 4. Cost hospital in-patient care, all health care, all care*. 5. Social functioning (GAS, SAS). 6. Death. 7. Imprisonment. 8. Mental state (BPRS). Unable to use: 1. Mental state (PSE - skewed). 2. Participant satisfaction (follow up rate < 50%). 3. Carer satisfaction (scale not validated for carers, low follow up rate). 4. Costs of other care (no SD provided).</p>	<p>Although the community support team had a good staff : client ratio, the amount of time in contact appears low. * Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>
<p>Quinlivan - California</p>	<p>Allocation: "random allocation" - no further details. Follow-up: 2 years. Lost to follow-up: apparently none - not clear.</p>	<p>Setting: San Diego County, USA. Inclusion criteria: age >18, DSM-III-R axis I disorder, >2 hospitalizations in last 2.5 years. Diagnosis: 67.8% schizophrenia. Age: mean = 37 years (estimated). Sex: 56% F. History: unclear. N: 30 high intensity case management; 30 low intensity case management; 30 control.</p>	<p>1. Standard Care: treatment from public mental health system. 2. Case Management: low-intensity. Ratio: case manager 1: clients 40. 3. ACT: included assertive outreach, team working, control of client finances. Ratio: ACT manager 1: clients 15 (maximum).</p>	<p>1. Days in hospital*. 2. Costs of psychiatric in-patient care*.</p>	<p>This is a three group study, data from the study are included in both Case Management vs Standard Care and ACT vs Standard Care comparisons. * Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>B</p>
<p>Solomon - Philadelphia2</p>	<p>Allocation: "randomly assigned" - no further details. Follow-up: 1 month, 6 months. Lost to follow-up: not reported.</p>	<p>Setting: Jail system of a large urban center, USA. Inclusion criteria: about to be released from prison, homeless, and seriously mentally ill. Diagnosis: unclear (see inclusion criteria). Age: mean = 35.4 years. Sex: all M. History: not described. N: 43 Intensive Case Management; 42 ACT; 55 control.</p>	<p>1. Standard Care: referral to local CMHC. 2. Case Management: intensive - from forensic case manager working with CMHC. Case manager worked individually. Ratio: case manager 1: client 4. 3. ACT: from team including 4 case managers and 1.5 psychiatrist equivalents. Ratio: ACT managers 1: clients about 10.</p>	<p>1. Imprisonment.</p>	<p>ACT data not used in this review.</p>	<p>D</p>

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<p>Tyrer-London</p>	<p>Allocation: by independent audit officer using random number tables. Follow-up: 18 months. Lost to follow-up: 104/393 (26.4%).</p>	<p>Setting: London, UK. Inclusion criteria: psychotic illness, contact with >2 parts of psychiatric service, >2 psychiatric admissions, or persistent attendance at a service for >1 year. Diagnosis: 54% schizophrenia. Age: median = 44 years. Sex: 45% F. History: (see inclusion criteria). N: 196 intervention; 197 control.</p>	<p>1. Standard Care: routine care from psychiatric services. 2. Case management: people allocated a key worker as recommended by the UK Department of Health's Care Programme Approach (key worker = a mental health professional responsible for maintaining fortnightly contact and monitoring). Ratio: unclear.</p>	<p>1. Admitted to hospital. 2. Days in hospital*. 3. Lost to follow-up.</p>	<p>Unclear if people also received the needs assessment and care planning element of the Care Programme Approach. * Insufficient data for meta-analysis - available data presented in additional tables.</p>	<p>A</p>
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Abbreviations

Schizophrenia: includes "schizophrenia-like" disorders.

ACT: Assertive Community Treatment.

BDI: Beck Depression Inventory.

BPRS: Brief Psychiatric Rating Scale.

BPWI: Brief Psychological Well-being Index.

CMHC: Community Mental Health Centre.

CPN: Community Psychiatric Nurse.

CPRS: Comprehensive Psychopathological Rating Scale.

DAS: Disability Assessment Schedule.

DSM-III-R: Diagnostic Statistical Manual (version 3 - revised).

F: Female.

GAS: Global Adjustment Scale.

M: Male.

N: Number.

OT: Occupational Therapist .

PSE: Present State Examination.

SD: Standard Deviation.

SRI: Self Report Inventory.

SANS: Scale for the Assessment of Negative Symptoms.

SAS: Social Adjustment Scale.

SBS: Social Behaviour Schedule.

Characteristics of excluded studies

Study	Reason for exclusion
Aberg-Stockholm	Intervention: Assertive Community Treatment.
Bigelow-Oregon	Not randomised - quasi-experimental design.
Bond-Chicago1	Intervention: Assertive Community Treatment.
Bond-Chicago2	Not randomised - matched groups design. Compared two types of crisis housing.
Bond-Indiana1	Intervention: Assertive Community Treatment.
Bond-Indiana2	Not a randomised controlled trial. Allocation to ACT and Reference Group was not random in one of the three participating centres. The study could be included if separate data can be obtained from the two centres where randomisation took place.

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Borland-Spokane	Not randomised.
Burns-London	Intervention: multi-disciplinary team home treatment.
Bush-Atlanta	Intervention: Assertive Community Treatment.
Champney-Ohio	All four comparison groups received some form of case management. No appropriate control.
Chandler-California	Intervention: Assertive Community Treatment.
De Cangas-Quebec	Intervention: Assertive Community Treatment.
Dean-Birmingham1	Not randomised.
Dean-Birmingham2	Not randomised - quasi-experimental.
Dharwadkar-Victoria	Not a randomised controlled trial. A before and after design was used to assess the effectiveness of an "ACT team".
Essock-Connecticut	Compared Assertive community treatment against a case management control group.
Fenton-Montreal	Not case management or Assertive community treatment.
Glick-New York	Not case management. Day hospital care vs out-patient group therapy.
Godley-Illinois	Intervention: Assertive Community Treatment.
Goering-Toronto	Not randomised - used historical controls.
Hampton-Chicago	Intervention: Assertive Community Treatment.
Herz-New York	Not case management. Brief hospitalization vs standard hospital care.
Hornstra-Kansas	Not randomised - historical controls.

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Hoult-Sydney	Intervention: Assertive Community Treatment.
Jerrell-SCarolina	There was no standard care control group. Comparisons were made against: 12 step recovery program and behavioural skills training.
Knight-Los Angeles	Not randomised - quasi-experimental design.
Kuldau-California	Not case management. Rapid discharge vs hospital care.
Lafave-Ontario	Intervention: Assertive Community Treatment.
Langsley-Denver	Not case management. Out patient family crisis management vs hospital admission.
Lehman-Maryland	Intervention: Intensive case management (non-ACT, staff/patient ratio 1:15) compared with lower intensity case management (staff/patient ratio 1:25).
Martin-Delaware	Intervention: Assertive Community Treatment.
Marx-Madison	Intervention: Assertive Community Treatment.
McFarlane-New York	No standard care control group. Intervention: Assertive Community Treatment. Randomisation unclear.
McGowan-California	Not a randomised controlled trial. Control and treatment groups were "randomly selected" from the population of patients already receiving the intervention or standard care.
McGrew-Indiana	Not a randomised controlled trial. Was a before and after design which exam effects of implementing ACT teams in 6 sites in Indiana.
Merson-London	No standard care control. Multi disciplinary team home treatment vs emergency assessment at hospital.
Modcrin-Kansas	No standard care control. Strengths model of case management vs standard case management.
Morse-St Louis1	Intervention: Assertive Community Treatment.
Morse-St Louis2	Intervention: Compared two forms of ACT with brokered case management. No standard care control group.

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Mosher-San Francisco	Alternative assignment. Not case management. "Home-like" facility vs hospital admission.
Muijen-London1	Trial of Assertive community treatment as an alternative to acute admission to a psychiatric hospital. Will be eligible for a planned third comparison.
Mulder-Missouri	Intervention: Assertive Community Treatment.
Pai-Bangalore	Not randomised - alternative assignment.
Polak-Denver	Not case management. Admission to small "community-based therapeutic environments" vs standard hospital care.
Reibel-Manhattan	Not case management. Intervention: brief hospital admission.
Rosenheck-USA-10site	Intervention: Assertive Community Treatment.
Rossler-Mannheim1	Not randomised - case control study.
Rossler-Mannheim2	Not randomised - case control study.
Santiago-Arizona	Interventions 1. Standard care: routine care from the psychiatric services. 2. Case management: Treatment Network Team (TNT) which appears to be an intensive form of clinical case management with a particular emphasis on reducing patients' social isolation. Ratio: unclear. Outcomes Unable to use all outcomes. Lost to follow up (numbers unclear). Severity of social problems (PAS - no SD). Social functioning (GAS - SD). Social networks (SRS - SD). Note: Not clear how closely TNT resembles case management. Seems to be a special emphasis on working with participant's 'significant others' and engaging them in treatment planning. It appears to have some characteristics of a psychosocial/ family therapy type of intervention.
Solomon-Philadelphia1	Intervention: Both groups given some form of case management. No appropriate control.
Stein-Madison	Trial of Assertive community treatment versus acute admission to a psychiatric hospital. Will be eligible for a planned third comparison in this review.

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Susser-New York	Intervention: Critical Time . This is a new intervention with distinct differences to case management. Key worker is involved for a short time only, in this case following discharge from a specialist hostel. The key worker does not attempt to "meet the patient's needs" because this is thought to foster dependency. Instead, the key worker attempts to set up a network of support that will maintain the patient once the key worker has withdrawn.
Teague-New Hamps	Not a randomised controlled trial. Compared ACT teams to CM teams in terms of fidelity to the ACT model. No actual follow up of patients.
Test-Wisconsin	Intervention: Assertive Community Treatment.
Thornicroft-Baltim	Not randomised.
Toro-Buffalo	The primary reason for exclusion was that whilst the study was a randomised controlled trial, only 20% of the participants were suffering from a severe mental disorder. A secondary reason for exclusion was that follow up rates were less than 50%. It was also unclear whether the intervention was ACT or intensive case management. Individual patient data on the mentally ill sub-group would be eligible for inclusion if available.
Vincent-Cleveland	Not randomised - alternative assignment.
Wood-New Zealand	Case control study, not an RCT.