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Improving outcomes for people in mental health crisis: a rapid synthesis of the evidence for available models of care

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Abstract

Improving outcomes for people in mental health crisis: a rapid synthesis of the evidence for available models of care

Fiona Paton,[1] Kath Wright,[1] Nigel Ayre,[2] Ceri Dare,[3] Sonia Johnson,[4] Brynmor Lloyd-Evans,[4] Alan Simpson,[5] Martin Webber[6] and Nick Meader[1]*

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Background: Crisis Concordat was established to improve outcomes for people experiencing a mental health crisis. The Crisis Concordat sets out four stages of the crisis care pathway: (1) access to support before crisis point; (2) urgent and emergency access to crisis care; (3) quality treatment and care in crisis; and (4) promoting recovery.

Objectives: To evaluate the clinical effectiveness and cost-effectiveness of the models of care for improving outcomes at each stage of the care pathway.

Data sources: Electronic databases were searched for guidelines, reviews and, where necessary, primary studies. The searches were performed on 25 and 26 June 2014 for NHS Evidence, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, NHS Economic Evaluation Database, and the Health Technology Assessment (HTA) and PROSPERO databases, and on 11 November 2014 for MEDLINE, PsycINFO and the Criminal Justice Abstracts database. Relevant reports and reference lists of retrieved articles were scanned to identify additional studies.

Study selection: When guidelines covered a topic comprehensively, further literature was not assessed; however, where there were gaps, systematic reviews and then primary studies were assessed in order of priority.

Study appraisal and synthesis methods: Systematic reviews were critically appraised using the Risk Of Bias In Systematic reviews assessment tool, trials were assessed using the Cochrane risk-of-bias tool, studies without a control group were assessed using the National Institute for Health and Care Excellence (NICE) prognostic studies tool and qualitative studies were assessed using the Critical Appraisal Skills Programme quality assessment tool. A narrative synthesis was conducted for each stage of the care pathway structured according to the type of care model assessed. The type and range of evidence identified precluded the use of meta-analysis.

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Results and limitations: One review of reviews, six systematic reviews, nine guidelines and 15 primary studies were included. There was very limited evidence for access to support before crisis point. There was evidence of benefits for liaison psychiatry teams in improving service-related outcomes in emergency departments, but this was often limited by potential confounding in most studies. There was limited evidence regarding models to improve urgent and emergency access to crisis care to guide police officers in their Mental Health Act responsibilities. There was positive evidence on clinical effectiveness and cost-effectiveness of crisis resolution teams but variability in implementation. Current work from the Crisis resolution team Optimisation and RElapse prevention study aims to improve fidelity in delivering these models. Crisis houses and acute day hospital care are also currently recommended by NICE. There was a large evidence base on promoting recovery with a range of interventions recommended by NICE likely to be important in helping people stay well.

Conclusions and implications: Most evidence was rated as low or very low quality, but this partly reflects the difficulty of conducting research into complex interventions for people in a mental health crisis and does not imply that all research was poorly conducted. However, there are currently important gaps in research for a number of stages of the crisis care pathway. Particular gaps in research on access to support before crisis point and urgent and emergency access to crisis care were found. In addition, more high-quality research is needed on the clinical effectiveness and cost-effectiveness of mental health crisis care, including effective components of inpatient care, post-discharge transitional care and Community Mental Health Teams/intensive case management teams.

Study registration: This study is registered as PROSPERO CRD42014013279.

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List of abbreviations

A&E	accident and emergency
ACT	assertive community treatment
BME	black and minority ethnic
BPD	borderline personality disorder
CBT	cognitive–behavioural therapy
CI	confidence interval
CIT	crisis intervention team
CMHT	Community Mental Health Team
CORE	Crisis resolution team Optimisation and RElapse prevention
CQC	Care Quality Commission
CRD	Centre for Reviews and Dissemination
CRHTT	crisis resolution and home treatment team
CRT	crisis resolution team
DARE	Database of Abstracts of Reviews of Effects
DBT	dialectical behaviour therapy
DH	Department of Health
DUP	duration of untreated psychosis
ED	emergency department
EIS	early intervention service
FEP	first-episode psychosis
GP	general practitioner
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HR	hazard ratio
HTA	Health Technology Assessment
IAPT	Improving Access to Psychological Treatment
ICER	incremental cost-effectiveness ratio
ICM	intensive case management
IPS	individual placement and support
JCP	joint crisis plan
LGBT	lesbian, gay, bisexual and transgender
MBCT	mindfulness-based cognitive therapy
MBT	mentalisation-based therapy
MHIT	mental health intervention team
NCCMH	National Collaborating Centre for Mental Health
NHS EED	NHS Economic Evaluation Database
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
OR	odds ratio
PANSS	Positive And Negative Syndrome Scale
PSS	Personal Social Services
QALY	quality-adjusted life-year
RAID	rapid assessment interface and discharge
RCT	randomised controlled trial
RR	risk ratio
SD	standard deviation
SMD	standardised mean difference
UCL	University College London

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Plain English summary

What was the problem/question?

The Crisis Concordat (a national agreement between services involved in care and support of people in crisis) suggests four stages of care: (1) support before crisis point; (2) urgent and emergency access to crisis care; (3) quality treatment and care when in crisis; and (4) promoting recovery. We examined evidence on how well different services work for each of these four stages.

What did we do?

We looked at evidence on effectiveness of services from guidelines, reviews of studies and individual studies. We also examined experiences of these services.

What did we find?

There was very little evidence for the effectiveness of services provided before crisis.

It was inconclusive what services were best for improving emergency access to crisis care in accident and emergency and for helping the police with their responsibilities under the Mental Health Act 1983.

Crisis teams work well, but each area has different types of services. Ongoing work is seeking to ensure the best services happen consistently across the country. Crisis houses and acute day hospitals are also important alternatives to inpatient treatment.

There are a range of services that help people with mental health symptoms. One important area is building the strengths of individuals through things such as help with getting/keeping a job or providing people with the support they need to help themselves.

What does this mean?

There is need for more work to see what helps best to stop people reaching crisis point and also what help is best when they reach crisis. There also needs more work looking at how people can recover better when attending a specialist mental health hospital.

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Scientific summary

Background

Challenges of mental health crisis services

It is widely acknowledged that the quality and accessibility of care for people in crisis is highly variable. Although many people in a mental health crisis experience high-quality care and support when they need it, there are also a number of occasions when people find that services do not respond well to their needs.

It is also often recognised that emergency services related to mental health can sometimes compare unfavourably with those related to emergency physical health services. Therefore, it is a priority to improve crisis services for people with mental health problems in order to meet the objectives of parity of esteem set out in the NHS Mandate.

The NHS mandate for 2014/15 identified several objectives for mental health crisis services including accessibility and quality of emergency mental health care, improving liaison psychiatric services, and for every community to plan to have sufficient resources available for crisis care.

In addition, NHS planning guidance 2015/16 listed the following criteria as essential for the appropriate support of people experiencing a mental health crisis: mental health support as integral to NHS 111 services; 24/7 crisis care home treatment teams; and enough capacity to prevent children, young people or vulnerable adults receiving mental health assessment in police cells.

In response to these issues the Mental Health Crisis Care Concordat, *Improving Outcomes for People Experiencing Mental Health Crisis,* was developed, which highlighted the need for a review of urgent and emergency care, with a focus on models of care for people in mental health crisis.

It has long been recognised that improvements are needed in how health services, social services and police forces work together. Where problems exist, they often happen where these services intersect, concern how the different professional groups interact with one another and transfer from one service to another.

The Mental Health Crisis Care Concordat also highlighted the disproportionate rate at which some communities reach crisis point or access mental health services through involvement with the criminal justice system. Black service users were detained at higher rates under the Mental Health Act 1983 and a higher proportion were admitted to hospital. Although recent research suggests, when analyses are adjusted for confounding, ethnicity is no longer a predictor of detention under the Mental Health Act.

An independent inquiry into crisis care, carried out by Mind in 2010/11 as part of a Crisis Care Campaign, suggested that people from some black and ethnic minority (BME) groups seemed to be treated more neglectfully or coercively in the crisis care system than other people. The inquiry also highlighted certain barriers that may be faced by different ethnic groups in relation to accessing crisis care:

- There is variable access to crisis resolution and home treatment teams (CRHTTs), with lowest referral rates identified for Indian, Bangladeshi and Chinese people.
- Once assessed by a CRHTT, BME groups are generally more likely to be admitted to hospital, particularly black Caribbean people.

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Crisis care pathway

The Crisis Concordat proposed four key stages of the mental health crisis care pathway:

1. Access to support before crisis point: the provision of readily accessible support 24 hours a day and 7 days a week. This is for people who are close to crisis and need quick access to support that may help prevent escalation of their problems.
2. Urgent and emergency access to crisis care: when people need emergency help related to their mental health needs when in crisis. The emphasis is on treatment being accessed urgently and with respect in a similar manner to a physical health emergency.
3. Quality of treatment and care when in crisis: the provision of support and treatment for people in mental health crisis. Effective treatment is provided by competent practitioners, who focus on the service user's recovery, and is provided in a setting that best suits their needs.
4. Promoting recovery/preventing future crises: the provision of services that will support the process of recovery for people with mental health problems and help them stay well.

Objectives

The aim of the Crisis Concordat is to improve the quality and accessibility of services for the four key stages of the mental health crisis pathway. Therefore, our review aims to conduct a rapid evidence synthesis evaluating the clinical effectiveness and cost-effectiveness of models of care at each of the four stages identified by the Crisis Concordat.

We hope this will help inform the provision of effective mental health crisis services in England and highlight key uncertainties regarding effectiveness of models of care where future research is a priority.

Methods

Electronic databases were searched for guidelines, reviews and, where necessary, primary studies. The searches were performed on 25 and 26 June 2014 for NHS Evidence, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, NHS Economic Evaluation Database, and the Health Technology Assessment (HTA) and PROSPERO databases, and on 11 November 2014 for MEDLINE, PsycINFO and the Criminal Justice Abstracts database. Relevant reports and reference lists of retrieved articles were scanned to identify additional studies.

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Relevant evidence was included in the synthesis according to the following hierarchy [with preference given in ascending order (1–4)]:

1. Guidelines: guidelines produced or accredited by the National Institute for Health and Care Excellence (NICE). This included UK guidelines produced by NICE or by UK bodies accredited by NICE such as the Royal College of Physicians. It also included guidelines produced in English by non-UK guidance producers who had received NICE accreditation.
2. Systematic reviews of reviews.
3. Systematic reviews of primary studies and economic evaluations.
4. Good-quality primary studies: when no relevant guidelines, reviews of reviews, or systematic reviews of primary studies were available, we included primary studies (both randomised and non-randomised controlled trials).

Results

Access to support before crisis point

Studies across a range of disorders suggest telephone support and triage appear to result in quick access, acceptable referral decisions and minimal harm. However, at present there are very few data in relation to the use of telephone support and triage for providing support to people before the point of mental health crisis.

In addition, studies that have assessed the benefits of training and supporting primary care and community-based staff have not identified any models that clearly benefit service user outcomes.

Recommendations by NICE on access to support before crisis point are derived mainly from expert consensus and overlap largely with recommendations from the Crisis Concordat and the London Strategic Network commissioning guide. These include the importance of receiving care with a minimum of delay, the importance of quick referral (either through self-referral or building links between mental health services, primary care and third-sector organisations) and equality of access.

Urgent and emergency access to crisis care

There is limited quantitative evidence on the clinical effectiveness of interventions to improve urgent and emergency access to crisis care. Most studies were on liaison psychiatry models that were associated with reduced readmission rates, reduced waiting times (in most studies) and improved service user satisfaction. However, there was a lack of high-quality well-controlled trials and, for most studies, it was not possible to rule out the potential for confounding. There was less evidence on the benefits of providing mental health training to emergency department staff.

The evidence was even more limited regarding the provision of support from mental health professionals to police officers, either through training programmes, street triage or telephone triage. Street triage and training of police officers both appeared to reduce police time at the scene of mental health-related incidents. Street triage may also potentially improve service user engagement with outpatient treatment services. Police officers with mental health training were more likely to transport people to a health-care setting and less likely to arrest people with potential mental health problems. However, there was no evidence that either street triage or mental health training reduced level of force used by police officers in mental health-related calls.

Quality treatment and care in crisis

Crisis resolution and home treatment teams were found to be both clinically effective and cost-effective with benefits including substantial reductions in the probability of hospital admission and greater service user satisfaction compared with inpatient treatment. However, the quality of evidence was rated low because of the small number of studies, a high risk of bias in included studies and high heterogeneity.

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Reviews of factors affecting clinical effectiveness and cost-effectiveness of CRHTTs found a great deal of variability when implementing these interventions. Although there were examples of good practice in the UK regarding various elements of CRHTT care it appears that few teams were exhibiting good practice across a comprehensive range of criteria.

Crisis houses and acute day hospitals were not found to be more clinically effective than inpatient treatment. However, it should be noted that there is no evidence that crisis houses and acute day hospitals are associated with greater readmissions and are recommended by NICE as viable alternatives to inpatient treatment. In addition, there is evidence that crisis houses are associated with greater service user satisfaction in both quantitative and qualitative studies.

In terms of conflict and containment in inpatient mental health services, the evidence was largely based on descriptive studies with few controlled trials. The Safewards model has been suggested as a foundation for future research on inpatient treatment. They propose six factors that influence conflict and containment: (1) staff team; (2) physical environment; (3) outside hospital; (4) patient community; (5) patient characteristics; and (6) regulatory framework. A recent cluster randomised trial has been completed based on the Safewards model and found reductions in conflict and containment versus controls.

Promoting recovery/preventing future crises

Promoting recovery and staying well covers a large and diverse literature. We have sought to review this literature primarily by drawing on systematic reviews of interventions recommended by NICE mental health guidelines.

For all other stages of the care pathway we only included service models. However, we also included individual-level interventions on promoting recovery to reflect the emphasis of these interventions in the Crisis Care Concordat and also feedback provided by service user members of the advisory group.

There are a large number of effective interventions for promoting recovery and preventing relapse recommended by NICE. These include service models [e.g. early intervention services (EISs)], pharmacological interventions (e.g. antidepressants for people with depression and antipsychotics for people with psychosis), individual-level interventions to prevent relapse of mental health conditions [e.g. cognitive–behavioural therapy (CBT) for people with psychosis, family intervention for people with psychosis, dialectical behaviour therapy (DBT) for people with borderline personality disorder (BPD)] and strengths-based interventions to promote recovery (e.g. self-management and supported employment).

Limitations

A common limitation across all four major elements of the care pathway was a general lack of rigorous randomised and cluster randomised trials evaluating models of mental health crisis care. Further high-quality trials conducted in the UK would have a considerable impact on reducing uncertainty regarding what are the most effective models of care for people experiencing mental health crisis.

Conclusions

Implications for practice

Access to support before crisis point

- Services should ensure that people at risk of mental health crisis receive care with minimum delay, receive quick referral (either through self-referral or building links between services) and that there is equality of access to such care.

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Urgent and emergency access to crisis care

- Although there is evidence of benefits for liaison psychiatry teams in improving waiting times and reducing readmission this is largely based on uncontrolled studies and a lack of data from the UK.

Quality treatment and care in crisis

- Crisis resolution teams (CRTs) are more effective than inpatient care for a range of outcomes, although implementation of this model of care varies across the UK with few teams meeting all evidence-based criteria for good practice.
- Crisis houses and acute day hospitals appear as clinically effective as inpatient treatment but are associated with greater service user satisfaction.

Promoting recovery

- Effective service models include EISs for people with psychosis and other serious mental illnesses, and collaborative care for depression (particularly for people with chronic physical health problems).
- Effective pharmacological interventions include antidepressants for people with depression, lithium for people with bipolar disorder and antipsychotics for people with psychosis.
- Effective individual-level strengths-based interventions include self-management and supported employment. There is also some evidence for benefit for peer support (but this needs further high-quality research to validate these findings).
- Individual-level interventions with evidence of benefit include for people:
  - with psychosis – CBT, family interventions
  - with bipolar disorder – psychological interventions
  - who self-harm – psychological interventions
  - with BPD – DBT and mentalisation-based therapy
  - with depression – CBT (particularly mindfulness-based cognitive therapy).
- Crisis planning is currently recommended by NICE, although more recent research has raised questions regarding the clinical effectiveness of this intervention; therefore, further research is needed on whether or not this is an effective approach to promoting recovery.

Recommendations for research

Access to support before crisis point

- Most current recommendations and service developments are based on expert opinion with limited research in this area. Rigorous evaluation of current service developments are needed to ensure evidence-based and effective support for service users.

Urgent and emergency access to crisis care

- Potential benefits of liaison psychiatry teams are based on limited evidence; therefore, confirmation of the clinical effectiveness of these models of care in high-quality trials (e.g. cluster randomised trials) is needed.
- Data on clinical effectiveness and cost-effectiveness of mental health training of police officers, street triage and telephone triage to assist police officers with potentially mental health-related incidents is very limited and requires rigorous high-quality evaluation.

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Quality treatment and care in crisis

- Current work from the Crisis resolution team Optimisation and RElapse prevention study aims to improve implementation of good practice in CRTs and is an important component of improving the quality of treatment for people in crisis.
- Further work is needed to examine the effectiveness of various aspects of inpatient care on service user outcomes.

Promoting recovery

- Many of the key service models to provide long-term management and treatment of mental health problems lack a clear evidence base (e.g. Community Mental Health Teams, intensive case management); therefore, further developments are needed.
- There is a key need to develop models of care that reduce self-harm, suicide and relapse after discharge from crisis services and inpatient treatment.
- Large-scale studies are currently under way to investigate the effectiveness of peer support, which is a key area of uncertainty.
- Interventions on improving social networks and social capital are also important developments currently being evaluated in the UK.
- Interventions to promote equality of access to mental health services for BME populations are needed.

Study registration

This study is registered as PROSPERO CRD42014013279.

Funding

The National Institute for Health Research HTA programme.

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Chapter 1 Background

Definition

There are many definitions of mental health crisis. For example, a pragmatic service-oriented approach:

> *Crisis brings the service user to the attention of crisis services for example through the relapse of an existing mental health condition. This results in a substantial impact on the life of the service user and their social network.*
>
> *Joint Commissioning Panel for Mental Health*[1]

Various other approaches include self-definitions of mental health crisis (i.e. the service user themselves defines their experience and recovery), a risk-focused definition (i.e. people at risk of harming themselves or others), theoretical definitions, and negotiated definitions (i.e. a decision reached collaboratively between service user, carer or professional).

Challenges of mental health crisis services

It is widely acknowledged that the quality and accessibility of care for people in crisis is highly variable.[2] Although many people in mental health crisis experience high-quality care and support when they need it, there are also a number of occasions where people find services do not respond well to their needs.[3]

It is also often recognised that emergency services related to mental health treatment compare unfavourably with those related to emergency physical health services.[2] Therefore, it is a priority to improve crisis services for people with mental health problems in order to meet the objectives of parity of esteem set out in the NHS mandate.

The NHS mandate for 2014/15 identified several objectives for mental health crisis services including accessibility and quality of emergency mental health care, improving liaison psychiatric services, and for every community to plan to have sufficient resources available for crisis care.[4]

In response to these issues, the Mental Health Crisis Care Concordat, *Improving Outcomes for People Experiencing Mental Health Crisis*, was developed which highlighted the need for a review of urgent and emergency care, with a focus on models of care for people in mental health crisis.[3]

It has long been recognised that improvements are required in how health services, social services and police forces work together. Where problems exist, they often happen where these services intersect, concern how the different professional groups interact with one another and transfer from one service to another.[3]

The Mental Health Crisis Care Concordat also highlighted the disproportionate rate at which some communities reach crisis point or access mental health services through involvement with the criminal justice system. People in black and minority ethnic (BME) communities were detained at higher rates under the Mental Health Act 1983[5] and a higher proportion admitted to hospital.[3] An independent inquiry into crisis care, carried out by Mind in 2010/11,[6] as part of a crisis care campaign, suggested that people from

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some BME groups seemed to be treated more neglectfully or coercively in the crisis care system than other people. The inquiry also highlighted certain barriers that might be faced by different ethnic groups in relation to accessing crisis care:

- There is variable access to crisis resolution and home teams, with lowest referral rates identified for Indian, Bangladeshi and Chinese people.
- Once assessed by a crisis resolution and home team, BME groups are generally more likely to be admitted to hospital, particularly black Caribbean people.[6]
- Another population where there was need for improvement in crisis services is women with antenatal and postnatal mental health problems. For example, most women with psychosis in the postnatal period will experience readmission owing to a non-puerperal recurrence. For example, in a Danish study, a year after discharge 50% of women had been readmitted and 98%, in total, experienced another episode of psychosis.[7]

The National Collaborating Centre for Mental Health (NCCMH)[7] conducted a survey of primary care trusts in England and Wales, which found that just over half the trusts had an identified clinical lead or manager and a similar number had a protocol for the care of women with an existing disorder. It estimated that only 25% of primary care trusts had a fully developed and implemented policy for antenatal and postnatal mental health care.

The literature on antenatal and postnatal mental health services has been reviewed comprehensively in a forthcoming National Institute for Health and Care Excellence (NICE) guideline; therefore, these data will not be not reviewed here (for further details see *Antenatal and Postnatal Health. Clinical Management and Service Guidance. Draft for Consultation* by NCCMH[7]).

Crisis care pathway

The Crisis Concordat proposes four key stages of the mental health crisis care pathway, which are discussed in more detail in the next sections:

- *Access to support before crisis point*.
- *Urgent and emergency access to crisis care*.
- *Quality of treatment and care when in crisis*.
- *Recovery and staying well/preventing future crises*.

Access to support before crisis point

Brief policy background in England

The London Strategic Clinical Network[2] has recently put forward four key standards on access to crisis care support that reflect NICE quality standards on service user experience of adult mental health services (see *Quality Standard for Service User Experience in Adult Mental Health* by NICE[8]):

- Mental health crisis telephone helplines: available 24 hours a day, 365 days a year with links to out-of-hours alternatives such as NHS 111.
- Self-referral: people have access to all information needed on crisis management including self-referral.
- Third-sector organisation: engagement with voluntary organisations offers services that complement or are in place of those provided by the statutory sector.
- General practitioner (GP) support and shared learning: training should be provided for GPs, practice nurses and other community staff on crisis assessment and management.

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More broadly, there are statutory requirements of the Local Government and Public Involvement in Health Act 2007 for foundation trusts and local authorities to conduct joint strategic needs assessments of the health and well-being of their local community.[9] This includes targeting the causes of health problems such as mental health crisis in order to intervene early before crisis point.

Brief summary of current practice

Telephone triage services have been set up in England (previously NHS Direct, NHS 111) and in other countries, such as Australia and Canada.

Elsom *et al.*[10] reported service user experiences of a telephone mental health triage service in Australia. Most service users (67%) and carers (66%) were either satisfied or very satisfied with the triage service. The majority reported being treated with dignity and respect, receiving prompt attention and that there was good communication between themselves and the mental health triage nurse. However, there was need for improvement of the service, with 70% having difficulty accessing the triage service, including difficulty finding the triage telephone number or waiting for a call back from the triage nurse. In addition, only a minority of both service users and carers reported being asked about their preferences (for a summary of other international case examples see *Improving Outcomes for People Experiencing Mental Health Crisis* by the Mental Health Crisis Care Concordat[11]).

In terms of current provision, the NHS 111 service is an important national development in aiming to improve access to support before crisis point in England. An evaluation of the benefits of implementing the NHS 111 service is being conducted that includes examining the benefits of sharing crisis plans with NHS 111 and out-of-hours providers, and further evaluations are ongoing in 2015. A number of additional 24/7 crisis helplines exists across the country (see the *London Mental Health Crisis Commissioning Guide*[2] for recent developments) either commissioned or voluntary. In addition, there have been, for many years, a range of listening services that enable access to support before crisis. These include services provided by the Samaritans (www.samaritains.org) and other third-sector organisations using similar models, and student counselling or listening services (such as Nightline; http://nightline.org). Mind[6] also lists a number of other forms of support available, such as crisis houses or other informal support services such as drop-in centres or cafes.

Core competencies of mental health telephone triage services include opening the call, performing mental status examination, risk assessment, planning and action, termination of the call, referral, and reporting and documentation.[12]

Colgate and Jones[13] reported on a telephone-based mental health referral co-ordination process in old age psychiatry in Bridgend, South Wales. The system aimed to identify patient needs in a prompt and accurate manner and provide a preliminary assessment of risk. The advantages of this approach included a single point of access to services, higher degree of consistency in referral patterns and potentially more equitable service delivery. A similar approach was used by that same team in the care home sector, which resulted in a reduction in mental health admissions from local care homes over a 3-year period.[14]

Another approach that could impact on access to support before crisis point is to promote mental health awareness and reduce stigma. For example, the Time-to-Change campaign (http://time-to-change.org.uk) began in England in 2009 and has reached 47 million people through advertising on television, radio, newspapers and online.

Good-quality primary care may have the potential to reduce the risk of experiencing mental health crises. However, a recent UK study found that higher Quality and Outcomes Framework scores were associated with greater risk of emergency admissions. It's unclear whether this association reflects that Quality and Outcomes Framework is a poor measure of quality in primary care, higher-quality primary care does not prevent emergency admissions, or better-quality primary care is more able to identify unmet need for secondary care treatment.[15]

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Potential barriers to accessing support before crisis

This section does not constitute a comprehensive review of barriers to accessing support before crisis, but aims to briefly summarise some key issues reported in the UK.

A key theme identified by Mind[6] was the need to have 'place to go' for respite, safety or other reasons away from home (such as a crisis house) that can help avert a crisis. However, it was commonly reported that such support was rarely available before crisis point.

A more recent report by Mind[16] also noted barriers that prevent BME communities access to mental health care, including different frames of reference and understandings of mental health, language differences, cultural taboos in the community and experiences of racism in the wider community.

A report by St Mungo's[17] highlighted that people who were homeless were among the most marginalised in society. They found many examples of homeless people reporting missed opportunities to receive the right help at the right time, which can be particularly challenging owing to the complex inter-related needs of this population. Homeless women (representing approximately 25% of the homeless population in the UK) may experience further challenges in accessing support, where services are often designed for men. St Mungo's argued for the development of new approaches that better take into account the needs of homeless women in accessing support.

In a review of qualitative studies the NCCMH[18] found that some women reported the responsibilities of providing child care as a barrier to accessing crisis support. Similarly, a survey for St Mungo's[17] of homeless women found that, of their clients who were mothers, 79% had their children taken into care or adopted, often resulting in severe trauma. It should also be acknowledged that there are many initiatives in the UK provided by third-sector organisations that seek to improve access, for example through evening sessions for parents.

The Men's Health Forum manifesto[19] also highlighted the difficulties experienced by men in accessing support early. This may reflect a tendency for men to avoid contact with health-care providers, for example in terms of attending GP appointments and attending NHS health checks. Seeking to facilitate engagement with services at the population level may have implications for suicide rates, given that males are three times more likely to commit suicide than females in the UK, accounting for 80% of all suicides in 2012.[20] However, further research is needed to investigate the benefits of such an approach.

It has also been noted that people with complex needs, such as those with personality disorders, or psychosis, and coexisting substance misuse often experience significant barriers to accessing support and services.[3,18] For example, people with a substance misuse problem may sometimes experience being excluded from receiving psychosis treatment and vice versa. Similarly, people with a personality disorder may experience exclusion from treatment services for comorbid conditions such as depression or anxiety.

Other barriers include stigma, lack of acknowledgement of problems and fear of being hospitalised.[9,21]

Urgent and emergency access to crisis care

Brief summary of policy background in England

In 2013, Sir Bruce Keogh announced a comprehensive review of the NHS urgent emergency care system in England.[4] The Mental Health Crisis Care Concordat has applied these principles to the urgent and emergency access to mental health crisis care.[3] The Concordat action plans and planning groups aim to link up with (or be part of) system resilience groups to feed into the regular planning of service delivery.

A key aspect of urgent and emergency access to crisis care is providing service users and carers with a single point of access to a multidisciplinary mental health team to contact 24 hours a day, 7 days a week.[3]

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This also reflects the NICE quality standards[8] on service user experience in adult mental health. In particular, quality statement 6 states that people should be able to access mental health services when they need them. This includes:

- ensuring people in crisis referred to mental health secondary care services are seen within 4 hours
- service users have access to a local 24-hour helpline staffed by mental health and social care professionals
- ensuring crisis resolution and home treatment teams (CRHTTs) are accessible 24 hours a day, 7 days a week, regardless of diagnosis
- ensuring people who have been admitted to a place of safety are assessed under the Mental Health Act within 4 hours.

The Mandate for 2014/15 outlines specific objectives for the NHS to improve mental health crisis care:[4]

- NHS England to make rapid progress ensuring mental health crisis services are at parity with other health emergency services in terms of accessibility, responsiveness and quality.
- NHS England to ensure there are adequate liaison psychiatry services in emergency departments (EDs).
- Every community to have plans to ensure access to mental health crisis services based on principles required by the Concordat.

In addition, there have been increasing concerns regarding the inappropriate use of restrictive interventions for people with mental health problems and others who present with behaviour that challenges. Recent guidance on positive and proactive care has been issued by the Department of Health (DH) to reduce the need for restrictive interventions.[22]

Police officers in England and Wales are responsible, under Section 136 of the Mental Health Act (1983), to intervene when a person with mental health problems is in immediate need of care or control in a public place (in the interests of that person or the protection of other persons) and take them to a place of safety.[19,23] Section 135 of the Mental Health Act provides a number of examples of places of safety such as a hospital, residential accomodation, a police station.[5]

The place of safety should normally be a health-care setting (preferably a mental health-care setting), but only in very exceptional circumstances a police station.[23] A person may be detained in a place of safety for not exceeding 72 hours to enable an assessment by a registered medical practitioner and approved mental health professional.

Brief summary of current practice

Urgent and emergency access to crisis care needs to be a commissioning-led strategy that works across a range of sectors (such as social care, mental health care, acute care, ambulance services, police, etc.).[23] Values-based commissioning has also been suggested as a promising strategy with service users in collaboration with professional groups commissioning mental health services.[24,25]

Access to crisis care services varies widely across different countries and health-care systems. Current initiatives in England, such as the Sunderland and South of Tyne Initial Response Team, have been developed to seek to improve access to crisis services.[26] Other examples of current service developments can be found in the *London Mental Health Crisis Commissioning Guide*.[2]

An independent inquiry by Mind[6] reported that access to crisis care services across the UK varied in terms of the types of crisis care available, staffing levels and in the range of options available for those who need a safe place to go that is not a hospital.

A review carried out by the Care Quality Commission (CQC)[27,28] reported that some places of safety were working effectively, but that others were not fully complying with the recommended national standards.

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This may impact on people's experiences relating to point of contact and being detained by police, through to being transported to hospital and then transferred to a place of safety before they are assessed under the Mental Health Act.[27,28] Four key areas were identified by the review: (1) too many places of safety were turning people away, which might result in long waits with the police; (2) too many policies did not include young people, people who are intoxicated, and people with disturbed behaviour; (3) commissioners might not be adequately fulfilling their responsibilities; and (4) too many providers of safe places were not adequately monitoring their service provision, making it difficult to evaluate if provision was meeting the needs of people in their local area.[27,28]

Urgent and emergency care services are under great pressure to provide high-quality health care to ensure that people with mental health problems receive the best care. Immediate challenges include capacity issues, such as too many people experiencing a mental health crisis being turned away from health-based places of safety because of a lack of capacity. Some health settings refuse to help people who are intoxicated or exhibiting disturbed behaviour.[29] A report by Her Majesty's Inspectorate of Constabulary/ CQC/Her Majesty's Inspectorate of Prisons found that, depending on the areas sampled, between 6% and 76% of the total number of people detained under Section 136 were taken into police custody.[19,23] The most common reasons were insufficient staff at health-based place of safety, absence of available beds, person had consumed alcohol or the person was displaying (or had a history of) violent behaviour.[19,23]

A recent report by the Independent Commission on Mental Health and Policing identified various shortcomings in police performance regarding systems and procedures as well as behaviours of individual police officers. These shortcomings included Central Communications Command failing to deal effectively with calls in relation to mental health, lack of mental health awareness among staff and lack of training in suicide prevention.[29] In addition, police stations were not designed with the needs of people with acute mental health problems at the forefront: the physical environment might be seen as antitherapeutic, and there could be some delay in contacting appropriate mental health professionals.[24,30]

Improvements in multiagency working between police and health and social care professionals are a key recommendation of recent reports.[23,29] The implementation of a crisis intervention team (CIT) model for police officers has increased over the past decade, particularly in the USA and with some case examples in Australia. Street triage is a more common model in England, where health or social care professionals attend Mental Health Act-related calls to provide triage and assistance to police officers. Alternatively, health- or social-care professionals may provide telephone triage (see Edmondson and Cummins[31] for a recent example in Oldham). The aims of these approaches are to help police officers in dealing with apparent mental health problems and to reduce the number of people taken into police custody under Section 136 as a place of safety.

A further concern relates to the much higher proportion of black service users experiencing police involvement on the pathway to mental health care, found in several systematic reviews. For example, Anderson *et al.*[32] found a twofold increased odds of police involvement for black service users compared with white service users [odds ratio (OR) 2.05, 95% confidence interval (CI) 1.63 to 2.59]. However, a recent UK study of 863 individuals by Singh *et al.*[33] found that when age, diagnosis, risk and level of social support were accounted for, ethnicity no longer remained a predictor of Mental Health Act detention.

Brief summary of service user experience

The NCCMH[18] conducted a review of 133 qualitative studies on the experiences of service users with a range of mental health disorders. They identified waiting times as a key barrier to accessing support. Many service users described having to wait too long for an assessment to receive acute mental health treatment, with some feeling they had to resort to violence to receive treatment.[16]

The NCCMH[18] found that health-care professionals were perceived to be a barrier to accessing services by some and showed a lack of willingness to provide psychological support. Mind[6] also reported that service users felt 'batted away' or 'deflected' from receiving support when needed.

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In addition, the NCCMH[18] also included data from service users reporting their experience of detention under the Mental Health Act. For example, some felt they were not provided with sufficient information and on occasion were unaware they were detained until trying to leave the inpatient ward.

A recent qualitative study,[21] conducted in the UK, investigated the experiences of people who had been involuntarily admitted to psychiatric treatment. The accounts of those who retrospectively agreed that their involuntary admission was right were analysed separately from those who retrospectively thought their involuntary admission was wrong.

Both groups agreed that they did not receive sufficient information and involvement in their treatment decisions.

Those individuals who thought their involuntary admission was right acknowledged that they found it difficult to recognise they needed help when unwell. In addition, they felt they were at risk of harming themselves or others and saw their admissions as necessary to prevent further harm.

Those who thought their involuntary admission was wrong believed they needed help from services, but considered it unnecessarily coercive and an unjust infringement of their human rights.

Mind[6] and the NCCMH[18] both found that people who self-harmed often had traumatic experiences accessing care in EDs, including some staff refusing to use anaesthetic when stitching self-harm wounds. However, there were also positive experiences of supportive staff, particularly in psychiatric liaison services.

Mind[6] conducted an inquiry into crisis services. A key factor mentioned by service users was the need for a 'timely and effective response', 24-hour help, before reaching crisis point to avoid escalation of a crisis. Similar findings were identified in a review of qualitative studies conducted for the purposes of the NICE guideline on experience of mental health services.[18]

Mind[6] found a commonly cited problem was difficulty making contact as a result of either not being able to get through to the crisis teams by telephone or having to wait a long time for someone to visit. Some people found it difficult to express themselves over the telephone, particularly during crisis, and were afraid they would not receive a helpful or supportive response. Therefore, a number of people wanted other options of contact such as text lines.

Quality of treatment and care when in crisis

Policy background in England

The Crisis Concordat states that the function of this element of the care pathway is to provide support and treatment by the right people with the right skills in a setting that suits the service user and their needs.[3]

The London Strategic Clinical Network commissioning guide focuses on two key areas of treatment provision – (1) crisis housing, and (2) CRHTTs – which are primarily aimed at alternatives to inpatient treatment. These priorities on alternatives to inpatient admission reflect some of the downsides of inpatient care including the unpopularity of overcrowded wards, involuntary aspects of mental health care provided there and high costs.[34]

There have also been increasing concerns regarding the inappropriate use of restrictive interventions for people with mental health problems who require crisis care. Recent guidance on positive and proactive care has been issued by the DH to reduce the need for restrictive interventions.[22]

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Current practice: alternatives to inpatient treatment

Home-based alternatives offer the potential benefits of greater autonomy and better preservation of social functioning than if a service user was admitted. In addition, this may enable service users to develop skills, such as involving social networks, for coping with future crises in the community.[34] It has been a national requirement since 2000 for all trusts to develop CRHTTs, although it is no longer mandatory to provide these services. Standards for home treatment teams have recently been developed by the Royal College of Psychiatrists' Centre for Quality Improvement.[35]

The National Confidential Inquiry into Suicide[36] found that the average rate of suicides fell by 18% between the first and last 2 years of its data. However, the suicide rate (14.6 per 10,000 under crisis care compared with 8.8 per 10,000 admissions) was almost twice as high as that found in inpatient treatment.[37] There was also evidence that people with greater social deprivation were less likely to have positive outcomes when receiving care from crisis resolution teams (CRTs).[37,38]

Home treatment during a crisis may not always be possible; therefore, other community residential services (such as crisis houses) may be of benefit for people in crisis and are recommended by NICE as an alternative to inpatient admission.[34] Crisis houses are popular with service users and are often viewed as more calm and personal than inpatient wards.[6]

Current practice: inpatient treatment

Although service users may often prefer alternatives, inpatient treatment is still sometimes needed and requested when providing crisis treatment. Bowers *et al.*[39] argued that, based on current UK practice, there are four elements that distinguish inpatient treatment from that provided in community services: (1) legitimate authority; (2) presence; (3) containment; and (4) treatment and management.

Once admitted, the service user is under the legitimate authority and control of the inpatient staff. This authority provides staff with the ability to readily persuade and sometimes compel service users to engage with treatment, adhere to medication, etc.

The 24-hours-a-day, 7-days-a-week presence of staff (which Bowers *et al.*[39] referred to as 'presence+') has a number of benefits, including providing continuous multidisciplinary care and the ability to provide more intensive and more risky treatments that require a high level of monitoring.

In addition, inpatient services allow for the containment of the service user in order to reduce the risk to self and others. This is achieved through three main factors: (1) intrusion (breaking usual norms of privacy, bodily integrity, etc.); (2) separation (from people or objects); and (3) restriction (of freedom of physical movement).

Treatment and management includes delivering the 'primary admission task', which is based on the rationale for admission. For example, if the reason for admission was risk then the primary aim is to keep the service user or others safe. There are also secondary tasks such as being able to tackle long-standing problems that although not necessarily the reason for admission might have an important role in promoting recovery. Finally, staff also must seek to ensure admission does not result in harm or negative side effects for the service user (e.g. institutionalisation, loss of job or welfare benefit problems).

Discharge from hospital can be a particular challenge. According to the National Confidential Inquiry into Suicide, 19% of all patient suicides are accounted for by suicides occurring 3 months post discharge from inpatient care.[36] Most post-discharge suicides occurred 2 weeks after leaving hospital; therefore, reducing self-harm and suicide post discharge is a key priority.

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Current experiences of treatment and care in crisis

Crisis resolution and home treatment teams

Mind[6] found that there were many positive experiences of CRHTTs, but also a number of frustrations. An expressed concern for those who wanted to go into hospital was that they often saw CRHTTs as obstructive, setting high thresholds for access to hospital. Others mentioned high thresholds for receiving CRHTT services.

The need for multiple assessments owing to a lack of information sharing and access to records out of hours was also a major complaint by service users. This was very hard for service users, who had to demonstrate their need for help multiple times in order to access services.

Inpatient wards

Mind[6] reported that many people gave examples of receiving good hospital care. Many spoke of kind and supportive staff, being treated with respect and efforts to make the wards homely and relaxing.

However, the majority of comments about hospitals were negative. Some felt that the wards were just holding and containing them without trying to treat the cause of their problems (e.g. a lack of access to psychological therapies or one-to-one conversations with support workers). Similar themes were identified by the NCCMH[18] in their review of the qualitative literature relating to the need for therapeutic relationships during inpatient care and how this was often lacking. The NCCMH[18] and Mind[6] both found that there was often a perceived unavailability of staff because of either busyness or apathy.

Boredom was also a key source of frustration, and a lack of structure led people to feel anxious (particularly people with learning disabilities). Both Mind[6] and the NCCMH[18] found that many reported a lack of scheduled activities led to boredom, which led to some service users 'acting out'. Consistent with this qualitative data, a cross-sectional study in the UK found that more intense programmes of service user activities were associated with reduced self-harm.[39]

Mind[6] also found that lack of safety was a key concern for many service users. The problems of mixed-sex wards and adolescent service users being treated in adult wards were common causes of stress and anxiety.[6,18]

A lack of capacity (lack of inpatient beds and high occupancy rates) was also a significant issue for many service users.[6] This led to overcrowding and frequently having to move from ward to ward.

Crisis houses

There were many positive comments about crisis houses and the need for more to be available.[6] People liked that crisis houses were smaller than inpatient wards and felt calmer and more personal. There was a perception of a better environment and sense of mutual support in contrast to the feelings of boredom and frustration often found on hospital wards.

However, some people mentioned not receiving adequate support when in a crisis house and the need for extended emotional support when leaving.[6]

Recovery and staying well/preventing future crises

Brief policy background in England

The two main emphases of the Crisis Concordat on this stage of the care pathway are on crisis planning, and providing services to support recovery and staying well.[3] The London Strategic Clinical Network,[1] in their commissioning guide for crisis services, similarly suggested the need for integrated care and adopting a holistic approach to promoting recovery.

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The importance of effective transitions between services (e.g. between children and young people's and adult services, or adult and older adult services) has been noted in the recent CQC standards.[28] They also emphasised the need for integrated working to promote recovery and well-being and to prevent or respond appropriately to crisis.

Current practice

Many of the fundamental concepts of recovery originated from the work of service users, and organisations representing service users, and have been influential on mental health treatment and services. Promoting recovery includes the treatment of the mental health condition to improve quality of life of service users through reduction of symptoms of the mental health condition, preventing relapse and improving social functioning. Interventions recommended by NICE across a range of conditions are important for improving recovery. Examples of such services might include early intervention services (EISs) and improving access to psychological treatment services.

Leamy *et al.*,[40] based on a systematic review of the recovery literature, developed a conceptual framework of personal recovery based on five categories: (1) connectedness; (2) hope and optimism about the future; (3) identity; (4) meaning in life; and (5) empowerment.

Priebe *et al.*[41] have also conceptually reviewed a number of resource-oriented psychiatric models (such as befriending, peer support, systemic family therapy, therapeutic communities and open dialogue) that seek to tap into the strengths of service users and to utilise their positive personal and social resources.

These strength-based approaches are often provided by third-sector organisations, but are also available in traditional NHS services. Peer support is a particularly important model of promoting recovery, and such programmes have been available primarily through third-sector organisations for many years in the UK, USA, Canada, Australia and New Zealand. Peer support is popular among service users and many call for further availability of such services (e.g. Mind[6]).

Supported employment [such as individual placement and support (IPS)] interventions are also becoming more widely implemented in England and across the UK. This is reflected by NICE guidance, which recommends supported employment.[42] The Centre for Mental Health has also selected 13 sites across England as Centres of Excellence to act as exemplars of how to implement interventions to support people with mental health problems into employment.

In addition, the IPS in Improving Access to Psychological Therapies (IAPT) pilot study is being conducted in four areas of England (Durham/Tees Valley, Wolverhampton, Shropshire/Telford, and Sussex) before being implemented more widely.

Equality of access

Leamy *et al.*[40] found substantial similarity in defining recovery in both ethnic minority and majority populations, but there was a greater emphasis on spirituality/religion and collectivist notions of recovery in ethnic minority accounts of recovery. The importance of spirituality and stigma was also found in service user-led qualitative studies of the experience of black women[43] and ethnic minority men and women.[44] A particularly strong theme that emerged from Kalathil's[43] study was the contribution of oppression and racism to mental distress experienced by black women. Moreover, participants expressed the need for recovery approaches to include support in overcoming such oppression as part of a holistic package of treatment. The impact of discrimination on refugees and other ethnic minority groups was also found in another user-led qualitative study.[44]

There was consistent evidence that both mental distress and recovery needed to be interpreted within the context of identity, race and culture rather than within the conventional Western medical approach. Service users felt discouraged to talk about the influences of race and sexuality [particularly lesbian, gay, bisexual and transgender (LGBT) participants] on their mental distress.[44]

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Differences between ethnic minority and majority communities in terms of access and engagement with mental health and primary care services have received much attention. A number of systematic reviews have found that black service users were less likely to experience GP involvement and more likely to experience police involvement than white service users (e.g. Anderson *et al.*[45]), but no differences were found between service users from an Asian background and white service users.[32] People from BME communities were also less likely to receive psychological interventions.[16] In a survey by Mind,[16] only 10% of BME respondents felt that their cultural needs were taken into account when services were offered (although for most this did not matter).

Experiences of promoting recovery

A recent service user-led study was conducted by Gould[46] on service users' experience of the 2008 Care Programme Approach in promoting recovery, using questionnaires ($n = 81$) and focus groups ($n = 22$).

One of the key findings was that most service users thought there was a large discrepancy between what they defined as recovery and what professionals defined as recovery and that this was unhelpful.

Female participants, as a whole, were less satisfied with services than men, particularly in terms of professionals' unwillingness to accept non-medical explanations of mental distress. African and African Caribbean men and women were even less satisfied with professionals' lack of openness to accept non-medical interpretations. Many felt factors such as racial stereotypes and racist treatment affected their care. However, Asian and Asian British participants' responses did not differ much from participants in general.

Service users advocated an increased emphasis on holistic approaches. They also stressed the need for professionals to move further away from unhelpful emphases on risk and compulsion and to put more focus on rights and control for service users.

Service users mentioned that factors, such as hope, listening, respect, compassion, and humility, when professionals interact with them, were as important as any treatments they received. Although they did report some examples of good practice, they felt there was a great deal of improvement needed.

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Chapter 2 Aims and objectives

The aim of this project was to conduct a rapid synthesis of the evidence on the effectiveness of models of care for providing treatment and support for people experiencing mental health crisis.

The project addressed four main objectives regarding the evaluation of models of care at each of the four stages of the mental health crisis care pathway identified by the Crisis Concordat:[3]

i. access to support before crisis point
ii. urgent and emergency access to crisis care
iii. quality of treatment and care when in crisis
iv. promoting recovery/preventing future crises.

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Chapter 3 Review methods

A rapid review of the best evidence was conducted to inform the aims stated above. The review was undertaken systematically following established principles set out in Centre for Reviews and Dissemination (CRD) guidance for undertaking systematic reviews, adapted for the requirements of a rapid evidence synthesis.[47]

An advisory group of people was formed with expertise in mental health crisis treatment who oversaw all stages of the review. Expertise in the group included psychiatry, psychotherapy, social care, development of mental health crisis services, mental health research and evidence synthesis.

Hearing service users' perspectives on mental health crisis models of care was an important aspect of this report. The advisory group therefore included two service users (Nigel Ayre and Ceri Dare) and the Director of External Relations for Mind (Sophie Corlett). Their input was crucial in ensuring that the needs and views of service users were taken into account throughout the project, including designing the inclusion criteria for the review and commenting on the draft report and the *Plain English summary*. In addition, the Managing Director of National Survivor User Network (Sarah Yiannoullou) provided comments on the draft report.

The methods for the rapid evidence synthesis are summarised in the protocol registered with PROSPERO[48] and discussed in more detail below.

Identification of studies

Search for guidelines and systematic reviews

Literature searching was conducted as an iterative process for each of the pathway components. The first stage identified relevant guidelines using the NHS Evidence search interface and the 'guidance' filter. Systematic reviews were searched for using electronic databases [e.g. the Cochrane Database of Systematic Reviews, the Database of Abstracts of Reviews of Effects (DARE), the NHS Economic Evaluation Database (NHS EED) and the Health Technology Assessment (HTA) database]. Searches were performed on 25 and 26 June 2014. The PROSPERO register was searched to identify unpublished and ongoing systematic reviews. As an additional check the National Institute for Health Research (NIHR) HTA and Health Services and Delivery Research programme webpages were also scanned. For the full search strategy, see *Appendix 1*.

Search results were limited to the time period 1999 (the date of the National Service Framework for Mental Health) to June 2014. No language restrictions were applied to the searches. Where a foreign-language article represented the best evidence available it was translated into English. Reference lists of retrieved articles, reviews and evaluations were scanned to identify additional studies.

Search for primary studies on urgent and emergency access to crisis care

The advisory group identified substantive gaps regarding systematic reviews on urgent and emergency access to crisis care. Primary studies on this topic were searched for with no restrictions on study design using MEDLINE, PsycINFO and the Criminal Justice Abstracts from inception to November 2014. Searches were performed on 11 November 2014. No language restrictions were applied to the searches. Where a foreign-language article represented the best evidence available, it was translated into English. For the full search strategy see *Appendix 1*.

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Study selection

Inclusion criteria: population, intervention, comparator, outcome

Access to support before crisis point

- Population: people with a mental health problem requiring support before crisis point.
- Intervention: telephone helplines, self-referral by service users for treatment, mental health awareness/antistigma programmes.
- Comparator: training for GPs and other general practice staff to improve outcomes for people requiring support before crisis point.
- Outcome: improved access to services before crisis point, self-harm, violence, hospital admission, mental health outcomes.

Emergency access to crisis care

- Population: people with a mental health problem accessing ED care, police, fire, ambulance or other emergency services.
- Intervention: service level interventions (including training) to improve service and service user outcomes for people with mental health problems.
- Comparator: quantitative studies were required to have some form of control, either a separate comparison group or a before-and-after comparison. Studies that only reported quantitative descriptive data were excluded. Qualitative studies were not required to have a comparator, as they were primarily providing data on acceptability rather than clinical effectiveness.
- Outcome: waiting times, hospital admissions, reduction of use of force/restraint, self-harm, violence, mental health outcomes and service user experience.

Quality treatment and care in crisis

Alternatives to inpatient treatment

- Population: people experiencing mental health crisis.
- Intervention: three types of crisis intervention were focused on as alternatives to inpatient treatment:
    - CRHTTs defined as 'any type of crisis-orientated treatment of an acute psychiatric episode by staff with a specific remit to deal with such situations' (p. 508).[34]
    - Crisis houses defined as 'residential alternative to acute admission during crisis' (p. 515).[34]
    - Acute day hospital care defined as 'diagnostic and treatment services for acutely ill individuals who would otherwise be treated in traditional psychiatric inpatient units' (p. 518).[34]
- Comparator: treatment as usual, active control, waitlist, no treatment.
- Outcome: hospital admissions, reduction of use of force/restraint, self-harm, violence, mental health outcomes and service user experience.

Inpatient treatment

- Population: people experiencing mental health crisis.
- Intervention: inpatient mental health treatment.
- Comparator: no restrictions were applied.
- Outcome: hospital admissions, absconding, aggression, conflict, reduction of use of force/restraint, self-harm, violence, mental health outcomes and service user experience.

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Promoting recovery/preventing future crises

- Population: people with mental health problems. Though people who have experienced a mental health crisis are of primary relevance, we acknowledge that most studies will not have reported this as part of their inclusion criteria.
- Intervention: service-level interventions to improve service utilisation and service user outcomes for people with mental health problems.
  In addition, in discussion with the advisory group it was judged appropriate to broaden the scope of interventions to include individual-level interventions to promote recovery and reduce the risk of relapse. This is to reflect that many of the interventions for promoting recovery suggested by the Crisis Care Concordat are conducted at the individual level. This is an extremely broad scope with almost all interventions for mental health conditions potentially relevant. Therefore, in order to make the review manageable within the time and resources of the project we limited such interventions to those recommended in relevant NICE guidance.
  We also examined the effectiveness of interventions to improve access and engagement to mental health treatment for BME groups.
- Comparator: treatment as usual, active interventions, waiting-list and no treatment.
- Outcome: hospital admission, admission under the Mental Health Act,[5] self-harm, violence, relapse, other mental health outcomes (the primary outcome identified in the systematic review), quality of life, employment and education.

Inclusion criteria: study design

Relevant evidence was included in the synthesis according to the following hierarchy (with preference given in ascending order (1–4):

1. Guidelines: guidelines produced or accredited by NICE. This included UK guidelines produced by NICE and by UK bodies accredited by NICE such as the Royal College of Physicians. It also included guidelines produced in English by non-UK guidance producers who had received NICE accreditation.
2. Systematic reviews of reviews.
3. Systematic reviews of primary studies and economic evaluations.
4. Good-quality primary studies: when no relevant guidelines, review of reviews, or systematic reviews of primary studies were not available we included primary studies [both randomised controlled trials (RCTs) and non-RCTs] and economic evaluations.

Data extraction

Studies were managed using EndNote X7 (Thompson Reuters, Philadelphia, PA, USA) and data were extracted in review software (EPPI Reviewer 4.0, EPPI Centre, London, UK). Data extraction forms were designed by two researchers, piloted on a small selection of studies and adjusted as necessary. Data extraction was undertaken by one researcher and checked by another, with discrepancies resolved by consensus or recourse to a third researcher, if necessary. Where necessary, authors were contacted for missing or unclear data.

Quality assessment

Quality assessment of guidelines was based on their NICE accreditation; NICE-accredited guidance meets criteria set out in the Appraisal of Guidelines for Research and Evaluation statement.[49] In addition, we utilised the Grading of Recommendations Assessment, Development and Evaluation (GRADE)[50] ratings concerning strength of evidence provided in the guidelines. Assessment of systematic reviews was based on using the Risk Of Bias In Systematic reviews tool,[51] designed for the critical appraisal of systematic reviews as well as existing critical appraisals provided by DARE and NHS EED. For the appraisal of reviews

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of reviews, we adapted the criteria used to assess systematic reviews. The quality of primary studies was assessed using criteria appropriate to the study design: controlled trials were appraised using the Cochrane risk-of-bias tool, the Critical Appraisal Skills Programme tool[52] was used for qualitative studies and the NICE tool for prognostic studies was used for studies without a control group.[53]

Quality assessment was carried out by one researcher and checked by a second, with discrepancies resolved by consensus or recourse to a third researcher, if necessary.

Data synthesis

A narrative synthesis was structured by the pathway component addressed and the type of care model assessed. The generalisability of the studies to UK practice was considered in relation to both the populations included and the national and local service-level context of model delivery.

The type and range of evidence identified precluded meta-analysis. However, where possible we assessed heterogeneity measured either by the I^2 or Q-statistic as well as visual assessment of the variability of effect estimates and overlap of CIs.

A summary of the most relevant outcomes at each stage of the pathway formed part of the synthesis. Cost-effectiveness evidence was included in the synthesis at each stage of the pathway, but no de novo model of cost-effectiveness was developed.

Following the evidence synthesis, where appropriate, we identified key gaps in the literature and provided recommendations for further primary research.

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Chapter 4 Description of studies

The electronic search for reviews and guidelines was performed on 24 June 2014 for guidelines and on 25 and 26 June 2014 for systematic reviews, yielding 2750 records. After removal of duplicates ($n = 23$) articles were screened and 191 articles were identified as being potentially relevant to the review (*Figure 1* contains study flow information). A third reviewer screened titles and abstracts to confirm study selection, and this resulted in 111 articles being excluded. Fifty-two full-text articles were obtained for full assessment by two reviewers. A further 16 articles were excluded on full assessment owing to the evidence either not being the most relevant to the review or not being of the highest level.

Nine UK guidelines produced by NICE were identified and included in the review as being relevant to mental health care in England and Wales.[34,54–61] Guidelines were published between 2009 and 2014. Mental health conditions, covered by the guidelines, included psychosis in adults, psychosis in young people, psychosis and substance misuse, bipolar disorder, self-harm, borderline personality disorder (BPD), depression in adults, depression in people with chronic physical health problems, and experience of mental health services.

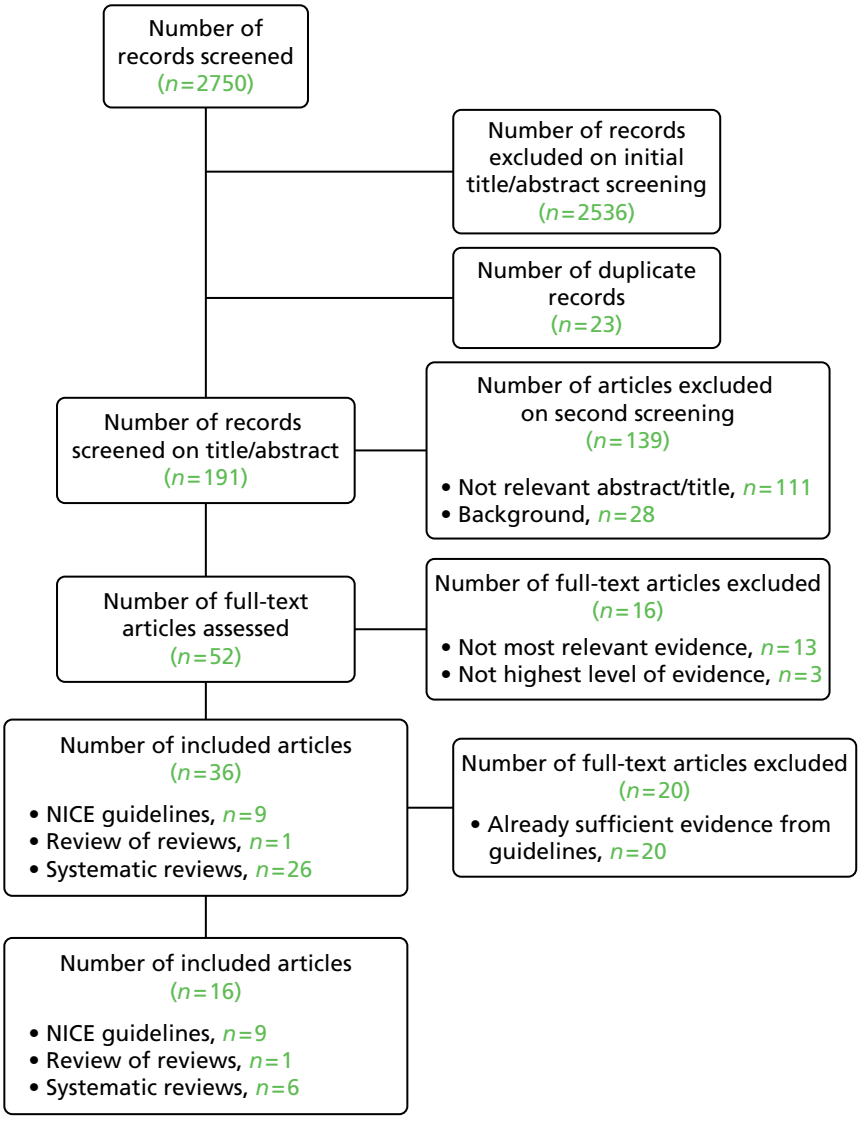

FIGURE 1 Study flow diagram for systematic reviews and guidelines.

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Assessment of the nine guidelines identified comprehensive and up-to-date appraisals of current evidence for many aspects of the review. Therefore, of the 27 reviews identified as relevant to the review criteria [Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, University College London (UCL), 26 January 2015, personal communication],[45,62–84] seven reviews[62–65,76,85,86] were included in the synthesis to supplement the findings of the guidelines. Characteristics for these reviews are provided in *Appendix 2*. Risk-of-bias assessments for systematic reviews and reviews of reviews are summarised below in *Table 1*. As can be seen, most reviews were rated as at low risk of bias, although several were rated at an unclear risk of bias, because of a lack of reporting.

Following the search for guidelines and systematic reviews, consultation with the advisory group identified substantive limitations regarding interventions to improve urgent and emergency access to crisis care. Therefore, we conducted a search in November 2014 for primary studies, which identified 4657 records (after duplicates removed). Full-text articles were obtained for 64 records and 15 studies were included in the synthesis (*Figure 2* shows the study flow diagram). See *Appendix 3* for full study characteristics and risk-of-bias assessments.

TABLE 1 Risk-of-bias assessment for systematic reviews and overviews of reviews

Study	Study eligibility	Study selection	Data collection	Synthesis and findings	Review risk of bias
Archer *et al.*, 2012[62]	Low	Low	Low	Low	Low
Bowers *et al.*, 2014[63]	Unclear	Unclear	Unclear	Unclear	Unclear
Hunt *et al.*, 2013[85]	Low	Low	Low	Low	Low
Ibrahim and Hameed, 2006[86]	Low	Unclear	Low	Unclear	Unclear
Lloyd-Evans *et al.*, 2009[65]	Low	Low	Low	Low	Low
Shepperd *et al.*, 2009[64]	Low	Low	Low	Low	Low
Stoffers *et al.*, 2012[83]	Low	Low	Low	Low	Low

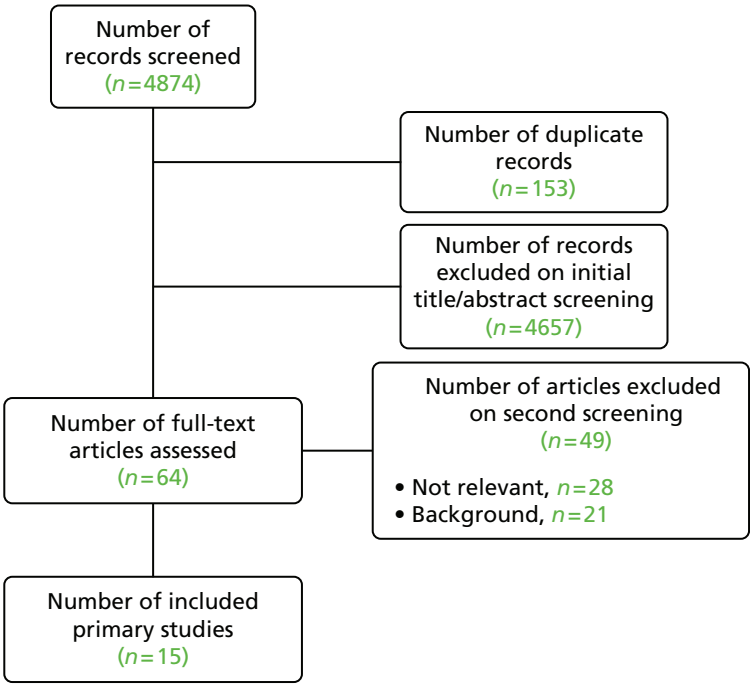

FIGURE 2 Study flow diagram for primary studies.

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Chapter 5 Results of the review

Access to support before crisis point

Telephone helplines

Although reviews of telephone triage across a range of conditions are generally supportive of telephone triage (e.g. CRD,[87,88] Blank *et al.*,[89] Huibers *et al.*,[90] Ismail *et al.*[91] and Ramos-Rios *et al.*[92]), we did not identify any systematic reviews relevant to access to mental health support before crisis point.

Early detection programmes for reducing duration of untreated psychosis

Early access to interventions before crisis point is an important aim of the Crisis Concordat. Early detection programmes aim to reduce the duration of untreated psychosis (DUP), which is associated with poor clinical outcomes and poorer quality of life at first contact with services.

The NCCMH[34] updated an existing review which resulted in 13 studies of 10 early detection programmes (five multifocus public awareness campaigns, three GP education programmes, one specialist EIS and one online education campaign for parents of high school children).

There was no convincing evidence that early detection programmes improved access to support before crisis point. All three GP education programmes impacted on GPs' referral behaviour including being more likely to refer people with first-episode psychosis (FEP) to mental health services, and a reduced time from first contact with GP to referral to EISs. However, these changes in referral behaviour did not translate into a reduction of the DUP. The NCCMH[34] concluded that there was no evidence of benefit for any type of early detection programme in reducing the DUP or increasing presentations of people with FEP to treatment services. We rated the quality of evidence according the GRADE criteria as low because of limitations regarding the risk of bias of the included studies.

Training health-care professionals who work with people who self-harm

There was no convincing evidence that training health-care professionals improved outcomes for people who self-harm. In addition, most studies did not have sufficient controls and so were vulnerable to confounding.

The NCCMH[55] found 18 studies (14 before-and-after studies and four controlled studies) on training health-care professionals who work with people who self-harm. Most studies found a positive effect on knowledge, skills, attitudes and the psychological impact of suicide and self-harm based on self-report data from health-care professionals receiving the training. However, most studies did not report data more directly related to service user outcomes.

There were two studies in the NCCMH review[55] that included training of GPs or general practice staff and provided data on either change in behaviour/practice of staff or service user outcomes. One study examined the impact of a 1-day training course for GPs to recognise and respond to suicidal ideation in young people. The authors compared consultations conducted with 203 service users 6 weeks before the workshop and 220 service users after the workshop. Another study found improved recognition rates of psychological distress (e.g. 48% increased odds of recognition based on the General Health Questionnaire-12 score) and suicidality (e.g. 130% increased odds based on Depressive Symptom Inventory – Suicidality Subscale score). However, no significant changes in GP service user management strategies were found.

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One study conducted a training programme in mental health, primary care and accident and emergency (A&E) departments in Lancashire, UK. Although there was evidence of improvement in staff's ability to conduct risk and needs assessments for people who self-harm, a follow-up study found no differences between suicide rates before (8.8 per 100,000 in 1994–6) and after (8.6 per 100,000 in 1998–2000) the training programme.

The NCCMH[55] concluded that there were multiple limitations to the included studies. First, there were no RCTs and very few controlled studies. Second, most studies assessed self-reported data from health-care professionals on their knowledge and attitudes with very limited data on whether training impacted on the behaviours of health-care professionals and whether or not there were any benefits of this intervention on service user outcomes. A further limitation from the perspective of this review was that such interventions were not aimed specifically at staff support before crisis point but also at providing longer-term care.

On the basis of these conclusions, we rated the quality of evidence according to GRADE criteria as very low.

Mental health awareness/antistigma programmes

We identified two systematic reviews[93,94] and a rapid evidence synthesis[95] on mental health awareness and antistigma programmes. However, none provided data on relevant outcomes regarding accessing services before crisis point.

Urgent and emergency access to crisis care

Nine studies evaluated interventions aimed at improving access to crisis care in the ED (*Table 2*).[96–104] Of these, five were assessing the effectiveness of liaison psychiatry models (a psychiatric nurse, psychiatrist, or liaison psychiatry team providing assessments, support, or triage in the ED).[96–100] Two studies involved providing training to ED staff[101,102] and two studies examined process changes in the ED.[103,104] Two studies were conducted in the UK,[96,99] two in the USA,[97,103] two in Australia,[98,100] one in Germany,[102] one in Canada[104] and one in Switzerland.[101]

TABLE 2 Summary of included studies on ED interventions

Author Country	Study design	Interventions	Comparator	Outcomes
Tadros *et al.*, 2013[96] UK (England) *n* = 6413	Before and after One ED (Birmingham) Follow-up period: 7 months	RAID liaison psychiatry model	Pre RAID (before intervention implemented) RAID-influenced services	Length of stay Readmission rates
Woo *et al.*, 2007[97] USA *n* = 200	Before and after One ED Follow-up period: 12 months	Psychiatric emergency service	Psychiatric consultant to ED	Admission to inpatient unit Waiting time Emergency medication provided Seclusion and restraint Readmission within 30 days

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TABLE 2 Summary of included studies on ED interventions (*continued*)

Author Country	Study design	Interventions	Comparator	Outcomes
McDonough *et al.*, 2004[98] Australia *n* = 604	Before and after One ED Follow-up period: 12 months	Mental health nursing triage service in ED (21.00 to 07.30, 7 nights a week)	Before intervention	Patient contact rate Waiting time
Sinclair *et al.*, 2006[99] UK (Scotland) *n* = 6097	Crossover Two EDs (Glasgow) Follow-up period: 12 months	Psychiatric nursing service in ED	Before intervention	Waiting times Service user satisfaction
Wand *et al.*, 2011[100] Australia *n* = 23	Mixed methods One ED	Psychiatric nurse in ED	None	Service user satisfaction and experiences
Cailhol *et al.*, 2007[101] Switzerland *n* = 479	Before and after One ED Follow-up period: 12 months	ED staff education intervention: • educational programme for physicians, nurses and security staff (e.g. early screening of potential violent behaviour) • regular dialogue and discussion on issues such as restraint • medical presence during security intervention • debriefing	Before intervention	Violent behaviour (limited information on how this is defined) of patients admitted for suicide attempt
Pajonk *et al.*, 2008[102] Germany *n* = 646	Quasi-experimental Two EDs Follow-up period: 12 months	ED staff received an educational intervention	ED staff did not receive an educational intervention	Classification of psychiatric emergency situations Documentation of suicidal behaviour Medication use
Adams and Nielson, 2012[103] USA *n* ≈ 6000	Before and after One ED Follow-up period: 12 months	Process improvement plan for people entering ED with 30 days of inpatient discharge	Before intervention	Readmission rates
Strike *et al.*, 2008[104] Canada *n* = 25	Qualitative One ED	Development of psychiatric assessment rooms	None	Service user experiences

RAID, rapid assessment interface and discharge.

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Service-level interventions to improve urgent and emergency access to crisis care in the emergency department

Psychiatric liaison models

Five studies[97–101] on psychiatric liaison models were identified in our search. Two were conducted in the UK, two in Australia and one in the USA (see *Table 2*).

There was largely positive evidence for the rapid assessment interface and discharge (RAID) model conducted in the UK. Tadros *et al.*[96] investigated the impact of introducing a liaison psychiatry service (RAID) on the mean length of hospital stay. There was a saving of 0.9 bed-days per patient (797 bed-days saved over 8 months) after the implementation of RAID, but this difference was not statistically significant ($p = 0.31$).

However, there was a substantial reduced risk of readmission after RAID had been implemented compared with controls [e.g. RAID vs. pre RAID: hazard ratio (HR) 2.45, 95% CI 2.33 to 2.57], which was estimated to be equivalent to 22 beds saved daily (20 out of the estimated 22 bed-days saved were attributable to geriatric wards).

Tadros *et al.*[96] reported that 113 out of 124 A&E referrals (91%) per month were assessed by RAID within 1 hour (average time 24 minutes), and 788 out of 886 ward referrals (89%) were assessed within 24 hours (average 16 hours).[86,96] RAID led to an increase in the detection and diagnosis of mental illness. Of the referrals to the RAID team, 32% were for self-harm and 9% for psychosis. Some of the biggest increases included an 8% increase in the diagnosis of schizophrenia.[96]

However, this was only based on one before-and-after study. Although analyses were adjusted for confounding these findings need replication with more rigorous study designs (such as cluster RCTs) to reduce the risk of selection bias. Woo *et al.*[97] also investigated the impact of implementing a psychiatric emergency service, but in the USA. They did not find any differences between groups on admission or readmission to inpatient treatment, but there were reductions in waiting times (before, 639 minutes; after, 291 minutes; $p < 0.01$), seclusion and restraint (before, 15%; after, 6%; $p < 0.05$), provision of emergency medication (before, 74%; after, 53%; $p = 0.01$) and elopement (before, 13%; after, 5%; $p = 0.05$). This is largely consistent with the benefits of setting up a psychiatric liaison service found from the RAID study discussed above, but their results are vulnerable to potential confounding.

Three studies investigated the impact of psychiatric nursing services in the ED.[98–100] There was limited evidence of benefit in two Australian studies based on a limited range of outcomes but neither of these was a controlled trial. McDonough *et al.*[98] found a reduction in mean waiting time (before, 235 minutes; after, 36 minutes) and an increase in nightly service user contact rate (before, 2.9; after, 3.75). A mixed-methods study by Wand *et al.*[100] found largely positive feedback about the psychiatric nursing service in the ED, but there was no control group so it was difficult to determine the impact of the intervention.

A study by Sinclair *et al.*[99] in the UK did not find statistically significant differences in waiting times or service user satisfaction associated with a psychiatric nursing service implemented in two EDs.

Providing educational interventions to emergency department staff

Two studies investigated the impact of providing educational interventions to ED staff.[101,102] Neither was conducted in the UK, and it is unclear to what extent they are applicable to UK because of differences in the configuration of emergency services in Germany and Switzerland. In addition, both studies are vulnerable to confounding and, therefore, better-quality study designs are needed to assess the clinical effectiveness of these interventions.

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Cailhol *et al.*[101] found a large reduction in the risk of violent behaviour in people who had accessed the ED because of a suicide attempt [risk ratio (RR) 0.37, 95% CI 0.21 to 0.63]. However, an important limitation concerns the lack of clarity in the paper regarding the definition of violent behaviour.

Pajonk *et al.*[102] compared outcomes in two EDs in two similar cities: one provided access to trained emergency physicians and supporting health professionals, and the other did not.[102] The proportion of correctly identified and documented suicide attempts or suicide ideation was slightly higher in the city that had received the intervention (59.4%) compared with the city where this was not available (50%). However, these figures were still low. Medication use was higher in the control group (OR 1.49, 95% CI 1.04 to 2.14) but physicians who had received the educational intervention were more likely to prescribe medications specifically related to the psychiatric condition.

Other process interventions in the emergency department

Two further studies[103,104] were also identified and it is difficult to conclude the extent to which these findings apply to the UK because of differences in service configuration. In addition, these studies are at high of risk of bias and, therefore, it is difficult to conclude anything from these findings.

Adams and Nielson[103] found that a process improvement plan for people entering the ED within 30 days of psychiatric inpatient discharge reduced the readmission rate from 6.51% to 4.3% in the first 6 months of implementing the changes.

Strike *et al.*[104] investigated service users' experience of the introduction of psychiatric assessment rooms. Many service users reported negative experiences including exacerbated symptoms, loneliness and seclusion.

Service-level interventions to improve urgent and emergency access to crisis care for people in contact with police

Table 3 summarises the studies included in the systematic review on improving urgent and emergency access to crisis care for people in contact with police. Six studies evaluated interventions involving police and their impact on access to crisis care.[31,105–109] Of these, three studies involved police officers receiving intensive mental health training (usually a 40-hour period), two studies examined the impact of triage provided by mental health professionals, and one study compared outcomes for different models of collaboration between police and mental health professionals being provided in different local areas. One study was conducted in the UK,[31] three in the USA,[106–108] one in Australia[109] and one in Canada.[105]

Street triage or telephone triage by health- or social-care professionals in collaboration with police officers

Three studies were identified: one conducted in the UK,[31] one in Canada[105] and one in the USA.[106] The UK study was largely descriptive and provided very limited comparative data; therefore, little can be concluded on the clinical effectiveness of the intervention. Similarly, little could be concluded from the other two studies because of limitations in available outcome data or applicability of comparators.

Edmondson and Cummins[31] investigated the impact of a RAID team in Oldham, England, providing telephone triage services. They found that between 2010 (before the intervention) and 2014 (implementation of intervention), the number of Section 136 detentions reduced from 71 to 43. They also found that 9.8% of calls to a telephone triage service resulted in a hospital admission (66 out of 673 calls).

Edmondson and Cummins[32] reported that police officers felt that access to triage services from the RAID team improved communication, co-ordination of police–RAID work, timeliness of interventions and completion of assessments within satisfactory time scales. Some stated challenges to the use of RAID included unanswered calls, limited access to radio sets and mobile phones to use of RAID, and disagreements between police and health staff on appropriate designated place of safety.[31]

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TABLE 3 Brief summary of included studies on ED interventions

Author Country	Study design	Interventions	Comparator	Outcomes
Edmonson and Cummins, 2014[31] UK *n* = 673 calls	Mainly descriptive Follow-up period: 6 months	Police officers received telephone triage from mental health professionals	Mainly none, but some before intervention data	Use of Mental Health Act detention, all other outcomes were descriptive
Kisely *et al.* 2010[105] Canada *n* = 4114 calls	Quasi-experimental Follow-up period: 24 months	Street triage crisis team formed in partnership between mental health services, municipal police and emergency health services	Area without access to the service	Police time on scene Engagement with outpatient treatment
Steadman *et al.*, 2000[106] USA *n* ≈ 300 calls	Quasi-experimental Follow-up period: 10 months	Police officers received training (CIT model) Community service officers (trained social workers or other related fields) assist police officers in mental health emergencies Street triage crisis team including police and mental health professionals	Interventions were compared with one another	Taken to treatment location, situation resolved on scene, referred to treatment, arrested
Compton *et al.*, 2014[107] USA *n* = 1063 calls	Quasi-experimental Follow-up period: 8 months	Police officers received training (CIT model)	Police officers did not receive training	Level of force, referral or transport to mental health services, arrests
El-Mallakh *et al.*, 2008[108] USA *n* = unclear	Mainly descriptive	Police officer received training (CIT model)	Mainly none but some before intervention data	Inpatient referrals, all other outcomes were descriptive
Herrington and Pope, 2014[109] Australia *n* = 194 police officers	Quasi-experimental Follow-up period: 24 months	Police officers received training (MHIT model)	Police officers did not receive training	Level of force during Mental Health Act events Time at Mental Health Act events Dead time at Mental Health Act events

MHIT, mental health intervention team.

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A Canadian study provided more meaningful comparative data, but it is unclear the extent to which these findings can be applied to the UK. Kisely *et al.*[105] found that at the 12-month follow-up there were no differences between the street triage crisis team and controls for police time on scene of a suicide call. However, at the 24-month follow-up the street triage team [mean 136 minutes, standard deviation (SD) 136 minutes] was associated with a statistically significantly reduced police time on scene compared with the controls (mean 165 minutes, SD 165 minutes). In addition, after adjusting for confounders, people who had contact with the street triage crisis team were more likely to engage in outpatient treatment at the 12-month follow-up ($\beta = 1.3$; $p < 0.001$).

Although some comparative data were reported in a US-based study, the extent to which meaningful inferences can be drawn is unclear. Steadman *et al.*[106] found that the area focusing on police with mental health training was most likely to transport people to mental health services (75% of mental health-related calls, compared with 20% for the community service officers and 42% for the mobile crisis team). The situation was resolved on the scene most commonly by the community service officers (64% of mental health-related calls, compared with 17% for the street triage crisis team and 23% for the police officers with mental health training). Arrests were also highest for the team with the community service officers (13% of mental health-related calls, compared with 5% for the street triage crisis team and 2% for the police officers with mental health training).

Police officers receiving training in mental health

Three studies[107–109] evaluated the benefits of police officers receiving mental health training; none were conducted in UK. No convincing evidence of benefit was found in any of these studies, and the extent to which the findings could be applied to the UK is also unclear.

Compton *et al.*[107] mostly found no differences in the level of force used by police with mental health training and those without, but police officers with mental health training were more likely than police officers without that training to describe their highest level of force as verbally engaging and negotiating with a person with mental health problems.

More than half of all encounters were resolved at the scene, with no differences found between trained and untrained police officers. However, police officers with mental health training were more likely to refer, or to transport, to a treatment facility (OR 1.70; $p = 0.026$) and less likely to arrest the individual (OR 0.47; $p = 0.007$).

El-Mallakh *et al.*[108] found that arrest rates were lower for calls taken by police officers with mental health training (2.1%) than the overall arrest rate (6.2%), a difference which was statistically significant ($p < 0.01$). In addition, referral rate to intensive psychiatric services fell from 53% before implementing the CIT training in 2001 to 26.8% in 2004.

Herrington and Pope[109] reported no significant difference in the use of force before and after mental health intervention team (MHIT) training, or between front-line MHIT-trained and non-trained officers during Mental Health Act events. There was also no perceived improvement in the quality of relationship between police officers receiving training and health-care staff. However, police officers receiving mental health training reported spending less time dealing with Mental Health Act events than those who did not receive training (54.5 minutes compared with 99.5 minutes; $p < 0.05$). Police officers with mental health training also experienced less dead time waiting to hand over to health-care professionals (25.4 minutes compared with 54.8 minutes; $p < 0.01$).[109]

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Quality of treatment and care in crisis

Alternatives to inpatient treatment

We examined evidence for the effectiveness of a range of alternatives to inpatient treatment for both adults and young people. The findings are summarised in *Table 4* and discussed in more detail in the text below.

Crisis resolution and home treatment teams

Clinical effectiveness

The NCCMH[35] identified six RCTs on CRHTTs published between 1964 and 2005. Evidence from the UK studies was largely consistent with those conducted in other countries and health systems.

There were large reductions in the probability of being admitted to hospital at 3 months, 6 months, 12 months (RR 0.4, 95% CI 0.31 to 0.51; GRADE rating, low; three studies, $n = 400$) and 24 months (RR 0.32, 95% CI 0.22 to 0.46; GRADE rating, low; one study, $n = 118$) for people receiving CRHTTs.

However, the probability of readmission was less conclusive at 12 months (RR 0.51, 95% CI 0.21 to 1.2; GRADE rating, very low; four studies, $n = 601$) and 24 months (RR 0.76, 95% CI 0.36 to 1.63; GRADE rating, very low; two studies, $n = 306$). It was also inconclusive whether or not CRHTTs reduced Mental Health Act admissions at 3 months (RR 0.65, 95% CI 0.31 to 1.35; GRADE rating, low; one study, $n = 87$).

There was also strong evidence of service user satisfaction with treatment at 6, 12 and 20 months [standardised mean difference (SMD) 1.21, 95% CI 0.85 to 1.58; GRADE rating, low; one study, $n = 137$].

Although there was positive evidence for clinical effectiveness, it should also be noted that the quality of evidence for all outcomes was rated low or very low, mainly because of the risk of bias in the included studies and the high level of heterogeneity.

Implementation studies (Crisis resolution team Optimisation and RElapse prevention study)

Crisis resolution team Optimisation and RElapse prevention (CORE) is a UK study currently being conducted at the time of this report whose aims include developing the evidence to optimise the functioning of CRTs.

Systematic review on implementing crisis resolution teams As part of this study, a systematic review was conducted on how to implement CRTs that included studies examining effective components, service user and staff perceptions of effective elements of CRTs and recommendations by government and non-statutory organisations (Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, personal communication).

TABLE 4 Summary of evidence on crisis interventions

Intervention	Evidence of clinical effectiveness	GRADE rating: quality of evidence
CRHTT for adults	Reduced risk of hospital admission and service user satisfaction compared with inpatient treatment	Low–very low
Crisis houses for adults	Does not appear to be a difference in effectiveness compared with inpatient treatment	Low–very low
Acute day hospital care for adults	Does not appear to be a difference in effectiveness compared with inpatient treatment	Low–very low
Alternatives to inpatient treatment for children and young people	Inconclusive	Very low

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Of five studies comparing different CRT models, one study found the presence of a psychiatrist was associated with reduced hospital admission for the CRT group. The other four studies did not find conclusive evidence for effective components of CRT.

They conducted a broader review of the clinical effectiveness of CRTs including 13 studies with similar conclusions that CRTs appeared more effective than treatment as usual in reducing hospital admissions. However, components of CRT were not well reported and there remained important gaps, even after contacting authors. There was a great deal of variety in terms of implementing the intervention between studies and it was unclear which components contributed to the clinical effectiveness and cost-effectiveness of CRTs.

A UK survey found that CRTs that offered a 24-hour service were more effective in reducing hospital admissions than those offering reduced hours, but secondary analysis of the data cast some doubt on the findings.

A review of qualitative studies was also conducted as part of the CORE study which suggested CRTs should provide: easy access, quick response, clarity and continuity concerning CRT treatment and aftercare, and care tailored to the needs of service users by staff with appropriate competencies (Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, personal communication).

Recommendations by government agencies and non-statutory organisations included providing a 24/7 service, assessing all patients before hospital admission with the aim of home treatment where possible, multidisciplinary teams, staffing levels equivalent to 14 full-time staff per 150,000 population served and typical case loads of about 25 to 30 (Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, personal communication).

Surveys of crisis resolution teams in the UK The CORE study also includes a survey of CRT managers conducted in 2011/12. The findings of this survey are summarised in the May/June 2014 issue of *Mental Health Today*.[110]

They found that only 40% of CRTs were providing a full 24/7 service, although 85% provide some 24/7 cover. Some teams were able to achieve 4-hour targets from referral to assessment, but for many CRTs it was routine practice to provide this the day after referral.

Crisis resolution team staff access to training, supervision and manualised resources to support psychosocial interventions was found to vary widely across the UK. In addition, a small minority had systems in place to monitor and develop staff performance.

Gatekeeping by CRTs also varied across the UK. Only 47% aimed to assess all service users in person before hospital admission, only 35% of CRTs had access to crisis houses and 22% had access to an acute day service.

Another important finding was the challenge to maintain the CRT focus. Many CRTs appeared to be working with a broader range of service users, with not all experiencing crisis. In addition, CRTs were often required to provide other services such as psychiatric liaison services in A&E departments.

Fidelity to crisis response team good practice This survey, along with interviews with 200 mental health staff, service users and carers resulted in the development of a 39-item CRT fidelity measure (see *Appendix 2* or UCL[111] for a copy of the fidelity scale). This was then followed up by a survey of 75 CRTs in 2013/14 to assess the extent to which services were consistent with the CORE model of good practice. The findings of this study are not yet published, but we were provided with a summary from the CORE research team. Although examples from CRTs of good fidelity were found for each item, few teams were putting together the whole package with no team meeting the criteria for good fidelity (mean score

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of 4 per item overall) (Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, personal communication). Therefore, the key need for improvement among CRTs was greater fidelity across the range of items identified by the CORE model.

Cost-effectiveness

Two UK-based economic analyses were identified by the NCCMH.[34]

One study compared CRHTTs with standard care based on a large RCT conducted in the UK ($n = 260$), which included people with psychosis, schizophrenia, bipolar disorder, personality disorders or depression. The authors considered NHS and criminal justice costs (although criminal justice only accounted for a small proportion of costs) based on a time horizon of 6 months. When including inpatient costs, CRHTTs were more cost-effective as they were associated with lower costs (by £2438). When excluding inpatient costs, CRHTTs were more expensive (by £768) but would be cost-effective if society was willing to pay £100 to avoid an extra inpatient day.

A further study conducted another analysis comparing CRHTTs with standard care, this time using data from a before-and-after study in the UK ($n = 200$) mainly including people with schizophrenia/schizoaffective disorder or bipolar disorder. The authors also included both NHS and criminal justice costs over a 6-month period.

The two studies concluded that CRHTTs resulted in cost savings of £1681 at 2001 prices. Although the clinical data were based on a before-and-after study, which maybe prone to risk of bias, there was extensive adjustment for baseline differences in the analysis.

Crisis houses

The NCCMH[34] identified one RCT on crisis houses for people with psychosis, which was conducted in the USA. There appeared to be no additional benefit to crisis houses when compared with standard care (inpatient care) on hospital admission (RR 1.0, 95% CI 0.98 to 1.02; GRADE rating, low; one study, $n = 185$) or readmission (RR 0.9, 95% CI 0.76 to 1.05; GRADE rating, low; one study, $n = 185$). No data were available on Mental Health Act admission or service user satisfaction.

The NCCMH[34] concluded that, although the evidence is currently inconclusive, crisis houses should be offered to service users as an alternative to standard care.

Lloyd-Evans *et al.*[65] examined the clinical effectiveness of crisis houses and other residential options in a broader range of populations. They identified 11 studies on crisis houses but only three of these were rated as moderate- or high-quality evidence. One study found some benefits in terms of quality of life, cost of index admission and homelessness at discharge. However, these differences were not sustained at the 2-month follow-up. One study found that crisis houses were less costly but associated with longer admission. Finally, another study found no differences between crisis houses and standard care.

Recent UK studies (randomised and non-randomised) have found similar results as above (and are also consistent with qualitative accounts of service user experience discussed in *Chapter 1, Potential barriers to accessing support before crisis*) including greater service user satisfaction, greater autonomy, reduced costs of admission, greater therapeutic alliances and no differences in service user and service utilisation outcomes compared with inpatient treatment.[112–115]

Acute day hospital care

Clinical effectiveness

The NCCMH[34] updated an existing Cochrane review, but did not find any additional trials. Ten RCTs, published between 1965 and 2007, were included in the review and compared acute day hospitals with routine inpatient care.

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No evidence of differences was found between day hospital services and standard inpatient services in engaging participants. Studies conducted in the UK were largely consistent with those conducted in other health systems. For example, there was high-quality evidence of no differences between acute day hospitals and treatment as usual in terms of feasibility and engagement (RR 0.97, 95% CI 0.80 to 1.17; GRADE rating, high; one study, $n = 1117$). Although there were no differences between groups in total days in hospital, duration of hospital stay was shorter for those receiving inpatient care. The meta-analysis found that, overall, service users were more satisfied with day hospital care. However, when examining the Kallert-EU-2007 trial, which was judged to be more applicable to current UK practice, no differences in satisfaction were observed.[34]

Cost-effectiveness

No studies were found on the cost-effectiveness of acute day hospital care.[34]

Alternatives to inpatient treatment for children and young people

We selected the study by Shepperd *et al.*[64] as a comprehensive review of the evidence and did not consider any further systematic reviews. They identified seven RCTs on four distinct models of care: multisystemic therapy at home, specialist outpatient service, intensive home treatment and intensive home-based crisis intervention ('homebuilders' model for crisis intervention). There was very high conceptual heterogeneity and small sample sizes, and study quality was very low. The authors concluded that the quality of the evidence provided little guidance for the development of services.

Inpatient treatment

Clinical effectiveness and cost-effectiveness of inpatient treatment

Guidelines on psychosis, psychosis and substance misuse, depression, bipolar disorder and BPD all examined evidence for the clinical effectiveness and cost-effectiveness of inpatient treatment.

Studies comparing inpatient treatment with alternatives such as crisis houses and acute day hospitals are reviewed above in *Alternatives to inpatient treatment*. Most guidelines identified no other evidence on the clinical effectiveness and cost-effectiveness of inpatient treatment.

The NICE guideline *Borderline Personality Disorder: Treatment and Management*[56] identified five studies on inpatient treatment; however, all the studies were conducted by the same institution in Finland, they lacked applicability to inpatient services in the UK and none used a control group. Therefore, it was not possible to conclude anything from these studies in terms of effectiveness of inpatient treatment in the UK. For all outcomes the GRADE rating of quality was very low.

Two studies identified in the *Psychosis with Coexisting Substance Misuse: Assessment and Management in Adults and Young People* NICE guideline[57] showed some evidence for the benefits of inpatient treatment, but these studies were of low quality and difficult to interpret. Therefore, it was not possible to draw conclusions from these studies. The GRADE quality rating for all outcomes was very low.

Examining the clinical effectiveness of inpatient mental health treatment is challenging, as identifying an appropriate control group is extremely difficult, and this has led to a preponderance of largely descriptive studies in this area. An alternative method is to investigate what factors impact on service user outcomes, such as conflict and containment when receiving inpatient treatment; these are reviewed in *Factors affecting conflict and containment in inpatient mental health settings*.

Factors affecting conflict and containment in inpatient mental health settings

Bowers *et al.* have conducted a number of systematic reviews on conflict and containment in inpatient mental health settings. These include patient factors associated with psychiatric inpatient aggression[116] and self-harm.[117]

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From these systematic reviews and other data, Bowers *et al.*[63] developed the Safewards model, which proposes six factors that influence conflict and containment in psychiatric wards: (1) staff team; (2) physical environment; (3) outside hospital; (4) patient community; (5) patient characteristics; and (6) regulatory framework.

The findings of their reviews are summarised in an overview of the evidence base on conflict and containment in inpatient mental health settings, which is grouped in terms of these six factors of the Safewards model.[63] Bowers *et al.*[63] acknowledged that the evidence base is very limited, consisting mainly of descriptive studies with few controlled trials available. Therefore, the data summarised below can be considered only preliminary.

One of the key factors influencing conflict and containment is structure. A cross-sectional study found that structure was a stronger predictor of conflict and containment than patient satisfaction. Similarly, a longitudinal study found that structure predicted subsequent conflict in wards. In addition, a participant observation with follow-up interviews of staff on four acute and two chronic wards found that violence was more common in wards with unclear staff functions and where there was unpredictability in activities/events and staff–patient interactions.[63] However, reviews of absconding and also substance use in inpatients did not find structure to be an important factor.

The physical environment was also found to be an important aspect of inpatient treatment. Bowers *et al.*[63] found that permanently locked wards were associated with reduced absconding. However, locked wards were also associated with greater aggression, self-harm and medication refusal. The complexity of ward layout was also an important factor. Suicides were more commonly attempted in private areas (such as bathrooms, bedrooms, toilets); therefore, greater availability of these areas was associated with higher rates of suicide. There was also evidence that removing ligature points in inpatient wards was associated with a reduction in suicides in England and Wales.

Outside hospital factors influenced risk of violence and self-harm. Bowers *et al.*[63] estimated that 3% of violent incidents were attributable to factors such as a lack of access to money and unresolved family problems. A relatively large study ($n = 207$) found that external factors accounted for 20% of incidents of self-harm.

The patient community was also found to impact on conflict and containment. A meta-analysis of the violence literature found that 25% of violent incidents occurred after patient–to-patient interactions including physical contact, intrusion into personal space and reactions to sexual approach.

A variety of patient characteristics were associated with conflict and containment. Younger age was associated with a greater risk across a range of outcomes, including violence, substance use, absconding and self-harm. Males were more likely to engage in violence (in acute but not forensic wards), substance use and absconding. Having a schizophrenia diagnosis was associated with greater violence, absconding, self-harm and suicide attempts. Depression was mainly associated with self-harm and suicide attempts. Formal detention was associated with most conflict/containment items such as violence, absconding, coerced medication and manual/mechanical restraint.

Although detention rates vary a great deal between countries, there are insufficient data to examine the influence of the regulatory framework on conflict and containment in inpatient wards. However, studies of national policy have found evidence of a reduction in seclusion use. Similarly, national policies on pro re nata medication (medication when required) have influenced behaviour. A study of European Union member states found that obligatory inclusion of a legal representative lowered compulsory admissions.[118]

Bowers *et al.*[63] concluded that their Safewards model provides a foundation for a number of different interventions to seek to reduce conflict and containment.

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Bowers *et al.*[63] have recently completed a single-blind cluster RCT based on their Safewards model. At the time of the review being conducted the trial results had not yet been published, but some data have been reported in conference presentations. The full review has since been published in the *International Journal of Nursing Studies*.[119]

They included 15 hospitals and 31 wards that were randomised to receive either the Safewards-based intervention or a control well-being intervention (information provision on diet, physical activity and health promotion). There was a statistically significant reduction in conflict (–14.6%, 95% CI –5.4% to –23.5%) and containment (–23.6%, 95% CI –5.8% to –35.2%) in the intervention wards compared with the control wards.

Promoting recovery/preventing future crises

For the review of all other stages of the mental health crisis care pathway we have focused on service and team models. However, as the focus of the Crisis Concordat for this stage of the care pathway is focused on individual-level interventions we have broadened the scope of the review for this area to include both service models and individual-level interventions recommended by NICE. The findings are summarised in *Table 5* and discussed in more detail in *Access and engagement for black and minority ethnic communities*, *Service-level interventions primarily aiming to improve mental health outcomes, Individual-level relapse prevention interventions*, *Joint crisis plans* and *Strengths-based approaches to recovery*.

Access and engagement for black and minority ethnic communities

The NCCMH[28] identified two reviews of the published[66] and grey literature[67] on improving pathways to care for BME communities. These reviews were not rated by the NCCMH. Owing to limitations in reporting of the review, we provided only overall GRADE ratings rather than for each outcome. There was substantial inconsistency of results for most outcomes, there were issues of applicability, particularly for the review of published studies,[66] and there was also substantial uncertainty due to lack of reporting. Therefore, we rated the overall evidence as very low quality. However, it is acknowledged that there are substantial challenges in conducting research in this area.

Sass *et al.*[66] identified six studies on this topic. There was one RCT conducted in the UK that included 70 women of Indian origin with a common mental health disorder and provided an educational leaflet in English, Hindi and Punjabi to promote use of primary care. Although this did not change service use patterns it did result in a reduction in psychological distress among participants.

'Ethnic matching' demonstrated an impact on care pathways (two of three studies): improved use of outpatient care for Latinos and East Asians, increased use of continuing care, reduced use of crisis teams and shorter hospitalisations. However, two of the three studies were not able to report a change in pathways to care for African Americans.

Moffat *et al.*[67] identified eight relevant studies from the grey literature all conducted in the UK. They found three key overlapping themes of collaboration, facilitation of referral between services and improved access through outreach.

In terms of collaboration, they found pathway impacts arising from partnerships between NHS services and culturally specific community groups in three of seven studies. Collaboration and partnerships with local employment and education services also resulted in client completion of work placement scheme and attendance at college (two studies).

Collaboration between services aimed to facilitate routes through care. In addition, some services acted as a bridge between services and sectors to provide culture-specific advocacy through networking with a variety of agencies, and campaigns to raise awareness about the service. Services provided information on other available services and how to access them, but 44% of clients refused referral to suggested services (two studies).

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TABLE 5 Summary of NICE recommended interventions on promoting recovery

Intervention	Evidence of clinical effectiveness	GRADE rating: quality of evidence
Service-level interventions for treating mental health conditions		
EISs	Hospitalisation, PANSS total (i.e. positive and negative symptoms), employment, engagement with services, global state	Moderate to low
ICM	Length of stay in hospital, retention in care and service user satisfaction However, effectiveness largely not replicated in UK studies	High to very low
Collaborative care for depression in people with chronic physical health problems	Depression symptoms, response, remission but judged to be of clinical importance	High to moderate
Individual-level relapse prevention interventions		
CBT for people with psychosis	Reduction in readmissions, relapse rates and symptom-related outcomes	Moderate to high
Family interventions for people with psychosis	Reduction in readmissions, relapse rates and symptom-related outcomes	Moderate to high
Antipsychotics for people with psychosis	Reduction in relapse rates and overall treatment failure	Moderate to high
Psychological interventions for people with bipolar disorder	Reduction in readmissions, relapse and other outcomes but was not possible to identify particular interventions more likely to be associated with benefit	Low to moderate
Lithium for people with bipolar disorder	Reduction in relapse rates and overall treatment failure	Low to moderate
DBT for people with BPD	Reduction in readmissions, self-harm and other outcomes	Low to moderate
MBT for people with BPD	Reduction in hospitalisation, self-harm and other outcomes	Low to moderate
Psychological interventions for self-harm	Reduction in repetition of self-harm, hopelessness, depression but was not possible to identify particular interventions more likely to be associated with benefit	Low to moderate
CBT for depression	Reduction in relapse and depression symptoms	Low to moderate
Antidepressants for depression	Reduction in relapse and depression symptoms	Low to moderate
Strengths-based individual-level interventions to promote recovery		
Supported employment	Obtaining any occupation, obtaining competitive employment	Moderate to very low
Peer support	Inconclusive for most outcomes	Low to very low
Self-management	Positive and negative psychosis symptoms, hospitalisation	High to very low
Crisis planning		
JCPs	Some evidence of benefit in pilot studies, but challenges identified when trying to implement more widely in routine practice	Low

CBT, cognitive–behavioural therapy; DBT, dialectical behaviour therapy; ICM, intensive case management; JCP, joint crisis plan; MBT, mentalisation-based therapy; PANSS, Positive And Negative Syndrome Scale.

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Outreach services, including home treatment, home assessment, specialist clinics in hospitals, GP units or community settings, and delivering health education campaigns or leaflets (eight studies), showed that pathway impacts exist only for home assessment and treatment. Benefits included ensuring accurate assessment and identifying appropriate services for Chinese clients (one study).

Moffat *et al.*[67] noted there were important limitations in the data, including that most documents did not adopt a research framework or incorporate systematic collection of data. Therefore, it is difficult to draw conclusions from the data.

Service-level interventions primarily aiming to improve mental health outcomes

Interface between primary and secondary care

No robust evidence was identified on the interface between primary and secondary care for promoting recovery-preventing crisis.[34]

Early intervention services

Clinical effectiveness

The NCCMH[34] identified four RCTs on EISs. All were conducted in the UK or Europe and the length of follow-up ranged from 1 to 2 years.

They defined EISs as providing at least two of the following functions: early identification and therapeutic engagement of people with a first episode of psychosis; provision of evidence-based pharmacological and psychosocial interventions; and educating the wider community to reduce barriers to early engagement with treatment.[34]

Early intervention services were more effective than standard care in reducing hospitalisation (RR 0.88, 95% CI 0.79 to 0.98; GRADE rating, moderate; three studies, $n = 733$), number of admissions (SMD –0.46, 95% CI –0.8 to –0.12; GRADE rating, moderate; one study, $n = 136$) and number of bed-days (SMD –0.18, 95% CI –0.33 to –0.03; GRADE rating, moderate; two studies, $n = 683$).

There was also a reduction in total symptoms based on the Positive And Negative Syndrome Scale (PANSS) (SMD –0.52, 95% CI –0.92 to –0.11; GRADE rating: low; one study, $n = 99$), positive symptoms based on the PANSS or Scale for the Assessment of Positive Symptoms (SMD –0.21, 95% CI –0.39 to –0.03; GRADE rating, low; two studies, $n = 468$) and negative symptoms based on the PANSS or Scale for the Assessment of Positive Symptoms (SMD –0.39, 95% CI –0.57 to –0.2; GRADE rating, low; two studies, $n = 468$).

In addition, there was evidence favouring EISs in terms of greater likelihood of being in work or paid employment (RR 0.72, 95% CI 0.54 to 0.97; GRADE rating, moderate) based on one trial of 436 participants.

Cost-effectiveness

The NCCMH[34] identified six cost-effectiveness studies (two conducted in UK, two in Italy, one in Denmark and one in Australia). We will focus on the findings from the UK studies as these are most directly applicable to the review.

One study based their analyses on a RCT of 144 participants and used a time horizon of 18 months. The study estimated NHS costs and criminal justice costs. There were no statistically significant differences between EISs and standard care, whether or not criminal justice costs were included. The analyses concluded that EISs provide better outcomes at no extra cost and, therefore, are a cost-effective option. Another study by the same authors conducted a model-based cost analysis comparing EISs with standard care. Costs were reported for years 1 and 3, and were based on a NHS and Personal Social Services (PSS) perspective. It was found that EISs resulted in cost savings of £4972 and £14,248 in years 1 and 3,

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respectively (at 2006/n prices). In addition, probabilistic sensitivity analysis indicated that there was a far greater likelihood of cost savings associated with EISs and the results were fairly robust.

Intensive case management

Clinical effectiveness

The NCCMH[34] selected an existing Cochrane review which included 38 RCTs. They also conducted further subgroup analysis including only UK trials.

Intensive case management (ICM) was defined as a package of care using the assertive community treatment (ACT) model, assertive outreach model, the case management model, or reporting a caseload of up to 20 people.[34]

Based on the international literature, ICM was found to be effective in reducing length of stay in hospital, and improving retention in care and service user satisfaction. There were less consistent data on benefits to quality of life. The quality of evidence based on GRADE criteria ranged from high to very low. There was moderate- to high-quality evidence on service user satisfaction, but for most other outcomes there was low- to very low-quality evidence.

However, when limiting the meta-analysis to only UK trials ($k = 8$) there was no evidence of benefit on reducing average number of days hospitalised, or on quality of life. However, ICM was associated with a greater probability of remaining in contact with service users.

Cost-effectiveness

The review of economic studies found four eligible analyses.[34] We focused on the two studies conducted in the UK as these are most directly applicable to our review.

One study conducted a cost minimisation analysis comparing ICM with standard care. No differences were found in clinical effectiveness and differences in costs were not statistically significant. It was concluded that ICM was not cost-effective, as there was no evidence of improvement in clinical effectiveness and no reduction in costs.

Another study compared cost-effectiveness of ICM with standard care Community Mental Health Teams (CMHTs). ICM was associated with a statistically significant increase in participant satisfaction and an increase in costs of £4031 that was not statistically significant. Therefore, the authors concluded that ICM was cost-effective. However, the NCCMH[34] noted that the use of satisfaction scores as the outcome may make the analyses difficult to interpret.

Community Mental Health Teams

Clinical effectiveness

The NCCMH[34] identified three RCTs conducted in the UK between 1992 and 1998. They defined CMHT as providing multidisciplinary community-based team care.

None of the three trials showed a statistically significant benefit compared with either standard hospital treatment or traditional psychiatric services. However, the NCCMH[34] noted that these trials were unlikely to reflect the diversity of community mental health care in the UK at the present time, as many have assimilated practices used by more recent models of care, such as ACT, outreach services and ICM. The evidence was rated as very low quality.

Cost-effectiveness

One study, discussed in more detail in *Early intervention services*, found that CMHT was less effective than EIS although not differing (although potentially higher) in costs.

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Psychosis and substance misuse integrated service models

Clinical effectiveness

The NCCMH[57] identified a Cochrane review on integrated service models. Integrated service models were defined as those that unify services at the provider level, rather than requiring service users to negotiate separate mental health and substance misuse treatment programmes.

Although this Cochrane review has been subsequently updated,[37] the authors found no further evidence on this model; therefore, we will focus on the data reviewed in the psychosis and substance misuse guideline.

Four trials were included in the review,[57] two comparing an integrated service model (ACT/dual disorders treatment) with standard care, and two comparing integrated ACT with non-integrated ACT. The evidence was inconclusive (GRADE ratings ranged from moderate to low) whether or not an integrated approach was effective for people with psychosis and substance misuse.

In addition, three observational studies examining the clinical effectiveness of integrated service models were included. One study found that the integrated group was associated with a reduced number of days in hospital compared with parallel treatment. Another study found that, compared with standard treatment, integrated treatment was associated with fewer days in an institution, more days in stable housing and greater progress in substance misuse recovery. A further study successively enrolled four groups into a day hospital of a dual diagnosis treatment programme. All groups made sequential improvements when receiving treatment. Although the observational studies suggested some benefit, methodological limitations of the studies and lack of applicability to the UK meant that no firm conclusion could be drawn.

Cost-effectiveness

No UK cost-effectiveness analyses were identified in the NCCMH[57] review.

Staffed accommodation for people with psychosis and substance misuse

Clinical effectiveness

The NCCMH[57] defined included interventions as any staffed accommodation or supported housing for people with a diagnosis of psychosis and coexisting substance misuse that may include an element of specific treatment for the substance misuse.

There was one trial on staffed accommodation ($n = 132$) that provided an integrated mental health and substance misuse treatment programme. It was inconclusive whether or not this intervention was more effective than standard care (GRADE rating was low-quality evidence for all outcomes).

In addition, five non-randomised studies were identified in the review.[57] One study found that long-term residential programmes were more effective than short-term residential programmes in engaging service users in treatment and maintaining abstinence from substance use after discharge. However, no differences were found in hospitalisation and incarceration.

One study compared an integrated psychosis and substance misuse model with a therapeutic community approach to substance misuse treatment in people who were homeless. The more restrictive approach was associated with greater dropout, but there were few differences in outcomes between groups.

One study compared psychosocial rehabilitation with a modified therapeutic community approach for homeless people with psychosis and substance misuse. Those undergoing 2 years of psychosocial rehabilitation showed higher abstinence and treatment retention rates, and improved mental health, compared with those treated with a modified therapeutic community approach.

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Another study compared a community residential treatment programme with a therapeutic community programme for people with psychosis and substance misuse. Benefits were reported for the therapeutic community approach on abstinence, psychological symptoms and level of functioning at the 12-month follow-up.

Finally, one study found that a medium-intensity therapeutic community was more effective than a low-intensity therapeutic community and treatment as usual, in terms of treatment retention. The medium-intensity group improved on more outcomes than the low-intensity or treatment-as-usual groups.

Although, most of the non-randomised studies found that longer duration residential programmes were more clinically effective than shorter duration, on substance use outcomes at follow-up, there were substantial methodological limitations in these studies. Therefore, it was difficult to conclude whether or not these interventions were clinically effective.

Cost-effectiveness

No UK cost-effectiveness analyses were identified in the NCCMH review.[57]

Mood clinics for bipolar disorder

We identified a recent NICE guideline on bipolar disorder in adults, children and young people.[58] This was judged to include comprehensive and reliable reviews of the literature on promoting recovery; therefore, we did not seek to review further sources of data.

Clinical effectiveness

The NCCMH[58] identified one RCT ($n = 158$) on mood clinics defined as an outpatient clinic providing evidence-based psychosocial and pharmacological interventions. This was conducted in Denmark and GRADE ratings ranged from low- to very low-quality evidence. This was effective in reducing the risk of hospitalisation (RR 0.66, 95% CI 0.46 to 0.95; GRADE rating, low; one study), but not the number of relapses (RR 1.10, 95% CI 0.85 to 1.42; GRADE rating, very low). It was concluded that services providing co-ordinated evidence-based psychological and pharmacological interventions were likely to be beneficial for people with bipolar disorder.[58]

Cost-effectiveness

No UK cost-effectiveness analyses were identified in the NCCMH[58] review.

Collaborative care for bipolar disorder

Clinical effectiveness

The NCCMH[58] identified one trial on collaborative care for bipolar disorder. This was judged to be a comprehensive and reliable review on the evidence for this intervention.

Collaborative care was defined according to NCCMH:[59]

- the provision of case management, supervised and supported by a senior mental health professional
- development of a close collaboration between primary and secondary care services
- provision of a range of evidence-based psychosocial and pharmacological interventions and medication management
- provision of long-term co-ordination of care and follow-up.

There was evidence of effectiveness for reducing depression (SMD –0.56, 95% CI –1.06 to –0.07; GRADE rating, very low; one study, $n = 66$), but this was rated as very low quality.

For all other outcomes it was inconclusive whether or not collaborative care was more clinically effective than treatment as usual based on low- to very low-quality evidence.

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Cost-effectiveness

No UK cost-effectiveness analyses were identified in the NCCMH[58] review.

Service-level interventions for depression

We identified a recent NICE guideline on depression in adults and depression in people with a chronic physical health problems.[59] This was judged to include comprehensive and reliable reviews of the literature on promoting recovery. We also supplemented these data with a more recent Cochrane review of collaborative care.[62]

Clinical effectiveness

Stepped-care models are commonly used in the treatment of common mental health problems in the UK. For example, NICE guidance on depression and other common mental health conditions assume a stepped-care model. Similarly, a report on two demonstration sites of the IAPT evaluation found good evidence for increased patient follows through the system.[59] However, there is currently limited evidence from direct studies on common mental health problems on the effectiveness of stepped care. However, there is a trial in the UK currently under way on stepped care for depression (led by Jacqueline Hill at the University of Exeter, Exeter, UK).

Fifty RCTs were included in the NCCMH[59] review of collaborative care, which was limited to people without a comorbid physical condition. The definition of collaborative care was the same as that provided above for the treatment of people with bipolar disorder.

There were statistically significant differences between collaborative care and control on depression outcomes such as response (self-rated measures: RR 0.83, 95% CI 0.75 to 0.92; GRADE rating, high; seven studies, $n = 1820$) remission (RR 0.91, 95% CI 0.86 to 0.97; GRADE rating, high; three studies, $n = 1480$) and mean depression score (SMD –0.16, 95% CI –0.25 to –0.06; GRADE rating, high; 11 studies, $n = 1876$). The NCCMH[59] concluded that these differences were of limited clinical importance.

Seventeen RCTs were included in the NCCMH[59] review of collaborative care limited to people with a comorbid physical condition. Collaborative care was effective on depression outcomes including response (RR 0.79, 95% CI 0.73 to 0.85; GRADE rating, high; eight studies, $n = 2652$), remission (RR 0.81, 95% CI 0.73 to 0.90; GRADE rating, moderate; five studies, $n = 2191$) and mean depression score (SMD –0.31, 95% CI –0.40 to –0.22; GRADE rating, high; 10 studies, $n = 1969$). The NCCMH[59] concluded that collaborative care in people with depression and a comorbid physical condition was likely to be clinically important.

A more recent Cochrane review[62] on collaborative care for depression and anxiety with 79 included RCTs combined data from general adult and chronic physical health problem populations. The authors found similar magnitudes of benefit as the NCCMH[59] and argued that sensitivity analyses excluding people with chronic physical health problems did not impact on effect estimates. However, a more detailed exploration of differences between these populations is needed to confirm their conclusion.

Cost-effectiveness

The NCCMH[59] conducted a cost-effectiveness analysis of collaborative care for people with depression and a comorbid physical condition using a 15-month time horizon. They adopted a NHS and PSS perspective and the outcome measure was quality-adjusted life-years (QALYs). Collaborative care was found to be cost-effective as the incremental cost-effectiveness ratio (ICER) was below the threshold set by NICE (ICER of £4043 per QALY).

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Individual-level relapse prevention interventions

Psychosis

Cognitive–behavioural therapy (CBT) and family intervention were recommended by NICE[43] for preventing the risk of relapse and for promoting recovery. In addition, antipsychotic medication was also recommended.

Antipsychotic medication

Clinical effectiveness

The NCCMH[34] identified 17 RCTs evaluating the clinical effectiveness of antipsychotics in people with schizophrenia that are in remission. All antipsychotics were found to reduce risk of relapse or overall treatment failure compared with placebo. There was insufficient evidence to determine whether or not there were any differences in effectiveness between antipsychotics.

An additional 18 RCTs were identified for people with psychosis who had not responded adequately to treatment. Clozapine appeared to be the most effective treatment for reducing relapse, but there were no clinically significant differences identified for persistent negative symptoms.

For people who did not respond adequately to clozapine, augmentation with a second antipsychotic may be more effective (based on six small RCTs).

There was insufficient evidence to recommend treatment with depot/long-acting injectable antipsychotic medication.

Cost-effectiveness

The NCCMH[34] conducted a systematic review of cost-effectiveness studies for preventing relapse and promoting recovery. Most included studies were conducted outside the UK and, therefore, not applicable to the NHS health-care system. In addition, the two UK studies were associated with a high level of uncertainty and had important limitations.

Therefore, the NCCMH[34] conducted a decision-analytic model from a NHS PSS perspective comparing olanzapine, amisulpride, zotepine, aripiprazole, paliperidone, risperidone and haloperidol. The model considered events such as relapse, discontinuation of treatment due to side effects and switching to another antipsychotic drug, discontinuation of treatment due to other reasons and moving to no treatment, as well as development of side effects such as weight gain, diabetes and mortality.

Probabilistic analyses identified a great deal of uncertainty in the results suggesting that no antipsychotic medication can be considered the most cost-effective intervention than other options.

Cognitive–behavioural therapy

Clinical effectiveness

The NCCMH[34] found 11 RCTs that compared CBT with any control in participants during the promoting recovery phase. CBT was found to reduce readmission rates up to 18 months post follow-up (RR 0.76, 95% CI 0.61 to 0.94; five studies) and also to reduce the duration of hospitalisation (mean difference –8.26 days, 95% CI –15.51 to –1.01 days; five studies). CBT was also shown to reduce symptom severity [as measured by PANSS and the Brief Psychiatric Rating Scale (BPRS)] and depression outcomes.

Cost-effectiveness

The NCCMH[34] also conducted an economic analysis showing that CBT was likely to be cost saving. The intervention costs were likely to be offset by a reduction in risk of future hospitalisation. The net cost of providing CBT was found to lie between –£2277 (overall net saving) and £557 per person with

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schizophrenia (for a mean duration of hospitalisation of 110.6 days) or between –£1017 and £751 per person (for a mean duration of hospitalisation of 69 days), using the 95% CIs of RRs of hospitalisation, as estimated in the guideline meta-analysis.

The limitation of this economic analysis is that it may have underestimated the potential cost savings of providing CBT for people with schizophrenia, as it did not take into account other potential reductions in health and social care resource use because of the intervention. Therefore, the NCCMH[34] concluded that, taking into account these benefits, even a conservative assumption of the potential net cost of £751 per person was likely to be acceptable.

Family interventions

Clinical effectiveness

The NCCMH[34] identified 32 RCTs of family intervention compared with any type of control. There was strong and consistent evidence for the clinical effectiveness of family intervention. For example, there was a large reduction in the risk of relapse (RR 0.55, 95% CI 0.45 to 0.67; 12 studies) up to 12 months following treatment. Family intervention also reduced hospital admission (RR 0.53, 95% CI 0.34 to 0.81; 10 studies).

Subgroup analyses suggested single-family intervention was more likely to be acceptable to service users and carers (as shown by data on leaving the study early). In addition, subgroup comparisons suggested that single-family interventions may have been more effective than multiple-family interventions in reducing hospital admission. However, these were based on indirect comparisons and would need to be established either by head-to-head trials or network meta-analyses.

Cost-effectiveness

The NCCMH[34] also conducted economic analyses of family intervention for people with schizophrenia. They found that family intervention was likely to be cost saving because of the reduction in relapse rate offsetting intervention costs.

The net cost saving of providing family intervention ranged between £1195 and £3741 per person with schizophrenia, assuming a mean duration of hospitalisation of 110.6 days and the 95% CIs of RRs of relapse, as estimated in the guideline meta-analysis. When a mean length of hospital stay of 69 days was used, the net cost of providing family intervention was found to lie between –£1326 (overall net saving) and £263 per person with schizophrenia.

As above, this is likely to be an underestimate of the cost savings associated with family intervention, as relapse rates often reduce further after completion of the intervention. Therefore, the NCCMH[35] concluded this was likely to be a cost-effective option.

Bipolar disorder

Pharmacological interventions

Clinical effectiveness

The NCCMH[58] found 36 RCTs on long-term pharmacological management of bipolar disorder. Despite a relatively large number of included studies, the evidence is very heterogeneous, which precluded the use of meta-analysis on most occasions. Consistent with most reviews in the area, the report concluded that lithium is the most effective intervention in preventing relapse. However, the authors also point out that this treatment may not be effective in approximately 40% of people; therefore, alternative options are also required for these service users. For example, there is some evidence of the benefits of valproate alone or as an adjunct to lithium.

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Evidence for antipsychotics, although largely positive (e.g. olanzapine and quetiapine), is mainly based on known responders' discontinuation of acute treatment, which was not judged to provide a reliable test of the comparator agents.

All relevant pharmacological interventions were associated with serious side effects. For example, hyperparathyroidism and impaired renal function were associated with lithium, and weight gain was associated with olanzapine and valproate.

Cost-effectiveness

The NCCMH[58] conducted a systematic review of cost-effectiveness studies on pharmacological interventions for promoting recovery in people with bipolar disorder. They found it was not possible to draw conclusions from the data because of serious study limitations, such as short time horizons in models, lack of consideration of side effects and potential conflicts of interest.

Psychological interventions

Clinical effectiveness

The NCCMH[58] included 55 trials in their review of psychological interventions. The results of the meta-analyses suggested that psychological interventions may be associated with symptomatic improvement and reduced rates of relapse and hospitalisation. The majority of these trials were of moderate to low quality.

Individual psychological interventions reduced hospitalisation at end of treatment and follow-up, but the results lacked precision (RR 0.63, 95% CI 0.38 to 1.02; seven studies; quality, low). There were clear reductions in risk of relapse at end of treatment at follow-up (RR 0.74, 95% CI 0.63 to 0.87; seven studies; quality, moderate).

The evidence regarding the ability of group psychological interventions to reduce hospitalisation (RR 0.48, 95% CI 0.16 to 1.45; five studies; quality, very low) or relapse (RR 0.86, 95% CI 0.61 to 1.20; five studies; quality, very low) at both end of treatment and follow-up was inconclusive because of wide CIs.

Family psychoeducation was associated with reduction in hospitalisation (RR 0.05, 95% CI 0.00 to 0.83; three studies; quality, low) and relapse (RR 0.52, 95% CI 0.32 to 0.84; three studies; quality, low) at follow-up.

It was inconclusive whether or not family-focused therapy is effective in reducing relapse (RR 0.67, 95% CI 0.34 to 1.30; four studies; quality, very low), but appears to reduce hospitalisation (RR 0.24, 95% CI 0.08 to 0.74; four studies; quality, very low).

Cost-effectiveness

The NCCMH[58] identified one economic study conducted in the UK that compared the cost-effectiveness of CBT with treatment as usual and adopted a NHS and PSS perspective over a time horizon of 12 months and 30 months. CBT was the dominant option, being more effective than treatment as usual at both 12 months and 30 months, although there were no differences in costs between the groups at both time points. Probabilistic analyses estimated a probability of 0.85 of CBT being cost-effective given a zero willingness to pay per additional day free from bipolar episodes at 12 months. There were only minor limitations identified with the study.

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Borderline personality disorder

Psychological interventions

Clinical effectiveness

The NCCMH[59] identified two multimodal psychological therapy programmes for people with BPD: dialectical behaviour therapy (DBT) and mentalisation-based therapy (MBT). A more recent Cochrane review[76] provided an update of data on these interventions.

Eight trials of DBT, primarily conducted in outpatient settings, were identified. Large reductions in mean suicidality scores (SMD –1.26, 95% CI –2.24 to –0.29; one study, $n = 20$) and medium reduction in mean parasuicidality scores (SMD –0.54, 95% CI –0.92 to –0.16; three studies, $n = 110$) compared with control were observed. There was also evidence of reductions in inappropriate anger (SMD –0.83, 95% CI –1.43 to –0.22; two studies, $n = 46$), but evidence was inconclusive on total severity of BPD symptoms, impulsivity, interpersonal problems and dissociation/psychoticism.

No benefits were found for DBT compared with general management in one trial of 180 participants, and compared with community treatment by experts in one trial of 101 participants.

Two trials on MBT were identified: one with partial hospitalisation and the other in an outpatient setting. MBT with partial hospitalisation was associated with a large reduction in risk of suicidality (RR 0.08, 95% CI 0.01 to 0.58; one study, $n = 38$) and parasuicidality (RR 0.44, 95% CI 0.24 to 0.81; one study, $n = 38$) than outpatients receiving treatment as usual. Large reductions in interpersonal pathology (SMD –1.98, 95% CI –2.78 to –1.19; one study, $n = 38$) and depression (SMD –1.98, 95% CI –2.78 to –1.19; one study, $n = 38$) were also found, compared with controls. However, it was inconclusive whether or not MBT was associated with reductions in anxiety and general psychopathology.

Similar benefits were found in the larger MBT trial conducted in an outpatient setting. There were large reductions in suicidality (RR 0.11, 95% CI 0.03 to 0.46; one study, $n = 134$) and parasuicidality (RR 0.56, 95% CI 0.34 to 0.92; one study, $n = 134$) compared with treatment as usual. Large reductions in interpersonal pathology (SMD –0.95, 95% CI –1.30 to –0.59; one study, $n = 134$), small to medium reductions in depression (SMD –0.45, 95% CI –0.79 to –0.10; one study, $n = 134$) and medium reductions in general psychopathology (SMD –0.67, 95% CI –1.02 to –0.33; one study, $n = 134$) were also found compared with treatment as usual.

Cost-effectiveness

The NCCMH[59] identified one cost-effectiveness analysis of both DBT and MBT based on a UK NHS perspective. They conducted four separate analyses on the cost-effectiveness of DBT using data from different RCTs. Three analyses found DBT to potentially be a cost-effective option, the other analysis found DBT to have a cost per QALY exceeding the NICE cost-effectiveness threshold. There was a high level of inconsistency across studies, most had small sample sizes and a high drop-out rate, as well as important limitation in the economic analyses; therefore, it is difficult to draw conclusions on the cost-effectiveness of DBT based on these data.[59]

The NCCMH[59] also found that MBT was potentially a cost-effective option, with an ICER below the NICE cost-effectiveness threshold. However, clinical data were based on only one small trial and there was great uncertainty regarding cost-effectiveness based on the probabilistic analyses. Therefore, as with DBT, it is difficult to draw conclusions on the cost-effectiveness of MBT.

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Pharmacological interventions

Clinical effectiveness

The NCCMH[56] identified 28 studies on pharmacological interventions for people with BPD. However, there were few studies for each individual drug and most were based on small sample sizes and broad variations in setting (inpatients, outpatients) and population (symptomatic volunteers, with and without comorbid axis I disorders). There was also variable reporting of outcome measures.

The NCCMH concluded that there was insufficient evidence for any pharmacological intervention being effective for the treatment of people with BPD. Therefore, they concluded that drug treatment should not be specifically used for the treatment of BPD. However, pharmacological treatments for comorbid conditions, such as depression, may be appropriate.

Cost-effectiveness

No evidence was identified on the cost-effectiveness of pharmacological interventions for people with BPD.

Self-harm

Psychological interventions

Clinical effectiveness

The NICE guidance[55] recommends psychological interventions specifically structured for people who self-harm with the aim of reducing self-harm.

Psychological interventions were found to be more effective than treatment as usual in reducing repetition of self-harm (RR 0.76, 95% CI 0.61 to 0.96; GRADE rating, low; nine studies, $n = 1323$) and hopelessness (SMD 0.52, 95% CI 0.86 to 0.18; GRADE rating, moderate; three studies, $n = 149$). However, treatment modalities and settings differed considerably across trials, which resulted in high heterogeneity. Participants also differed between studies in terms of previous history of self-harm (ranging from 30% to 100%, where reported) and there was a lack of reporting of psychiatric diagnoses.

There was no convincing evidence for the clinical effectiveness of pharmacological interventions. When prescribing drugs for associated mental health conditions to people who self-harm it was recommended that the toxicity of the drug in overdose should be taken into account.

Cost-effectiveness

No evidence of UK studies on cost-effectiveness was identified.

Pharmacological interventions

Clinical effectiveness

There was no convincing evidence for the clinical effectiveness of pharmacological interventions. When prescribing drugs for associated mental health conditions to people who self-harm it was recommended that the toxicity of the drug in overdose should be taken into account.

Cost-effectiveness

No evidence of UK studies on cost-effectiveness was identified.

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Depression

Pharmacological interventions

Clinical effectiveness

Based on 20 RCTs, the NCCMH[59] concluded that long-term management with antidepressants was associated with reduction in risk of relapse for up to 2 years. However, no evidence was identified comparing the benefits of different durations of treatment. There was also no evidence to suggest that any particular antidepressant was associated with a greater reduction in risk of relapse.

In addition, NICE recommends the continuation of antidepressant medication or augmentation of medication as other options for preventing relapse in people at risk of relapse.[120]

Cost-effectiveness

No evidence of UK studies on cost-effectiveness was identified.

Psychological interventions

Clinical effectiveness

Cognitive–behavioural therapy as an option for people at significant risk of relapse or with a history of recurrent depression is recommended by NICE.[120]

The largest evidence base for CBT for treating depression is in comparison with antidepressants. The NCCMH[59] found reduced relapse rates for CBT in these studies compared with antidepressants. There are also CBT interventions specifically designed to reduce relapse. Group mindfulness-based cognitive therapy (MBCT) was associated with the strongest evidence for reducing relapse. MBCT was more clinically effective than antidepressants, but with a lack of precision (RR 0.80, 95% CI 0.57 to 1.11; GRADE rating, low; one study $n = 123$), and more clinically effective than control treatments (RR 0.74, 95% CI 0.57 to 0.96; GRADE rating, moderate; one study $n = 55$) in people who had experienced three or more depressive episodes.

Cost-effectiveness

One relevant UK study was identified by the NCCMH.[59] This study compared MBCT with antidepressant medication based on data from a RCT. The time horizon was 15 months and it was based on a NHS and PSS perspective (although costs were calculated in US dollars). The authors found no statistically significant differences in costs between MBCT and antidepressants. The ICER was US$962 per relapse/recurrence prevented, which they argued justified provision of the intervention.

Psychosis

Joint crisis plans

Clinical effectiveness

Joint crisis plans (JCPs) are recommended by the NICE guideline on service experience of mental health services.[54] This reflects positive evidence from an early RCT[121] conducted in the UK and also qualitative evidence of UK service users' experience.

However, a more recent larger-scale UK RCT in people with psychosis[122] did not identify any benefits of JCPs. Thornicroft *et al.*[122] found that JCPs did not reduce risk of hospitalisation under the Mental Health Act[4] (OR 0.90, 95% CI 0.58 to 1.39). This might reflect difficulties in fully implementing JCPs in routine clinical practice.[122]

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Cost-effectiveness

Flood *et al.*,[123] based on the data from the earlier Henderson *et al.* trial,[121] conducted a cost-effectiveness analysis based on a NHS and PSS perspective and also took into account criminal justice costs. The authors found no statistically significant differences in costs and they concluded that there was a 78% probability that JCPs were more cost-effective than treatment as usual. However, Barrett *et al.*,[124] based on the more recent larger UK trial,[122] found that JCPs were not cost-effective.

Borderline personality disorder

Joint crisis plans

Clinical effectiveness

A recent pilot study,[125] also conducted in the UK, of people with BPD found that the evidence that JCPs reduce self-harm is inconclusive (OR 1.90, 95% CI 0.53 to 6.5). Although consistent with the data from qualitative studies, there was a high level of acceptability, with 85% of service users stating that they would recommend the intervention.

Cost-effectiveness

Borschmann *et al.*,[125] also based on UK data, found no statistically significant differences in costs between JCPs and treatment as usual. However, as there were no differences in clinical effectiveness, this would suggest JCPs are not a cost-effective option.

Strengths-based approaches to recovery

Vocational rehabilitation

The NCCMH[28] identified three types of vocational rehabilitation:

1. prevocational training (receive training as preparation for seeking competitive employment)
2. supported employment (attempts to place service users in competitive employment immediately)
3. modifications of vocational rehabilitation programmes (either prevocational training or supported employment that includes techniques to increase motivation).

Clinical effectiveness

Thirty-eight RCTs were included in the NCCMH[34] review of vocational rehabilitation in people with serious mental illness. Supported employment was found to be the most effective method for obtaining competitive employment and for any occupation (i.e. paid/unpaid or voluntary), but only 4 of the 18 trials were conducted in the UK.

There was strong evidence that supported employment was more clinically effective than pre-vocational training (RR 0.63, 95% CI 0.56 to 0.72; GRADE rating, moderate; 18 studies, $n = 3627$) in gaining competitive employment or any occupation (RR 0.70, 95% CI 0.56 to 0.87; GRADE rating, very low; seven studies, $n = 1043$).

Although no benefit was found in UK studies, this may reflect the fact that there were insufficient studies to reliably identify an effect.

Supported employment (standard or modified) was more clinically effective than non-vocational training (RR 0.46, 95% CI 0.25 to 0.85; GRADE rating, very low; three studies, $n = 2277$), but the evidence was rated as very low quality. High-quality evidence from one study involving 2055 participants found that supported employment was more clinically effective than non-vocational training on quality of life and occupational employment outcomes (e.g. obtaining an occupation, earnings or hours worked per week).

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There was no evidence that prevocational training was more effective than non-vocational control for gaining competitive employment or increasing earnings, although there was very low-quality evidence to suggest that pre-vocational training was more effective for obtaining any occupation.

Evidence from one trial ($n = 107$) found that combined supported employment and prevocational training was more effective than supported employment alone in obtaining competitive employment (RR 0.23, 95% CI 0.13 to 0.39; GRADE rating, moderate).

Cost-effectiveness

Two cost-effectiveness analyses conducted in the UK were identified in the NCCMH[34] review. However, both analyses were based on small studies with methodological limitations. Therefore, the NCCMH conducted economic modelling to assess the cost-effectiveness of a supported employment programme compared with treatment as usual based on the supported employment versus non-vocational training meta-analysis discussed above in *Clinical effectiveness*.

They adopted a NHS and PSS perspective and the outcome measure was QALYs. Supported employment programmes were found to be cost-effective compared with treatment as usual because of a low ICER (£5723 per QALY) that was below the threshold set by NICE.

Peer support

Clinical effectiveness

There have been over nine non-systematic narrative reviews of peer support and one systematic review published more than 10 years ago. Therefore, the NCCMH[34] conducted a new systematic review on the clinical effectiveness of peer support. For further details on the methods and results see Lloyd-Evans *et al.*[68]

The NCCMH[34] distinguished three types of peer support: mutual support groups (where relationships are reciprocal in nature), peer support services (where support is provided by a peer support worker to one or more participants), and peer mental health services (where people who have used mental health services provide part or all of standard care provided by service).

The authors identified 16 RCTs on peer support [nine on peer support services (mean 43% had diagnosis of psychosis or schizophrenia), four on mutual support services (mean 42% had diagnosis of psychosis or schizophrenia) and three on peer mental health service providers (mean 68% had diagnosis of psychosis or schizophrenia)]; in all trials, the intervention groups were compared with a control group. The quality of evidence based on GRADE criteria ranged from low to very low.

Peer support services were associated with some positive effects on self-rated recovery (four trials) and functional disability (one trial), but no differences were found on empowerment or quality of life compared with control (two trials). Three studies found that people receiving peer support were more likely to have greater contact with services, but there was no conclusive evidence of benefits on hospitalisation or service user satisfaction. No follow-up data were available.

Three trials found evidence of benefit of mutual support groups in improving self-rated empowerment, quality of life and contact with services at the end of intervention. There was no evidence of benefits on hospitalisation, functional disability or service user satisfaction.

One trial on peer mental health service providers found that service users in the control group were more satisfied than those in the intervention group. It was unclear if receiving peer mental health services reduced risk of hospitalisation, and no data were reported on empowerment, recovery, functional disability or quality of life.

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The NCCMH[34] concluded that the benefits of peer-provided interventions were inconclusive in terms of both magnitude and direction of effect. Although there was some evidence of benefit, all outcome data were rated as low- or very low-quality evidence because of study design limitations and high heterogeneity across studies. These conclusions contrast with previous narrative reviews that have tended to emphasise positive findings from low-quality evidence. This might partly reflect that some of these reviews included a large number of non-randomised studies whose findings have yet to be replicated in more rigorous trials.[68]

Cost-effectiveness

No UK cost-effectiveness analyses were identified by the NCCMH.[34] We identified one cost-effectiveness analysis based on a cluster RCT conducted in the UK.[126] This was judged to be a well-conducted study. There were no statistically significant differences between the peer support service and usual care. The incremental cost per unit of improvement on the Beck Hopelessness Scale was £12,555.

Self-management

Clinical effectiveness

The NCCMH[34] included 25 RCTs in the review of self-management: 21 evaluated professional-led self-management and four evaluated peer-led self-management. A mean of 80% of participants in each study had a diagnosis of psychosis or schizophrenia. GRADE ratings ranged from very low to high.

Ten RCTs found evidence of benefit for self-management in reducing positive and negative symptoms of psychosis at the end of treatment, but no differences were found at follow-up. Benefits on total psychosis symptoms were inconclusive.

Five RCTs found that the risk of admission in the short term was lower in the self-management group, but there was no evidence of benefit at end of intervention or medium- or long-term follow-up.

There was inconclusive evidence for differences between the self-management and control groups on self-rated empowerment at end of intervention. However, there was evidence of benefit for self- and clinician-rated recovery, based on seven RCTs. No differences were found on functional disability at follow-up.

The NCCMH[34] concluded that self-management appeared effective in reducing symptoms of psychosis and aiding recovery, but the evidence was less conclusive regarding the effect on the risk of hospitalisation.

Cost-effectiveness

No cost-effectiveness analyses were identified by the NCCMH.[34]

Other strengths-based approaches

Ibrahim *et al.*[69] conducted a systematic review of strengths-based approaches. Five trials were included in the meta-analysis (four RCTs and one quasi-experimental study). Of these, one trial compared strengths-based case management with ACT, three trials compared strengths-based case management with standard care and one trial compared strengths-based case management with traditional case management services. Our GRADE ratings for all outcomes judged the evidence to be of very low quality.

A further three trials (one RCT and two quasi-experimental studies) were included in the narrative synthesis. Two trials compared strengths-based case management with standard case management services and one trial compared a strengths-based case management with treatment as usual.

Ibrahim *et al.*[69] found that the evidence as to whether or not strengths-based approaches were effective for level of functioning and quality of life was inconclusive. However, they found that the control group was more effective than strengths-based case management on psychotic symptoms, although this was mainly due to one study that was an extreme outlier (SMD = 40).

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Risk of bias was unclear for most studies and there was high heterogeneity for all outcomes, reflecting substantial differences in both the interventions and comparison groups. In addition, many studies were conducted in the 1980s and 1990s, and the extent to which such studies can be generalised to current UK services was unclear. It was therefore not possible to conclude if strengths-based approaches are more effective than control approaches.

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Chapter 6 Discussion

Principal findings

Access to support before crisis point

There is evidence from studies of a range of disorders that telephone support and triage result in quick access and acceptable referral decisions, and there is minimal evidence of harm. However, at present there are very limited data in relation to the use of telephone support and triage for providing support to people before the point of mental health crisis.

In addition, studies that have assessed the benefits of training and supporting primary care and community-based staff have not identified any clearly beneficial models.

The NICE guidelines[54] on access to support before crisis point overlap largely with the recommendations from the Crisis Concordat[3] and the London Strategic Network[1] commissioning guide on the importance of receiving care with a minimum of delay, the importance of quick referral (either through self-referral or building links between mental health services, primary care and third-sector organisations) and equality of access. However, these are largely based on expert consensus and require further research.

Urgent and emergency access to crisis care

This review identified 15 studies relevant to urgent and emergency access to crisis care. Overall, studies were at high risk of bias and GRADE ratings ranged from low- to very low-quality evidence. These limitations, particularly the lack of randomised and cluster randomised trials, should be considered when interpreting the results.

Nine studies were conducted on improving access to crisis care and service user outcomes in the ED. Most of these studies evaluated liaison psychiatry models in which a liaison psychiatry team, a psychiatrist, or psychiatric nurse was located in the ED providing assessment, triage and treatment. The RAID model (conducted in the UK) found large reductions in risk of readmission, which potentially could lead to large savings in bed-days (bed savings largely occurred on geriatric wards), although controlled trials are needed to replicate these findings. Psychiatric liaison models mostly (although a large UK study implementing a psychiatric nursing service in EDs was not found to be effective) led to reductions in waiting times and improved service user satisfaction.

Providing educational interventions to ED staff may improve outcomes, but this was based on only two studies and neither was conducted in the UK; therefore, the extent to which their findings are applicable is unclear. One study found a large reduction in violent behaviour for people accessing the ED following a suicide attempt. Another study reported that services which received educational interventions prescribed less medication overall, but were more likely to prescribe medication appropriate for the psychiatric condition they were treating. There is a need for rigorously designed randomised and cluster randomised trials conducted in the UK to inform whether or not this is a promising approach to improving mental health crisis care.

Six studies were conducted on improving access to crisis care and service user outcomes when police were called out to mental health-related calls; many of the studies were primarily descriptive, with limited comparative data. In addition, only one study was conducted in the UK, which was also primarily descriptive.

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There were two main intervention models: model (1) evaluated the effect of health- or social-care staff providing street triage or telephone triage for police officers attending mental health-related calls and model (2) provided police officers training in dealing with mental health-related calls.

Findings from one UK study suggested that providing telephone triage from a liaison psychiatry team may have reduced the number of detentions under the Mental Health Act, but it was not possible to confirm this because of the limitations in how the data were collected. Over time, the use of a street triage crisis team appeared to reduce police time at the scene of suicide calls and also may have resulted in greater engagement in treatment for mental health service users, but these findings were based on limited evidence from non-UK studies.

Mental health training did not appear to substantially influence the level of force used in mental health-related calls, but police officers with mental health training were more likely to transport people to a health-care setting and were less likely to arrest people with mental health problems. There was also some evidence for greater efficiency for police officers with mental health training resulting in shorter reported durations of Mental Health Act events and less 'dead time' waiting to hand over individuals to health-care staff. All studies provided limited data and none was conducted in the UK.

Quality treatment and care in crisis

Crisis resolution and home treatment teams were found to be both clinically effective and cost-effective, with benefits including substantial reductions in probability of hospital admission and greater service user satisfaction. Studies conducted in the UK were largely consistent with those conducted in other health systems. However, the quality of evidence for all studies was rated low because of the small number of studies, high risk of bias in included studies, and high heterogeneity. Reviews of factors affecting the clinical effectiveness and cost-effectiveness of CRHTTs found a great deal of variability when implementing these interventions.

Although there is no evidence that crisis houses or acute day hospitals are more effective than inpatient treatment, they also do not appear to be associated with greater readmissions than inpatient care. In addition, crisis houses are often associated with greater satisfaction than standard services. Therefore, both crisis houses and acute day hospitals are recommended as options by NICE as alternatives to inpatient treatment.

In terms of conflict and containment in inpatient mental health services, the evidence is largely based on descriptive studies with few controlled trials. Bowers *et al.*[63] propose a Safewards model as a foundation for future research on inpatient treatment. They propose six factors that influence conflict and containment: (1) staff team; (2) physical environment; (3) outside hospital; (4) patient community; (5) patient characteristics; and (6) regulatory framework. An intervention based on this model has recently been tested in a cluster randomised trial, which found evidence of reductions in conflict and containment compared with controls. However, full results, at the time of this report, have not yet been published.

Promoting recovery/preventing future crises

Promoting recovery and staying well covers a large and diverse literature. We have sought to review this literature primarily by drawing on systematic reviews conducted for the purpose of informing NICE mental health guidelines. We highlight effective interventions recommended by NICE below.

In terms of service models, we identified evidence of benefit for EISs for people with psychosis and other serious mental illnesses based largely on data from the UK. ICM was effective based on the international literature but there was limited evidence of clinical effectiveness based on the UK literature. Collaborative care was effective for depression.

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There were also benefits found for the use of antidepressants for people with depression and antipsychotics for people with psychosis and lithium for people with bipolar disorder in preventing relapse and reducing the risk of hospitalisation.

There were a number of clinically effective and cost-effective individual-level psychosocial interventions. For people with psychosis, CBT and family intervention were associated with reduced hospitalisation and risk of relapse. For people with bipolar disorder, psychological interventions were generally associated with reduced risk of hospitalisation and relapse, although it was not possible to distinguish which types of psychological interventions were more likely to be clinically effective and cost-effective. This was similar for psychological interventions for people who self-harm: there was evidence of reduced risk of repetition of self-harm, but it was not possible to identify which types of psychological intervention were most likely to result in benefits for service users. For people with BPD, DBT and MBT both appeared clinically effective in reducing risk of self-harm, hospitalisation and a range of other outcomes, although DBT has a much larger evidence base. For people with depression, CBT was found to be associated with reduced relapse rate there is some indication that MBCT maybe a particularly helpful approach.

In terms of strengths-based interventions, self-management was found to be associated with benefits for a range of outcomes. Peer support maybe clinically effective and cost-effective, but further research is needed to confirm this. Supported employment was found to help people with psychosis and other serious mental illness gain employment, although the number of UK studies is still relatively sparse.

Joint crisis plans are recommended by NICE,[54] but more recent trials have found that implementing these interventions in routine practice may be challenging.

Limitations and future research

A common limitation across all four major elements of the care pathway was a general lack of rigorous randomised and cluster randomised trials evaluating models of mental health crisis care. Further high-quality trials conducted in the UK would have a considerable impact on reducing uncertainty regarding what the most clinical effective and cost-effective models of care for the treatment of people experiencing mental health crisis are. Specific challenges for each of the four main elements of the care pathway are summarised in *Access to support before crisis point*, *Urgent and emergency access to crisis care*, *Quality treatment and care in crisis* and *Promoting recovery/preventing future crises*.

Access to support before crisis point

There were limited data on the clinical effectiveness and cost-effectiveness of most interventions for improving access to support before mental health crisis. However, this is an active area, with many current developments and service initiatives occurring in the UK.[2] This may provide important opportunities to evaluate the benefit of these interventions in providing access to support before mental health crisis and also stimulate further, more formal high-quality research activity that informs future service development.

Urgent and emergency access to crisis care

The included studies had a number of limitations. Many studies were primarily descriptive with limited comparative data. Most studies did not control for confounding either in design or in the analysis, which substantially limits the strengths of our conclusions. In addition, although there are some positive findings, often these were based on a single study or a small number of studies, or there was a complete lack of UK studies.

Therefore, further and better-quality research is needed for improving outcomes both in the ED and for police officers attending mental health-related calls. There is need for more comparative data obtained in UK studies that aim to minimise confounding, either through design (e.g. cluster randomised trials) or, where that is not possible, through extensive adjustment for potential confounders in the analyses.

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Quality treatment and care in crisis

For most interventions we have found limited or inconclusive evidence. This largely reflects the difficulty of conducting research on the clinical effectiveness and cost-effectiveness of inpatient and alternatives to inpatient treatment, but also reflects the need for more high-quality evidence to inform mental health crisis treatment.

Crisis resolution and home treatment teams were found to be both clinically effective and cost-effective, with benefits including substantial reductions in probability of hospital admission and greater service user satisfaction. However, the quality of evidence was rated low because of the small number of studies, high risk of bias in included studies and high heterogeneity. Reviews of factors affecting clinical effectiveness of CRHTTs found a great deal of variability when implementing these interventions. Currently, the CORE study, funded by the NIHR and directed by Sonia Johnson at UCL, has designed a resource pack to aid adherence to principles of best practice based on a fidelity scale developed for the study.[111] They are also currently testing whether or not fidelity to the CORE model is associated with better outcomes based on an evaluation of 25 CRTs.

Promoting recovery/preventing future crises

Limitations of the review

The scope for this section of the review is extremely broad; therefore, inevitably, any approach to summarise such a large body of literature within the time scale and resources of this review will have limitations. We limited our review of individual-level interventions to those recommended by NICE. Although this encompasses much of the relevant literature, it is possible important approaches may not have been covered. For example, there is promising evidence on the benefits of personal budgets for promoting choice and control, quality of life and service use among people with mental health problems.[127]

Limitations of the evidence base

Although there is a wide-ranging literature on improving symptoms, social functioning and personal recovery, there is still very little on preventing repeat use of acute care and relapse of mental health problems after discharge from crisis services. In addition, evidence on the clinical effectiveness and cost-effectiveness of interventions to reduce risk of self-harm and suicide is very limited. Further research is needed on the clinical effectiveness and cost-effectiveness of low-intensity psychosocial interventions and psychological interventions with problem-solving elements for people who self-harm. In addition, as harm reduction approaches are being used by some mental health services in the UK, observational research to assess the benefits and potential risks of such interventions is needed.

In addition, very few data on the clinical effectiveness and cost-effectiveness of models of care for older adults and people from LGBT communities were identified.

A further limitation is that most evidence was rated as being of low or very low quality. This reflects the need for better-quality trials. However, this also reflects the challenges of conducting complex interventions in this area. Given the diversity and complexity of the populations and intervention components, it is not surprising that high heterogeneity in estimates of clinical effectiveness is common, and attempts to minimise risk of bias are often difficult to implement. However, recent methodological advances in the conduct of complex interventions should be better taken into account in future mental health research.

There was positive evidence for the benefits of strengths-based interventions such as supported employment and self-management, and some positive evidence for peer support. This is a developing body of literature and it is likely future trials with relevance to the UK may substantially impact on our conclusions. For example, a promising pilot study entitled 'Connecting People a social intervention for promoting recovery in people with mental health problems' is currently being conducted in the UK (for further details on intervention development see Webber *et al.*[128]).

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Some large-scale UK studies of peer support are currently in progress, for example the ENRICH project, funded by the NIHR (ENRICH project led by a joint team from South West London and St George's Mental Health NHS Trust and St George's, University of London). This RCT will compare the effects on a peer worker intervention with usual care for service users about to be discharged from a psychiatric ward, on readmission rates, experience of discharge and cost of services.

Mind is currently developing a peer support programme to improve access to peer support through funding from Big Lottery. The project aims to deliver peer support to 6000 people and provide peer support for 2400 people. In addition, the project also aims to measure changes in participant outcomes, assess cost-effectiveness and conduct a process evaluation.

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Chapter 7 Conclusions

Implications for practice

Access to support before crisis point

- NICE recommends services should ensure that people at risk of mental health crisis receive care with minimum delay and quick referral (either through self-referral or building links between services) and that there is equality of access to such care.

Urgent and emergency access to crisis care

- Although there is evidence of benefits for liaison psychiatry teams in improving waiting times and reducing readmission, this is largely based on uncontrolled studies and a lack of data from the UK.

Quality treatment and care in crisis

- Crisis resolution teams are more clinically effective than inpatient care for a range of outcomes, although implementation of this model of care varies across the UK with few teams meeting all evidence-based criteria for good practice.
- Crisis houses and acute day hospitals appear as clinically effective as inpatient treatment, but are associated with greater service user satisfaction.

Promoting recovery

- Clinically effective service models include EISs for people with psychosis and other serious mental illnesses and collaborative care for depression (particularly for people with chronic physical health problems).
- Clinically effective pharmacological interventions include antidepressants for people with depression, lithium for people with bipolar disorder and antipsychotics for people with psychosis.
- Clinically effective individual-level strengths-based interventions include self-management and supported employment. There is also some evidence for benefit for peer support (but this needs further high-quality research to validate these findings).
- Individual-level interventions with evidence of benefit include for people:
    - with psychosis: CBT, family interventions
    - with bipolar disorder: psychological interventions
    - who self-harm: psychological interventions
    - with BPD: DBT and MBT
    - with depression: CBT (particularly MBCT).
- Crisis planning is currently recommended by NICE, although more recent research has raised questions regarding the clinical effectiveness of this intervention, therefore further research is needed on whether or not this is an effective approach to promote recovery.

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Recommendations for research

Access to support before crisis point

- Most current recommendations and service developments are based on expert opinion with limited research in this area. Rigorous evaluation of current service developments is needed to ensure evidence-based and effective support for service users.

Urgent and emergency access to crisis care

- Potential benefits of liaison psychiatry teams are based on limited evidence; therefore, confirmation of the clinical effectiveness and cost-effectiveness of these models of care in high-quality trials (e.g. cluster randomised trials) is needed.
- Data on clinical effectiveness and cost-effectiveness of mental health training of police officers, street triage and telephone triage to assist police officers with potentially mental health-related incidents is very limited and requires rigorous high-quality evaluation.

Quality treatment and care in crisis

- Current work from the CORE study aims to improve implementation of good practice in CRTs and is an important component of improving quality treatment for people in crisis.
- Further work is needed to examine the clinical effectiveness and cost-effectiveness of various aspects of inpatient care on service user outcomes.

Promoting recovery

- Many of the key service models, to provide long-term management and treatment of mental health problems, lack a clear evidence base (e.g. CMHTs, ICM); therefore, further developments are needed.
- There is a key need to develop models of care that reduce self-harm, suicide and relapse after discharge from crisis services and inpatient treatment.
- Large-scale studies are currently under way to investigate the clinical effectiveness and cost-effectiveness of peer support, which is a key area of uncertainty.
- Interventions on improving social networks and social capital are also important developments currently being evaluated in the UK.
- Interventions to promote equality of access to mental health services for BME populations are needed.

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Fiona Paton (Research Fellow) was involved in all stages of the rapid synthesis from development of the protocol, through screening studies and data extraction to analysis and synthesis and production of the final report.

Kath Wright (Information Service Manager) conducted literature searches and contributed to the protocol, methods and appendices sections of the report.

Nigel Ayre (Community Development Worker) provided advice throughout the rapid synthesis process and commented on the draft report.

Ceri Dare (Service User Representative) provided advice throughout the rapid synthesis process and commented on the draft report.

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Data sharing statement

All available data is included in the appendices of the report.

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Appendix 1 Search strategies

Guidelines

NHS Evidence database

URL: www.evidence.nhs.uk.

Date range searched: January 1999 to 24 June 2014.

Date searched: 24 June 2014.

Search strategy

"mental health crisis"

Systematic reviews

Database of Abstracts of Reviews of Effects, NHS Economic Evaluation Database and the Health Technology Assessment database

URL: www.crd.york.ac.uk/CRDWeb/.

Date range searched: January 1999 to 25 June 2014.

Date searched: 25 June 2014.

Search strategy

Line #	Search line
1	mental health crisis
2	mental health crises
3	mental health
4	mental* ill*
5	mental* disorder*
6	psychiatric
7	psychotic
8	schizophren*
9	bipolar
10	#3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9
11	crisis or crises or emergenc* or acute
12	#10 AND #11
13	#1 OR #2 OR #12

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Cochrane Database for Systematic Reviews

URL: www.cochranelibrary.com/.

Date range searched: January 1999 to 25 June 2014.

Date searched: 25 June 2014.

Search strategy

1. mental near/4 (crisis or crises)
2. (mental* ill*) near/2 (crisis or crises or acute or emergenc*)
3. (mental* disorder*) near/2 (crisis or crises or acute or emergenc*)
4. psychiatric near/2 (crisis or crises or acute or emergenc*)
5. psychotic near/2 (crisis or crises or acute or emergenc*)
6. schizophren* near/2 (crisis or crises or acute or emergenc*)
7. bipolar near/2 (crisis or crises or acute or emergenc*)
8. #1 or #2 or #3 or #4 or #5 or #6 or #7

Primary studies on urgent and emergency access to crisis care

MEDLINE

URL: http://apps.webofknowledge.com/MEDLINE_GeneralSearch_input.do?product=MEDLINE&search_mode=GeneralSearch&SID=X2fdHm7zzdb9lIN1K5I&preferencesSaved=.

Date range searched: January 1999 to 11 November 2014.

Date searched: 11 November 2014.

Search strategy

1. mental health crisis.ti,ab.
2. mental health crises.ti,ab.
3. (mental health emergency or mental health emergencies).ti,ab.
4. (psychiatric adj (crisis or crises or emergency or emergencies)).ti,ab.
5. 1 or 2 or 3 or 4
6. Emergency medical Services/ or Emergency Services, Psychiatric/
7. Police/
8. Emergency medical Technicians/
9. Allied health Personnel/
10. (paramedic$ or police$ or fireman or fire officer$ or firemen or firefight$ or fire fighter$ or first responder$).ti,ab.
11. (ambulance adj (staff or personnel or officer$ or worker$)).ti,ab.
12. 6 or 7 or 8 or 9 or 10 or 11
13. 5 and 12
14. Mental disorder/
15. mental health.ti,ab.
16. (mental$ adj disorder$).ti,ab.
17. (mental$ adj ill$).ti,ab.
18. Schizophrenia/
19. schizophren$.ti,ab.
20. exp Personality Disorders/
21. 14 or 15 or 16 or 17 or 18 or 19 or 20

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22. 12 and 21
23. crisis intervention/
24. 12 and 23
25. 13 or 22 or 24
26. limit 25 to yr="1990 -Current"
27. (editorial or comment or letter).pt.
28. 26 not 27

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Appendix 2 Crisis Resolution Team Fidelity Checklist (CORE study)

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CORE Crisis Resolution Team Fidelity Scale *Version 2*

Developed by Brynmor Lloyd-Evans, Sonia Johnson and the CORE Research Group. [The CORE CRT Fidelity Scale constitutes independent research funded by the NIHR under its Programme Grants for Applied Research programme (Reference Number: RP-PG-0109–10078). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the DH.] www.ucl.ac.uk/core-study.

Enquiries to Brynmor Lloyd Evans –Division of Psychiatry, University College London.

The CORE Programme is managed by Camden and Islington NHS Foundation Trust and University College London.

Please do not use or adapt without permission from the developers.

CORE Crisis Resolution Team Fidelity Scale

#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
1	The CRT responds quickly to new referrals	P, M M, S, O (P) M, S, O (P) M, S, O (P) M, S, O (P) M, S, O (P)	(a) The CRT records and monitors response times to referrals and reviews breaches of response targets (b) The CRT responds to the referrer within 30 minutes (c) The CRT offers an assessment with the service user which takes place within 4 hours for at least 90% of appropriate referrals (d) The CRT offers a same-day assessment for at least 50% of appropriate referrals made before 6pm (e) The CRT offers a same-day assessment for at least 90% of appropriate referrals made before 6pm (f) The CRT provides an immediate mobile response to requests for assessment from emergency services 5: 6 Criteria are met 4: 5 criteria are met 3: 4 criteria are met 2: 3 criteria are met	• Criterion A: Score as met if the CRT provides a log of the time period between receiving a referral and providing a face-to-face assessment and the CRT manager clearly describes processes used to review breaches of response times • Criterion B: requires all-source agreement from the CRT manager, staff and managers of other services that the CRT always answers phone calls from referrers in person, or routinely responds to the referrer within 30 minutes (no more than one breach per month) • Criteria B-E: Do not include early discharge clients for % meeting response times: an immediate response is less crucial for inpatient referrals • If no log of response times, all source agreement from CRT manager, staff and other community staff is required to assess criteria as met regarding response time to referrers and time to assessment	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
			1: 2 or fewer criteria are met	• Criterion F: requires all-source agreement from CRT staff and manager and other service managers that the CRT will go urgently to assess someone at a police station, their home or in public if requested by emergency services (e.g. police or ambulance crews) + evidence from the CRT team of at least one example of this happening within the last month	
2	The CRT is easily accessible to all eligible referrers	P, M, S, O SU, FF, M, S M, S, O P	Scoring criteria: (a) The CRT has no paperwork preconditions before referral (b) The CRT is directly contactable for referrals by phone (c) The CRT decides whether to assess clients directly following referral and does not ask another service to assess them first (d) The CRT contact details and referral routes are publicly available 5: all 4 criteria are met 4: 3 criteria are met 3: 2 criteria are met 2: 1 criterion is met 1: no criteria are met	This item only assesses how easily accessible the CRT is to eligible referrers. [The range of eligible referrers is assessed in item 3] • Criterion A: no paperwork preconditions = the CRT does not require referrers to complete any forms or provide any paperwork or electronic records for their referral to be accepted • Criterion B: Directly contactable by phone = direct number, answered in person by clinical staff or an administrator who puts the caller directly through to clinical staff; not routine use of a paging service or administrator who asks a clinician to call back • Criterion C: Referrals via an assessment service/Single Point of Access may count as direct as long as the CRT then follows the Single Point of Access decision re acceptance for CRT care without reassessment. [Score as unmet if the CRT directs service users to an Accident and Emergency Psychiatric Liaison Team, the GP or other service following contact with the CRT by an eligible referrer. Also score as unmet if the Single Point of Access and CRT between them do not provide a direct point of access 24 hours a day, 7 days a week]	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
				• Criterion D: Publicly available contact details and referral routes = as a minimum on the organisation's own or local health authority website. Crisis contact details and referral routes to the CRT must both be publicly available for this criterion to be met. Do not score as met unless the reviewing team can readily retrieve these details from a search of 'crisis services' or 'how to get help in a crisis' from the organisation's website. Reviewing team to attempt to assess ahead of review how readily they can find these	
3	The CRT accepts referrals from all sources	P, M, S, SU, FF, O	Scoring criteria: accepts referrals from: (a) all secondary mental health services (b) GPs (c) other health services (d) emergency services (e) agencies other than health services which support people with mental health problems (f) known service users and their families (g) new service users and their families 5: all criteria are met 4: 6 criteria are met 3: 4 criteria are met 2: At least 3 criteria are met 1: 2 or fewer criteria are met	• Criterion A: Secondary mental health services includes: community mental health services, inpatient wards and Psychiatric Liaison services • Criterion C: Examples of other primary care staff include; GP practice nurses, health visitors, midwives. Other NHS agencies include general hospital services. Referrals should be accepted from all of these for the criterion to be met • Criterion D: Emergency services to include police, ambulance and fire services • Criterion E: Non-health agencies to include at minimum: voluntary sector mental health services; housing services for whom people with mental health problems are a focus; substance misuse services and statutory social services • Criterion F: known service users = service users who have previously used the CRT • Criterion G: new service users = service users not previously known to the CRT, including service users not known to any other mental health service	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
				• The CRT may be scored as accepting direct referrals even if referrals are routed through a Single Point of Access or Crisis Line, as long as referrals triaged as crisis referrals following initial contact are either: a) referred on to the CRT directly; or b) Offered a prompt crisis assessment, with referrals for CRT care then accepted by the CRT without further assessment	
4	The CRT will consider working with anyone who would otherwise be admitted to adult acute psychiatric hospital	P, M, S, O	Scoring criteria: will work with the following in circumstances where they would otherwise be admitted to an acute mental health ward: (a) Personality disorder (b) Drug and alcohol problems (c) Learning difficulties (d) Age 16 + (unless specific youth or older age crisis services cater for these groups) (e) AND written service guidance/protocol clearly specifies and publicises these criteria 5: all 5 criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: One or no criteria are met	• Criteria B and C do not require the CRT to work with people who only have a learning difficulty or a drug or alcohol problem – but people who have these difficulties should not be excluded if they also have a mental health problem which would otherwise lead to hospital admission • To meet criterion D, CRTs should offer a service to adults 16 + with non-organic mental health problems (i.e. CRTs do not have to offer a service to people with dementia or brain injuries to meet this criterion) unless Child and Adolescent or Older People's mental health services have separate CRTs catering for under 18s or over 65s • Do not score criterion E as met unless criteria A-D are all met and written guidance clarifies these inclusive referral criteria	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
5	The CRT provides a 24 hour, seven day a week service	M, S, SU, FF, O	5: The CRT visits service users at home, when needed, 24 hours a day, seven days a week 4: The CRT visits service users at home at least 14 hours per day, and can provide telephone support and assessments at health service premises at other times 3: The CRT visits service users at home at least 12 hours a day, and can provide telephone support and assessments at health service premises at other times 2: The CRT visits service users at home less than 12 hours per day but can provide telephone support and assessments at health service premises at other times 1: The CRT does not provide telephone support and assessments on health service premises 24 hours a day	• To score 5, the CRT must provide waking night staff who can and do visit enrolled service users or make new assessments at any time when needed (all source agreement) • To score more than 1 on this item, the CRT must provide 24 hour telephone support/advice to enrolled service users and their families AND assess new service users on health service premises 24 hours a day, 7 days a week	
6	The CRT has a fully implemented 'gatekeeping' role, assessing all patients before admission to acute psychiatric wards and deciding whether they are suitable for home treatment	M, S, O (P) P, M, S, O	Scoring criteria: (a) The CRT assesses in person at least 90% of voluntary admissions to psychiatric hospital (b) The CRT assesses in person at least 98% of voluntary admissions to psychiatric hospital (c) The CRT assesses in person at least 67% of compulsory admissions to psychiatric hospital (d) The CRT assesses in person at least 90% of compulsory admissions to psychiatric hospital (e) The CRT assesses in person at least 90% of people brought to a place of safety by the police before a decision to admit to hospital is made (f) The CRT and acute wards have systems to identify and review failures in gatekeeping and plan to avoid recurrences	• Criteria A, B, C, D and E: If there are no gatekeeping records, these criteria may be marked as met if there is clear, all-source agreement they are met. Score only regarding gatekeeping to acute psychiatric wards (not planned admissions to rehabilitation wards or similar) • Assessment in person means face-to-face meeting between the CRT and the service user: do not count telephone assessment or consultation as assessment in person • Criteria C&D: Do not include forensic admissions mandated by the legal system in assessing this item (i.e. in England and Wales, the % of patients admitted under Sections 2,3 and 4 who have been assessed in person by the CRT for suitability for home treatment should be used to rate this criterion)	

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			5: all criteria are fully met 4: 5 criteria are met 3: 4 criteria are met 2: 3 criteria are met 1: 2 or fewer criteria are met	• Criterion E: This section refers to people brought to hospital by the police under section 136 of the Mental Health Act or international equivalents • Criterion F: evidence should include: written monitoring/log of gatekeeping + evidence of regular process or specific action to address breaches of policy	
7	The CRT facilitates early discharge from hospital	M, S, O (P) M, S, O (P) M, S, O (P) P, M, S M, S, O (W), SU, FF M, S, O (W), SU, FF	Scoring criteria: (a) CRT staff attend all acute wards serving the CRT catchment area at least three times per week to screen all service users for potential early discharge (b) CRT staff assess in person for early discharge for at least 50% of voluntary patients or patients detained for assessment in local acute wards (c) CRT staff assess in person for early discharge for at least 80% of voluntary patients or patients detained for assessment in local acute wards (d) At least 20% of the CRT's caseload are service users being supported with early discharge from hospital (e) The CRT facilitates a patient leaving the ward within 24 hours for at least 90% of patients identified by the CRT and ward staff as ready for early discharge (f) There is all-source agreement that the CRT offers a same-day home visit to CRT service users discharged from hospital 5: all criteria are met 4: 5 criteria are met 3: 4 criteria are met 2: 3 criteria are met 1: 2 or fewer criteria are met	• Criteria A, B and C: agreement from CRT manager, staff + ward managers/staff required + any paper records • Criterion A: For criterion A to be met, CRT staff must discuss all patients with ward staff regarding readiness for early discharge, but CRT staff need not meet the patients • Criteria B and C could be met by CRT staff attending ward rounds or otherwise meeting patients in person • Criterion D: If no audit data is available, mark as unmet if: either fewer than 20% of current CRT caseload are early discharges OR there is not a clear consensus among CRT manager and staff that at least 20% are usually early discharges • Criteria E and F: all source agreement required from CRT manager, staff, service users and carers + ward managers • Criterion E: Requires the CRT to facilitate discharge from the ward within 24 hours for at least 90% of patients identified as needing and ready for early discharge – not 90% of all inpatients	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
8	The CRT provides explanation and direction to other services for service users, carers and referrers regarding referrals which are not accepted	M, S M, S, O M, S, O M, S, O (P)	Scoring criteria: (a) The CRT manager and staff team identify clear care pathways and available sources of support for service users requiring urgent help but not requiring hospital admission or CRT care (b) There is all-source agreement that the CRT provides a written response phone or face-to-face contact to referrers for service users assessed in person but not taken on, explaining their decision and identifying appropriate sources of support where needed (c) The CRT will refer in person to appropriate sources of support for service users not using other mental health services assessed in person but not taken on (d) The CRT monitors referrers for accepted and declined referrals and provides clear guidance about referral thresholds, especially for those who frequently make referrals that are not accepted 5: all 4 criteria are met 4: 3 criteria are met 3: 2 criteria are met 2: 1 criterion is met 1: no criteria are met	• Criterion A: This criterion requires all-source agreement that other sources of prompt help (i.e. within 3 days) are available locally for people experiencing a crisis but not one so severe as to be at risk of hospital admission. It also requires evidence from staff and manager interviews of clear consistent understanding of care pathway and available support for people needing sub-acute, urgent help. This criterion might be met by a Mental Health Assessment/Intake Team which can respond promptly to new referrals. Do not score this criterion as met if only GP and A&E are suggested • Criterion B: Score as met if there is all source agreement from CRT manager, staff team and other mental health service respondents that the CRT routinely provides referrers with explanation regarding referrals not accepted and help locating other sources of support • Criterion C: Score as met if there is all-source agreement that the CRT will refer in person to other services for service users if they are not currently linked with other mental health services. Do not score as met if the CRT only signposts/provides information to GPs or service users, but will not make referrals on	

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				• Criterion D: evidence is required that: a) clear information about the thresholds and levels of risk at which CRT support is available is accessible to referrers; b) the CRT discusses and clarifies these thresholds with referrers whose referrals are frequently not accepted. Score as met based on paperwork review and CRT manager/staff report as long as no contradiction from other service managers	
9	The CRT responds to requests for help from service users and carers whom the CRT is currently supporting	P, M, S, SU, FF M, S, SU, FF (P) M, S, SU, FF (P) M, S or C, SU, FF	Scoring criteria: Service users and carers are all given a contact phone number for the CRT (a) Phone calls from service users or carers using the CRT are answered in person by a clinician able to give advice (b) The CRT achieves for at least 90% of calls a response time of 1 hour or less for response by a CRT clinician able to give advice (c) The CRT achieves for at least 90% of calls a response time of 20 minutes or less for response by a CRT clinician able to give advice (d) The CRT schedules additional same-day home visits where needed in response to enrolled service users' and families' requests for help 5: All 4 criteria are met 4: 3 criteria are met 3: 2 criteria are met 2: 1 criterion is met 1: no criteria are met	• Automatically score 1 if enrolled service users and carers are not given a contact number for the CRT • Criterion A: Directly contactable by phone = direct number, answered in person by clinical staff or an administrator who puts the caller directly through to clinical staff; not a paging service or administrator who asks a clinician to call back • Criteria B and C: may be scored as fully met if there is all source agreement the time target is met – even if no audit data is available • Criterion D: This is met if staff team and manager both confirm that it is frequent practice to schedule additional same-day visits in response to urgent need (i.e. this occurs at least every other day). Mark as unmet if case note review or SU and family feedback suggests additional visits are not scheduled in response to urgent needs	

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10	The CRT is a distinct service which only provides crisis assessment and brief home treatment	M, S (P) P, M, S, C P, M, S, C M, S, O, C M, S, O, C	Scoring criteria: (a) CRT staff's work involves crisis assessment and home treatment at least 95% of the time (e.g. not also delivering A&E liaison or a more general community assessment or continuing care service) (b) At least 70% service users stay with the CRT < 6 weeks (c) At least 90% service users stay with the CRT < 6 weeks (d) There is all-source agreement that the majority of service users accepted for treatment would have otherwise been admitted to hospital (e) There is all-source agreement that at least 90% of service users accepted for treatment would have otherwise been admitted to hospital 5: 5 criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criterion is met 1: 1 or no criteria are met	• Criterion A: Requires agreement from staff and CRT manager. Staffing a broader assessment service/ Single Point of Access, A&E liaison or continuing care services constitute non-CRT work. [Exact information regarding the proportion of time spent by CRT staff in different roles is not required – just all-source agreement that not more than 5% is spent in non-CRT roles] • Criterion B and C: length of stay = length of stay in active treatment, not phone support pre/post discharge: consult case notes, any audit data re length of stay + CRT staff and manager • Criteria D and E: Do not include service users accepted from acute wards for early discharge in calculating the percentage of service users who would otherwise have been admitted to hospital • Criterion D requires at least 50% who would otherwise have been admitted; criterion E requires at least 90% • Criteria D and E require all-source agreement from CRT staff and manager and respondents from other services, and reviewers' confirmation from case note review Score this item as unmet if sources suggest the CRT works regularly (more than 10% of the team caseload) with service users who need some help but would not otherwise have been considered imminently for admission to hospital	

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11	The CRT assertively engages and comprehensively assesses all service users accepted for CRT support	C M, S, O	Scoring criteria: (a) A structured assessment is carried out documenting: i) circumstances of the presenting problem and potential triggers for the crisis; ii) mental state examination; iii) symptoms; iv) current medication and adherence; v) family and social network; vi) social functioning including difficulties with employment, housing and finances; vii) substance misuse; viii) risks and safety; ix) strengths, goals and treatment preferences; x) personal and psychiatric history (or reference to where it is already accessible in patient records); xi) involved carers' views; xii) religion/spirituality and religious needs (b) The CRT uses assertive engagement strategies to assess service users in person if there are difficulties making initial contact 5: Assessments documenting at least 9 domains are completed with at least 90% of service users and the CRT uses assertive engagement strategies 4: Assessments documenting at least 8 domains are completed with at least 90% of service users and the CRT uses assertive engagement strategies 3: Assessments documenting at least 8 domains are completed with at least 80% of service users 2: Assessments documenting 7 domains are completed with at least 80% of service users 1: Assessments documenting at least 7 domains are completed with fewer than 80% of service users	• Criterion A: Score based on case note review. Score as met if the CRT conduct a joint assessment with another service, or have access to and use an assessment conducted by another secondary mental health service (e.g. a single point of access) within the previous two days • Criterion B: requires all source agreement from CRT manager, staff and other community service staff. Examples of assertive engagement include: repeated visits if service user not present; phone calls to involved family or others if the service user is difficult to contact or initially reluctant to meet the CRT • Reviewers please double check with services that all relevant assessment documents are available to reviewers. (E.g. this item may be met if history or religion is recorded in an updated core assessment, separate from the CRT's new initial assessment)	

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12	The CRT provides clear information to service users and families about treatment plans and visits	M, S, SU, FF C, SU, FF SU, FF SU, FF, S SU, FF, S SU, FF, S	Scoring criteria: (a) Written information about the CRT, its role and contact details is provided to all service users and carers present at initial assessment (b) A written treatment plan identifying the interventions the CRT will provide is provided to all service users and involved family/carers within 4 working days (c) Home visits and meetings with CRT staff are arranged the day before for at least 80% of service users currently on the caseload (d) Service users are given a definite time, or a window of time of not more than one hour, at which visits will occur (e) CRT staff arrive within an hour of the planned time at least 80% of the time (f) Service users are phoned in advance if CRT staff will be more than 15 minutes late at least 80% of the time 5: All criteria are met in full 4: 5 criteria met 3: 4 criteria are met 2: 2 or 3 criteria are met 1: 1 or no criteria are met	• Criterion A: All source agreement from CRT manager, staff, service users and families • Criterion B: score based on case note review and report from service users and family: > 80% receive within 4 working days • Criterion C: requires all source agreement from service users, carers and CRT staff that this happens > 80% of the time (unless the service users prefers visits to be arranged on the day): do not count initial assessments or additional visits scheduled in response to an urgent need in assessing this criterion • Criterion D: requires all source agreement from service users, carers and CRT staff that this happens at least 80% of the time (Do not count initial assessments in scoring this item) • Criteria E and F: require all source agreement from service users, carers and CRT staff • Score criterion E as automatically unmet if service users are given a window of more than two hours for the time of visits • Criterion F: If CRT staff offer a window of time in which they will arrive, they must phone in advance if they do not arrive within the specified time period at least 80% of the time	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
13	The CRT closely involves and works with families and wider social networks in supporting service users	C (SU, FF) C (SU, FF) C (SU, FF) C (SU, FF) SU, FF, S	Scoring criteria: (a) Initial assessment or treatment plans identify the key people in service users' family or social network; (b) The CRT have documented attempts to contact at least one key family or other person in their social network for all service users; (c) At least one involved family member or other person in the social network is invited to care planning or review meetings, where the service user's consent is given; (d) An individualised role for at least one involved family member or other person in the social network in treatment plans is identified in service users' treatment plans/case notes, where the service user's consent is given (e) There is all-source agreement that the CRT works closely with families in supporting service users *(Criteria A-D: Met = provided for at least 80% of service users)* 5: All 5 criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: 1 or no criteria are met	1. Criteria A-D: Include any informal support – i.e. family or friends, or other supportive professionals not directly linked to mental health services (e.g. a teacher, faith leader or youth worker). Do not include mental health service staff or other staff arranged through mental health services (e.g. social care support workers) in assessing this item 2. Criteria A – D: use case note review as basis for scoring this item. If apparently met, check no disagreement re criteria C and D with service user and family/friends interviews: if major disagreement from these interviews, score criterion as not met 3. Criteria A and B: To be scored as met, case notes should document attempts to identify and contact at least one family member, friend or other person in social network, even if they are not involved in an active caring role at the time of assessment 4. Criteria C-D: An involved family member is defined as: anybody living with the service user or who has daily contact with them, or is otherwise identified as a carer by the service user, CRT or other mental health services 5. Criteria C-D: When scoring, do not include service users for whom a thorough initial assessment stated there were no involved family or friends in scoring whether these criteria are met. Consider these criteria as unmet if case notes did not record whether or not there is an involved family member	

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				6. Criterion D: This criterion may be met if case notes record any role for a family member or other key person in the service user's network which is: designed to support the service user's recovery from a crisis; is specific to the service user's individual circumstances and needs; and has been agreed between the CRT and the family member/other key person 7. Criterion E: all source agreement = clear prevailing view from service users, carers and CRT staff that the CRT does involve and work closely with families	
14	The CRT assesses carers' needs and offers carers emotional and practical support	C, FF C, FF C, FF S (P)	Scoring criteria: (a) The CRT offers involved families/carers the opportunity to meet CRT staff separately from the service user to discuss their own support needs (b) The CRT provides involved carers/families with information about local services for carers (e.g. welfare advice, carers groups) (c) The CRT specifically records (using a structured form or as part of assessment/ treatment plans) carers' needs and a support plan and provides the carer with a written copy (d) The CRT staff demonstrate a clear, shared understanding of how carers may be supported even where service users refuse permission to share information with carers *(A-C: met = at least 80% of service users with an involved family member/carer)* 5: All criteria are met 4: 3 criteria are met 3: 2 criteria are met 2: 1 criterion is met 1: No criteria are met	• Involved carers should include anyone who lives with a service user or sees them every day, or is otherwise identified as a carer by the service user, CRT or other mental health services • Criteria A-C: base on evidence from case notes and interviews with family/friends • Criterion C: there need not be a formal social services carer's assessment for these items to be met: evidence of any agreed, written support plan is sufficient, with confirmation from carers that they are provided with a written copy • Criterion D: CRT staff in the staff interview must provide reference to a policy or a clear shared understanding with examples of how family might be supported if no permission to share information has been obtained for this criterion to be met	

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15	The CRT reviews, prescribes and delivers medication for all service users when needed	M, S (P) M, S (P, C) C, SU, FF, M, S P, S	Scoring criteria: (a) The CRT team includes staff who can review and prescribe medication daily (b) The CRT has access to out-of-hours medication review and prescription (c) The CRT collects and delivers medication for service users up to twice a day where needed (d) The CRT has written medication policies and procedures which are well understood by CRT staff *(Refer to scoring guidance for thresholds for fully and partially met criteria)* 5: All criteria are fully met 4: 3 criteria are fully met and one partially met 3: 3 criteria are fully met and one unmet OR two are fully met and two partially met 2: 2 criteria are fully met and at least one unmet OR all 4 are partially met 1: Only one criterion is fully met OR < 4 are partially met	• Criterion A: score as fully met if the CRT team includes psychiatrists or non-medical prescribers with capacity to perform medication reviews 7 days per week; score as partially met if the CRT team includes psychiatrists or non-medical prescribers at least 4 days per week. (Do not score this criterion as met if the CRT relies on non-CRT team members for medication reviews) • Criterion B: Score as fully met if the CRT can access out of hours medical review 7 days per week; score as partially met if available at least 4 days per week; or if every day but not all night/all weekend. Do not score this item as met if the CRT relies on contacting the service user's own GP or out-of-hours GPs • Criterion C: score as partially met if medication delivery is only available for some psychotropic medicines, or only once per day. For criterion C to be fully met, all-source agreement is required and a concrete example of twice daily medication delivery must be seen from case notes or service user or carer interviews, or an example from within the last week should be otherwise provided by the CRT • Criterion D: Score as partially met if there is evidence of policy in paperwork but CRT staff report lack of awareness or adherence to policy in the CRT staff interview For all criteria: check no discrepant evidence in case note review	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
16	The CRT promotes service users' and carers' understanding of illness and medication and addresses concerns about medication	S, P C (SU, FF, S) C, SU, FF, S C, SU, FF, S C C, M, S	Scoring criteria: (a) CRT staff have access to and awareness of materials to give to service users regarding diagnosis and the nature of their mental health problems (b) Side effects are monitored with evidence of review or response to identified side effects with at least 80% of service users on psychotropic medication (c) Service users and involved carers are provided with written details of the current medication regime (d) Service users and involved carers are provided with written and oral information about the rationale, desired effect and possible side effects of prescribed medication (e) Service users' current adherence to prescribed medication is documented for at least 80% of service users (f) Strategies to aid medication adherence are implemented when non-adherence is identified 5: All criteria are met 4: 5 criteria are met 3: 4 criteria are met 2: At least 2 criteria are met 1: 1 or 0 criteria are met	• Criterion A: Score as met if the CRT manager provides psycho-educational materials in paperwork review and > 50% of staff report awareness and use of psycho-educational materials • Criterion B: score based on case note review: if apparently met, check no disagreement from service users, family and staff interviews • Criteria C and D: Score as met if there is consensus from staff, service users and carers and case notes. Do not score this item as met if CRT staff only alert service users to the information provided within medication packets: evidence of use of more user-friendly explanatory materials is required • Criterion E: score based on case note review • Criterion F: Examples of adherence strategies include: simplified medication regimes, choice in the form in which medication is provided (e.g. liquid forms of medication, injections, smaller or fewer tablets; motivational interviewing or Adherence Therapy; personalised adherence strategies (e.g. support from family, set alarm on mobile phone): Evidence of at least two strategies being used must be available to score this criterion as met. Use of dosette boxes is not sufficient as evidence of adherence strategies being used. Criterion F requires all-source agreement from CRT manager, staff team and case notes	

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17	The CRT provides psychological interventions	P, M S, C C, S M, S M, S	Scoring criteria: (a) The CRT team includes a qualified psychologist practitioner or accredited CBT therapist at least 0.4 full time equivalent who sees CRT service users (b) CRT staff demonstrate capacity to deliver brief psychological interventions to CRT service users and families (c) Brief psychological interventions are provided to > 30% of CRT service users (d) CRT staff can access direct psychological consultancy input from a psychologist practitioner or accredited CBT therapist regarding any service user where needed (e) eRT staff are provided with supervision or training in delivering psychosocial interventions from an experienced clinician at least every 2 months (> 80% of the staff team) 5: all 5 criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: One or no criteria are met	• Criterion A: Score based on paperwork review and manager interview. Psychologist practitioner = a qualified clinical or counselling psychologist. Accredited CBT therapist = qualified therapist with accreditation from national body (e.g. UK BACBP register) (Do not include psychology graduates without clinical qualification in scoring this item) • Criterion B: To score as met, the reviewers require three examples from within the last month of a brief psychological intervention being provided by a member of the CRT team – from the CRT staff team interview or case note review, or otherwise shown to reviewers by the CRT • Criterion C: Score based on case note review + checking with CRT staff there are supervision arrangements for CRT staff providing psychological interventions (e.g. regular reflective practice meets or group supervision, or use of 1:1 Consultations with a psychologist practitioner or CBT therapist • Brief psychological interventions for items B and C may include either: brief psychological interventions is broadly defined here: – examples include: cognitive behavioural therapy, solution-focused therapy, family therapy, motivational interviewing, mindfulness therapy, structured coping strategy enhancement, use of mood or activity diaries, structured problem solving; use of manualised programmes e.g. for anxiety management or sleep management	

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				• Criteria D and E: require agreement from staff and manager interviews to be scored as met. Criterion D requires access to consultancy from a psychologist practitioner or accredited CBT therapist. Criterion E may be met if group or individual clinical supervision/training is provided by any clinician with training and experience in delivering brief psychological interventions (in addition to individual management supervision)	
18	The CRT considers and addresses service users' physical health needs	C (M, S, SU) C, SU, FF, M, S C (M, S, SU) M, S	Scoring criteria: (a) Service users' physical health problems are asked about and documented in initial assessments (at least 80% of service users) (b) There is all source agreement that the CRT facilitates access to physical health investigations and treatments during CRT care for those with identified physical health problems (c) The CRT provides or arranges (or confirms provision during the last 12 months) screening for cardiovascular risk factors for at risk service users who consent to this (at least 80% of service users) (d) The CRT has working equipment and facilities and appropriately skilled personnel to carry out weight and blood pressure checks, urine testing for glucose levels 5: All criteria are met 4: Three criteria are met 3: Two criteria are met 2: One criterion is met 1: No criteria are met	• Criteria A and C: Score primarily on case note review: if met in case notes, check no disagreement from manager, staff or service user interviews re access to treatment and cardiovascular risk screening • Criteria B: Requires three examples within the last month from case note review, interviews or other documented examples provided by the CRT of help being provided with physical health needs. Do not score as met unless the clear prevailing view from case notes, service user and family respondents is that physical health problems are addressed by the CRT where necessary • Criterion C: score based on case note review. Cardiovascular risk screening required = *smoking, blood pressure, BMI diabetes, total/HDL cholesterol.* Service users at high risk of cardiovascular disease (CVD) are those with history of CVD, on anti-psychotic medication or tricyclic anti-depressants • Criterion D: based on CRT staff and manager interviews: score only as met if equipment/facilities are available, in working order and there are current CRT staff able to use them	

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19	The CRT helps service users with social and practical problems	C, M, S, SU, FF	Scoring criteria: The CRT helps service users with the following life domains: (a) Basic living needs (e.g. ensuring access to food, heating and helping with immediately required cleaning or repairs) (b) Benefits and debts (e.g. ensuring access to essential benefits/sources of income + assistance with urgent debt management) (c) Urgent legal and social problems (e.g. assistance with urgent criminal justice matters; threats to current employment; threats to housing tenure) 5: All three life domains are fully addressed by the CRT 4: 2 life domains are fully supported and 1 is partially supported 3: 2 life domains are fully supported and one is not supported; or all 3 domains are partially supported 2: One life domain is not supported and at least one other is only partially supported 1: Two or three life domains are not supported	• Criteria A-C: Fully met = some evidence from case notes and service user and carer interviews that these types of help are provided and wherever identified as needs; partially met = most evidence, including CRT staff and manager, suggests CRT does usually address these issues but disagreement from one or more sources or lack of clear evidence from case notes or service users and families • Criteria A-C: if there is an absence of any concrete examples from case note review or service user interviews, items may be scored as fully met if the CRT manager can provide other documented evidence of three examples of the relevant interventions being provided within the last month Do not score criterion A as fully met unless the CRT has immediate access to petty cash to meet service users' urgent living needs (e.g. to top up utilities, buy food)	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
20	The CRT provides individualised care	C (SU, FF) SU, FF (C) C	Scoring criteria: (a) Service users' individual needs and goals are recorded in initial assessments or treatment plans (fully met = individualised needs and goals recorded clearly for at least 90% of service users; partially met = some record of needs or goals at least 70% of service users) (b) There is agreement from all sources that CRT treatment and support reflects service users' individualised needs and goals (c) CRT intervention includes some form of intervention in addition to medication review/ delivery, risk assessment and referral on to other services (fully met = at least 90;% partially met = at least 70%) 5: All criteria are fully met 4: At least one criterion is fully met and the others are partially met 3: All criteria are partially met OR two criteria are fully met and one is unmet 2: Two criteria are partially met and one is unmet OR one criterion is fully met and two are unmet 1: one or no criteria are partially met; others are unmet	• Criteria A and B: To score these as fully met, there should be clear evidence that the CRT is assessing and addressing needs and goals specific to the individual – i.e. beyond the generic needs of anyone in mental health crisis – to help them get well, and to monitor risks • Criterion A score primarily with reference to case notes: if apparently met, check no disagreement from service users and family to rate as fully met • Criterion B: Score with reference to service user and carer interviews; if apparently met, check no contradictory information in case notes. (clear prevailing view from both sources with not more than one respondent in any group reporting that care is not individualised = fully met; majority view from both sources but with more than one respondent disagreeing that care is individualised = partially met) • Criterion C: score based on case note review: interventions to help with any social, practical, psychological or physical health need may be included in assessing this criterion	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
21	CRT staff visits are long enough to discuss service users' and families' concerns	P P, C (M) P (SU, FF, M, S) S, SU, FF	Scoring criteria: (a) The CRT has a written policy regarding length of visits which includes stipulation that on any day in which the CRT visits a service user, at least one visit should be at least 30 minutes duration (b) The CRT records and monitors duration of visits and takes action if too many visits are excessively brief (c) At least 80% of service users are visited for at least 30 minutes on one visit on days when they are seen by the CRT (d) All sources agree visits by CRT staff are not limited to specific, pre-planned tasks, but allow discussion of service users' and families' concerns and priorities 5: All criteria are fully met 4: Criteria C and D are met, but one of criteria A or B is not met 3: Criteria C and D are met but criteria A and B are not met 2: Criterion C OR criterion D is not met 1: Neither criterion C nor D is met	• Criterion A: score based on paperwork review. Score as met if service policy stipulates a minimum duration for visits (of at least half an hour) OR a minimum total duration of care (of at least one hour) to be provided each day • Criterion B: evidence of duration of visits required from separate log or in client case notes; if brief visits identified, evidence of response required from CRT manager • Criterion C: if no log of visit duration, score this item as fully met if all source agreement that one visit a day is routinely at least 30 minutes • Criterion D: All source agreement (staff, service users, family) required to meet this criterion	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
22	The CRT prioritises good therapeutic relationships between staff and service users and carers	M M, S P, M SU, FF (C, S, M, O)	Scoring criteria (a) Recruitment involves procedures explicitly designed to identify staff with good interpersonal skills when working with service users (b) The CRT takes steps to monitor and develop all CRT staff's interpersonal skills with service users and families (c) The CRT explicitly seeks feedback from service users (e.g. via survey or audit) within the last year and demonstrates action to address resulting concerns and complaints (d) There is all source agreement that staff are caring and professional in working with service users and families 5: All criteria are met 4: Criterion D is fully met and 2 other criteria are met 3: Criterion D is fully met but fewer than two other criteria are met 2: Criterion D is partially met 1: Criterion D is unmet	• Criterion A: Examples of recruitment procedures: service user representation on interview panel; role play/interview questions to directly assess interpersonal skills; other explicit means to recruit staff with capacity to engage in positive therapeutic relationships • Criterion B: Examples of steps to develop interpersonal skills: field mentoring from CRT manager or senior staff for at least 90% staff within the last year to monitor/ supervise interpersonal skills; whole team-training involving role play with feedback from service users or carers re interpersonal skills [Field mentoring = the CRT manager or senior staff accompanying other staff on visits to service users, to observe their performance, record this and provide feedback] • Criterion C: requires evidence of audit/feedback from paperwork review and an example from the CRT staff or manager of an action taken in response to feedback within the last 12 months • Criterion D: Assess primarily through interviews with service users and family/ carers. If apparently met, reviewers should check there is no evidently contradictory evidence in case notes or from staff and manager interviews, or interviews with other managers. Mark as fully met if the clear prevailing view from all sources is very positive that relationships with staff are good and staff are warm, non-judgemental and caring. Mark as partially met if the clear prevailing view from all sources is generally positive but with some reservations. (Do not automatically rate as unmet based on negative feedback from a single respondent)	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
23	The CRT offers service users choice regarding location, timing and types of support	P (M, S, SU, C, O) SU (C) SU, FF, S SU, FF, S	Scoring criteria: (a) Accepting medication is not a precondition for receiving CRT care (b) Service users' preferences regarding treatment options are considered and reflected in treatment plans (c) The CRT meets service users in a range of locations (not just a casualty department or hospital sites) where home visiting is not possible or not wanted by the service user (d) The CRT arranges the time of visits to fit around service users' or carers' preferences or commitments (e.g. work, childcare) 5: All criteria are met 4: Criterion A and 2 other criteria are met 3: Criterion A and 1 other criterion are met 2: Criterion A and no other criteria are met 1: Criterion A is not met	• Criterion A: If no written policy, score as fully met if all source agreement from CRT manager and staff, service users, case notes, other community service staff • Criterion B: Score as met if there is a clear prevailing view among service user interviewees that they were asked about their preferences regarding treatment and that support provided by the CRT took account of this. If apparently met, check there is no contradictory evidence from case note review • Criteria C and D: Agreement from all sources that this is achieved for at least 80% of service users/families (staff, service users, families)	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
24	The CRT helps plan service users' and service responses to future crises	C C C, P, S, SU C, SU, FF, M	Scoring criteria: (a) The CRT develops or reviews partial relapse prevention plans with service users (b) The CRT routinely develops thorough relapse prevention plans with service users (c) CRT staff help service users to use structured self-management programmes to promote recovery or respond to future difficulties (d) The CRT has systems to help service users develop advance directives where appropriate and to ensure existing advance directives are followed wherever possible 5: All criteria are met in full 4: Three criteria are met 3: Two criteria are met 2: One criterion is met 1: No criteria are met	• Criterion A: Score based on case note review. Score as met if multiple early warning signs of relapse and a crisis plan involving more than just contacting the crisis team are recorded for at least 60% of service users • Criterion B: Score based on case note review. Score as fully met if a personalised relapse prevention plan, including personal triggers, early warning signs, coping strategies and service responses is present for at least 80% of service users • Criterion C: examples of self-management resources are: recovery plans or structured symptom management programmes e.g. anxiety management. Score based on paperwork review, case note review and staff interviews. Score as met if: self-management resources are shown to reviewers; and CRT staff and manager agree that at least 50% of the staff team help service users with self-management resources; and any use of self-management resources is evident from case note review or service user interviews • Criterion D: Score as met if there is any evidence of the use of advance directives from the case note review or service user and family interviews. If no evidence is available from these sources, also score as met if the CRT manager can provide other evidence of an advance directive being developed or used by the CRT within the last month. [An advance directive is a written document shared with mental health services detailing a service user's decisions and preferences regarding their treatment should they lose mental capacity and the ability to make informed choices during a crisis]	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
25	The CRT plans aftercare with all service users	C (S, O, SU, FF) C (S, O, SU, FF) C (S, O, SU, FF) C (S, O, SU, FF) S, SU, FF S, SU, FF	Scoring criteria: (a) The CRT discusses and agrees plans for ending CRT care and follow-on care with other involved secondary mental health services before a service user is discharged from the CRT (b) The CRT makes referrals to health services and other organisations identified to provide support post-discharge wherever additional support is required (c) A discharge meeting is arranged and service users and involved family are invited to attend (d) Other involved mental health services attend the discharge meeting (e) A written discharge plan identifying providers of support following discharge from the CRT is provided to service users (f) Details of how to access crisis help in the future are provided to the service user and involved family members 5: All criteria are met 4: Criterion A and 4 other criteria are met 3: 4 criteria are met 2: At least 2 criteria are met 1: No or one criteria are met	• Criteria A-D: base score initially on case note review: if apparently met, check no disagreement from CRT staff, other mental health staff, service users or carers (Met = provided to at least 80% of service users where relevant) • Criteria E and F: overall all source agreement from staff, service user and family/friends interviews	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
26	The CRT prioritises acceptability to service users in how CRT care is ended	C, S, SU, FF C, S, SU, FF C, S, SU, FF S, SU, FF (C) S, SU, FF (C)	Scoring criteria: (a) Service users and involved family are given at least 48 hours' notice before discharge from the CRT (excluding hospital admission) (b) The CRT discusses with service users and involved family regarding how and when CRT care should end (c) The CRT will 'taper' care i.e. planned decrease in frequency of care before discharge to meet service users' needs and preferences (d) Service users or families may contact the CRT directly for support or advice for at least 2 weeks following discharge (regardless of general referrals policy) (e) There is all source agreement that the CRT provides service users and families with information about other services they could access following CRT discharge 5: All criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: 1 or no criteria are met	• Criteria A –E: require all source agreement from case notes, CRT staff, service users and family/friends • Criterion E: requires all-source agreement that the CRT provides information, where relevant, about a range of types of support which the service user can access after discharge. Do not score as met if the CRT only provides details of how to access crisis help again following discharge	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
27	The CRT has adequate staffing levels	P, (M) M, S, SU, FF M, S, O P (M, S)	Scoring criteria: (a) The CRT caseload of service users receiving acute home treatment is not too high (Fully met = median CRT caseload is no more than 25 per 14 full time equivalent clinical staff; partially met = median CRT caseload is no more than 30 per 14 full time equivalent clinical staff (b) There is all source agreement that the CRT has the resources to carry out same day crisis assessments and home visits to CRT service users (c) There is all-source agreement that the CRT has the resources to offer home treatment wherever possible to all service users who would otherwise be admitted or who may benefit from early discharge (d) More than 80% of CRT staff (over the last three months) are permanent staff (not locum, bank or agency staff) 5: All criteria are fully met 4: Criterion A is fully met and two other criteria are met 3: Criterion A is fully met and one other criteria is met OR Criterion A is partially met and all other criteria are met 2: Criterion A is partially met and no more than two other criteria are met 1: Criterion A is not met	• Criterion A: Define active caseload as service users seen at least every other day for home treatment: do not include service users seen infrequently for tapered end to contact or phone support or inpatient service users being monitored for possible early discharge. If no median data on caseload size are available, check current and typical caseload size with CRT manager. If the CRT also fulfils other roles (e.g. running the local liaison psychiatry service, or a broader single point of access), reviewers should seek an estimate of the number of full time equivalent staff available to work on the crisis home treatment service • Criterion B: requires all source agreement from CRT manager and staff, service users or carers that visits have not been cancelled or changed from home visits to office-based appointments at the CRT because of staffing levels more frequently than one day per month • Criterion C: requires all-source agreement from CRT manager and staff, and managers of other inpatient and community services that CRT case loads are never capped or referrals declined due to staffing levels • Criterion D: If no records available re bank/agency staff, score as fully met if agreement between CRT manager and staff	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
28	The CRT has a psychiatrist or psychiatrists in the CRT team, with adequate staffing levels	P, M P, M M, S, O	Scoring criteria: (a) Total psychiatric cover is at least 1.0 full time equivalent (fte) per median CRT caseload size of 30, involving some cover on at least 5 days per week (fully met); at least 0.6 fte per caseload of 30 involving some cover on at least 3 days per week (partially met) (b) Total consultant psychiatrist time is at least 0.6 fte per median caseload of 30 involving some cover on at least 3 days per week (fully met); at least 0.3 fte per caseload of 30 (partially met) (c) The CRT can obtain advice and arrange urgent psychiatric assessments within 4 hours for CRT service users from a psychiatrist within the local service system throughout the CRT's opening hours 5: All criteria are fully met 4: 2 criteria are fully met and one is partially met 3: 2 criteria are fully met and one is not met OR one criteria is fully met and two are partially met 2: Only one criterion is fully met and at least one is unmet 1: No criteria are fully met	• Criteria A and B: see item 27 re calculating median caseload size • Criteria C: requires clear explanation from CRT manager how external psychiatric advice/ assessments are arranged + agreement from manager, staff and relevant other mental health service manager/staff. This item should not be scored as met if the CRT relies on advice/assessments from GPs for any of its opening hours	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
29	The CRT is a full multi-disciplinary staff team	P, M	Scoring criteria: CRT staffing includes dedicated time from: i) nurses; ii) occupational therapists; iii) clinical or counselling psychologists; iv) social workers; v) psychiatrists; vi) service user-employees; vii) other support staff without professional mental health qualifications; viii) pharmacists ix) Approved Mental Health Professionals or equivalent; x) non-medical prescribers; xi) family therapist; xii) accredited cognitive behavioural therapist 5: The CRT team includes 8 or more of the listed staff groups 4: The CRT team includes 7 of the listed staff groups 3: The CRT team includes 6 of the listed staff groups: 2: The CRT team includes 5 of the listed staff groups 1: The CRT team includes 4 or fewer of the listed staff groups	• AMHP or equivalent = a non-medical professional with a legally specified role in assessment for compulsory detention in hospital. Score this as met even if the staff member does not do AMHP work at the CRT as they will bring specialist knowledge of legal criteria and thresholds for detention • Service user- employee = employee who has used secondary mental health services and identifies themselves as such in their work, but not necessarily employed in specific peer support role • Examples of other support staff without professional mental health qualifications include: recovery workers, assistant psychologists, graduate mental health workers • family therapist = post-graduate family work/therapy qualification (Do not include staff with undergraduate qualifications or equivalent only) • Direct CRT employees or dedicated sessional time exclusively for the CRT (e.g. from pharmacist or family therapist) both count for scoring this item	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
30	The CRT provides a thorough induction programme for new staff and ongoing training and supervision in core competencies for CRT staff	M, S (P) M, S, P M, S (P) P P	Scoring criteria: (a) Induction for new staff involves at least 12 hours of CRT-specific training for staff who have not previously worked in CRTs (b) At least 80% of CRT staff have received supervision at least monthly during the last 6 months (c) The CRT has a programme of ongoing CRT service-specific training for CRT staff with sessions at least every two months (d) The CRT manager or senior staff conduct field mentoring of at least 80% CRT staff at least once each year (e) At least 80% of CRT staff have had a formal appraisal within the last year 5: all 5 criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2criterion is met 1:1 or no criteria are met	• Criterion A-D: Look at records/protocols of induction and training and logs of supervision/field mentoring if available • Criterion A: Do not include generic organisational (e.g. NHS Trust) inductions for all staff in scoring this item – include CRT-specific induction and training only • Criterion B: include both clinical supervision (group or individual) by manager or senior clinician and individual management supervision in scoring this item. (Do not count shift handovers or regular clinical review meetings as group supervision in scoring this item.) Monthly supervision is required for full time staff: pro-rata supervision is acceptable for part time staff (e.g. every two months for someone employed 0.5 full time equivalent) • Criteria B, D and E: these items require evidence from paperwork/records that the CRT manager records and monitors frequency of supervision, field mentoring and appraisals • Criterion D: Requires a written log or record of field mentoring to be scored as met. [Field mentoring = the CRT manager or senior staff accompanying other staff on visits to service users, to observe their performance, record this formally and provide feedback. Do not score this criterion as met if the CRT manager merely goes out with staff in the event of staff shortages, but does not formally use this as a training activity] • Criteria A and C: may be met if there is all-source agreement from CRT staff and manager	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
31	The CRT has comprehensive risk assessment and risk management procedures, including procedures for safeguarding children and vulnerable adults living with CRT service users	C C C P M, S M, S	Scoring criteria: (a) Risk assessment: a structured risk assessment proforma is used documenting identified risks of self-harm or suicide, self-neglect, exploitation by others and harm to others + clearly identifying contact with children and vulnerable adults and potential related risks to them for at least 80% of service users (b) Risk management: there is an individualised risk management plan covering all identified risks, which states the current CRT response and plans in the event of an increase in risk, for at least 80% of service users (c) There is evidence that risk assessments and management plans are reviewed by staff during CRT care and changed where appropriate as perceived risks change and/or management plans require change (d) CRT staff training in safeguarding children and vulnerable adults is up-to-date in line with service guidelines and staff show awareness of thresholds for contacting other agencies; (met = at least 80% of staff team trained within time period specified in national and local guidelines) (e) High risk service users are identified and prioritised at CRT team level (e.g. specifically discussed at handovers, on team boards); (f) The CRT can provide staff to stay with service users at home for extended periods (up to 4 hours) to manage risks in exceptional circumstances (e.g. carer absence, start of medication)	• Criteria A and B: score based on case note review. Score as unmet if assessments/management plans are not fully completed, even if a risk assessment/plan exists for at least 80% of service users • Criterion B: mark as unmet if risk plans display no individualisation (i.e. if they are hard to differentiate plans for different service users), even if plans are present for at least 80% of service users. To be met, risk management plans should include where appropriate; names of others who can help and individualised risk reduction strategies and plans considered for all children living with CRT service users • Criterion C: Score as met if there is some evidence in case notes of risk assessments and management plans being amended/updated in case note review (Score as unmet if all risk assessments and plans remain unchanged throughout the period of CRT care or if there is evidence from case notes of obvious failure to update risk assessment in response to changing circumstances) • Criterion D: Requires paperwork/records evidence that safeguarding training is monitored and up to date in line with national and local requirements • Criteria E and F: score based on clear articulation from manager of processes for identifying/prioritising high risk service users and arranging extended stays + agreement from CRT staff and managers that these processes are followed	

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			5: All criteria are met 4: 5 criteria are met 3: 4 criteria are met 2: 3 criteria are met 1: Two or fewer criteria are met	Reviewers please double-check you are shown all relevant risk documents (e.g. if risk updates or contingency plans are stored separately from an initial risk assessment)	
32	The CRT has systems to ensure the safety of CRT staff members	P, S, M M, S P M, S P, S, M	Scoring criteria: (a) The CRT/local organisation has clear lone worker and safety check-in policies which are adhered to (b) The CRT adopts practical solutions where required to allow a service to be provided to higher risk service users (e.g. visits in pairs, same gender workers, facilities to see service users on health service premises) (c) At least 80% of staff are up to date with local safety training procedures (e.g. 'break away' or conflict resolution training) (d) The CRT manager or senior staff provide same day debriefing/reflection for CRT staff following a threatening or upsetting incident (e) Serious untoward incidents involving staff safety are specifically recorded and reviewed at least annually to identify necessary changes to safety arrangements 5: all criteria are met 4: Criteria A and B and two other criteria are met 3: Criteria A and B are met and fewer than 2 other criteria are met 2: Either criterion A or criterion B is not met 1: Criterion A and criterion B are both not met	• Criteria A and E: require all source agreement from paperwork, staff and manager to be scored as met • Criteria B and D: agreement required between CRT manager and staff to score these items as met • Criterion C: requires paperwork/electronic training record to be scored as met • Criterion D: to score as met, the CRT manager and staff must both describe a clear process by which senior staff are always alerted to an upsetting incident and discuss with staff involved and check their welfare. Do not score as met merely based on report that the manager has 'an open door' or is generally available	

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33	The CRT has effective record keeping and communication procedures to promote teamwork and information sharing between CRT staff	M, S M, S M, S M, S (C) M, S	Scoring criteria: (a) The CRT has handover meetings between each CRT shift (b) All day time shifts start with handovers reviewing clinical status and immediate action steps for all current CRT service users (c) The CRT has whole-team meetings at least once per month to address staff issues, team procedures and organisation (clinical discussions of clients are not held at this meetings) (d) CRT staff contacts with service users are written up in patient records the same day at least 90% of the time (e) CRT staff have immediate out-of-office access to read and write patient records 5: all criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: 1 or no criteria are met	• Criterion A-E: require agreement between CRT manager and staff to be met • Criterion D: score as met if unanimous shared understanding from staff and manager that case notes must be written the same day and that this is adhered to + no evidence from case note review of late record writing • Criterion E: requires access for staff to complete notes while working out of office (e.g. using tablets): not sufficient for staff to be able to access notes from a computer at their home	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
34	The CRT works effectively with other community services	C (S, O, SU) C, S, M, O M, S O M, S O M, S O	Scoring criteria: (a) Communication and joint meetings between CRT and involved staff from other community mental health services are evident for at least 80% of service users with involved community services during CRT care (b) CRT discharge plans and treatment summaries are routinely sent to GPs and involved mental health services promptly (within 3 days) at the end of CRT care (for at least 80% of service users) (c) The CRT has an identified link worker or equivalent for at least one key community mental health service who visits the service at least monthly to discuss joint working issues (d) CRT and community mental health service managers meet at least every two months to review care pathways and referral protocols and address issues re joint working (e) There is all source agreement that there are good working relationships between the CRT and other community teams 5: All criteria are met 4: Criterion A and E and two other criteria are met 3: At least 3 criteria are met 2: 2 criteria are met 1: One or no criteria are met	• Criterion A: score initially based on case note review: if apparently met, check no contradiction from CRT staff, service users and other community mental health staff that joint working occurs at least 80% of the time • Criterion B: all source agreement from case notes, CRT staff and manager and other service managers • Criteria C, D and E: all source agreement required: CRT manager, staff and other community service managers	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
35	The CRT takes account of equality and diversity in all aspects of service provision	M, S (C, SU, FF) P, M M, S P, M, S SU, FF (C, M, S)	Scoring criteria: (a) The CRT can access interpreters to attend in person/video conference within 24 hours and by phone within 4 hours for at least 90% of service users for whom this is needed (b) The CRT monitors service accessibility (c) The CRT team broadly reflects the demographics of the local population (d) The CRT can demonstrate at least one active attempt during the last 12 months relevant to the local population to make the CRT service more appropriate for a minority group (e) There is all-source agreement that the CRT provides a service which is sensitive to diversity and responds to service users' and families' needs regarding disability, race, gender, ethnicity or sexuality 5: All criteria are met 4: Criteria A and E and 2 other criteria are met 3: Criterion A and E are met but other criteria are met 2: One of criteria A and E is met 1: Neither criterion A nor criterion E are met	• Criterion A: requires agreement from CRT staff and manager + no evidence to the contrary from case note review or service user and carer interviews • Criterion B: requires paperwork evidence of monitoring + awareness from the manager of characteristics of CRT service users (e.g. gender, ethnicity, age) and how these compare with the catchment area population • Criterion C: broadly representative of the local population (i.e. at least 30% male and female staff; at least one CRT staff member from any ethnic group comprising > 20% of the catchment area population; BME staff +- 20% of the catchment area population) • Criterion D: examples of active attempts to cater for minority groups include: leaflets in non-English languages; adjustments to the built environment to increase accessibility for physically disabled; adapting self-management resources for people with learning difficulties, active engagement/meetings with local organisations supporting minority groups (e.g. black minority ethnic or lesbian, gay and transsexual community groups) to promote CRT understanding of communities' needs and access to the CRT. (Do not include classroom training in equal opportunities/ diversity to score this item as met)	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
				• Criterion E: Score mainly based on service user and carer interviews. If apparently met, check there is no contradictory evidence in case note reviews or other interviews. This criterion may be scored as met if no respondents identify needs relating to diversity, as long as there is no evidence of the CRT failing to be sensitive to diversity	
36	The CRT has systems to provide consistency of staff and support to a service user during a period of CRT care	M, S C, SU, FF M, S S, SU, FF	Scoring criteria: (a) The CRT allocates a named worker or equivalent for each service user who is responsible for ensuring key care tasks for that service user are completed (b) Service users and carers are made aware who their named worker is (at least 80% of service users) (c) The CRT has effective systems to limit the number of staff seen by a service user during an episode of CRT care (d) There is all-source agreement that CRT staff arrive with up-to-date information about the service user and treatment and succeed in avoiding unnecessary duplication of questions/ information and provide a coherent treatment approach 5: All criteria are fully met 4: Criterion D and two other criteria are met 3: Criterion D and one other criterion are met 2: Criterion D is met but no other criteria are met 1: No criteria are met	• Criterion A: Base scoring on agreement from CRT manager and staff team • Criterion B: Score based on case notes + Service user and family/friends interviews • Criterion C: Examples of efforts to limit the number of staff: routine monitoring of number of staff seen by service users; targets for maximum number of different staff seen which are publicised to service users and families; mini-teams within the CRT who regularly work with the same section of the caseload; not rostering 'double shifts' (– i.e. working days of 12 hours or more) for CRT staff, as these tend to reduce the number of days each staff member works. At least one strategy and agreement from the CRT staff and manager that it is proving effective is required to score as met: do not score as met on basis only of CRT aspiring to limit number of staff seen • Criterion D: consult CRT staff, service users and carers: clear prevailing view from each group that continuity is achieved is required to score as met	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
37	The CRT can access a range of crisis services to help provide an alternative to hospital admission for service users experiencing mental health crisis	M, S	Scoring criteria (a) The CRT can refer to a residential crisis service (b) There is all-source agreement that the CRT has good access to beds at a residential crisis service (c) The CRT can refer to an acute day service (d) There is all-source agreement that the CRT has good access to an acute day service 5: All criteria are met in full 4: Three criteria are met 3: Two criteria are met 2: One criterion is met 1: No criteria are met	• Define crisis residential service as either: a staffed crisis house; or designated crisis beds in another type of mental health hostel; or adult family crisis placement; or private hotel/ bed and breakfast rooms used exclusively by the CRT and with training and CRT support provided to the accommodation provider • Acute day service = day hospital or similar, focusing primarily on acute, crisis care • Staff and management agreement required to score re good access to beds/places [Good access not more than one referral per month declined for lack of spaces]	
38	The CRT provides frequent visits to service users	C C, SU, FF C C P	Scoring criteria: (a) At least 50% of service users are visited twice a day for a period of 3 consecutive days during their episode of CRT care (b) The CRT visits service users more than twice a day when needed (c) At least 50% of service users are seen/visited at least 7 times during their first week of receiving CRT support (d) At least 50% of service users are seen 5 times per week on average throughout their period of CRT care (until planned tapering of contacts to end CRT care) (e) The CRT actively monitors frequency of contacts with service users 5: all criteria are met 4: 4 criteria are met 3: 3 criteria are met 2: 2 criteria are met 1: 1 or no criteria are met	• Criteria A, C, D: base scoring on case note review or service data • Criterion B: Requires some evidence from either case notes or service user or carer interviews that at least one person was visited more than twice a day on at least one occasion. If evidence is not available from these sources, this item may be scored as met if the CRT manager can provide evidence of this happening within the last month • Criterion E: score based on paperwork review	

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#	Item	Evidence	Scoring criteria	Item definitions and scoring guidance	Score
39	The CRT mostly assesses and supports service users in their home	C (SU, FF)	Scoring criteria: Where the service user has not actively expressed a preference to meet elsewhere: 5: At least 80% of CRT contacts with service users take place in the service user's home or current place of residence 4: At least 70% of CRT contacts with service users take place in the service user's home or current place of residence 3: At least 60% of CRT contacts with service users take place in the service user's home or current place of residence 2: At least 40% of CRT contacts with service users take place in the service user's home or current place of residence 1: Less than 40% of CRT contacts with service users take place in the service user's home or current place of residence	• Score based on case note review: if apparently met, check no disagreement from service user and family respondents	

Evidence sources: C, case notes review; FF, Family/carer interviews; M, manager interview; O, interviews with staff from other mental health services; P, paperwork review; S, staff interview; SU, service user interviews.

CORE CRT Fidelity Scale – Guidance for Reviewers

CRT fidelity reviews will consist of the following elements: review of 10 consecutive service users' records; review of paperwork (policies, protocols and other documents relevant to the team); interview with CRT manager; interview with members of the CRT staff team; interviews with CRT service users; interviews with CRT carers; interviews with managers or staff from other services. An example of the schedule for a review is provided in the document ***Preparing for your CRT Fidelity Review***.

When conducting a review, reviewers should use the following the interview schedules and checklists of information:

- CRT Manager interview schedule
- CRT staff interview schedule
- CRT service user interview schedule
- CRT carer interview schedule
- Managers from other acute services interview schedule
- Managers from community services interviews schedule
- CRT case note review checklist
- CRT paperwork review checklist

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Please use evidence collected with these schedules and refer to the CORE CRT fidelity scale criteria and scoring guidance when scoring a CORE CRT fidelity review. Reviewers should confer and come to an agreed score for each item following the review.

General Scoring Guidance

In addition to the item-specific scoring guidance included within the CORE CRT fidelity scale, reviewers should follow the general scoring guidance below:

- Work down the scale for each item when scoring – i.e. does the CRT meet the criteria to score 5; if not does it meet the criteria for 4 . . .?
- All source agreement need not mean unanimous reports that a criterion is met. If there is a clear prevailing view among a respondent group (e.g. service users, or CRT staff) that a criterion is met, then this may constitute agreement even though a single respondent may have a different view.
- For scoring based on percentages of service users receiving an intervention, combine information from case note reviews and service user and family interviews where appropriate. For example, if 7 out of 10 case notes but all service user and family respondents reported that something was done, an 80% target could be scored as met.
- If scoring guidance is not explicit, then prioritise direct evidence in deciding whether criteria are met. For example, rely heavily on evidence from case notes and reports from service users about whether interventions are provided, prioritising these over written policies or the CRT manager's report.
- Additional evidence may be considered in scoring items where available and relevant. For example, good quality audit data for a CRT may provide stronger evidence than a review of 10 sets of case notes in scoring an item.

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Appendix 3 Reviews data extraction and quality assessment

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Review characteristics

Study	Pathway component	Objectives	Number of studies	Number of patients	Countries/health-care systems included
Alvarez-Jimenez *et al.*, 2011[70]	Promoting recovery	To determine the clinical effectiveness of pharmacological and non-pharmacological interventions to prevent relapse in patients with FEP	Nine	1227	European countries
Anderson *et al.*, 2010[45]	Promoting recovery	To assess the clinical effectiveness of pathways to care for patients with FEP and the association with DUP	30	2851	Australia, Canada, the People's Republic of China, France, Germany, Iran, Ireland, Malaysia, Trinidad and Tobago, Singapore, South Africa, Switzerland, the UK and the USA
Babalola *et al.*, 2014[71]	Crisis treatment (short vs. long inpatient stay)	To evaluate the effect of short stay/ brief admission hospital care with long stay/standard inpatient care in people with serious mental illness	Six	2030	USA and the UK
Bird *et al.*, 2010[72]	Promoting recovery	To assess the clinical effectiveness of EISs, CBT and family intervention in early psychosis	Four	800	UK, unclear
Blank *et al.*, 2012[89]	Access to support before crisis point (teletriage – health)	To determine the appropriateness of, and compliance with, telephone triage decisions	Two RCTs, 52 observational studies	Not reported	New Zealand, Australia, USA, European countries and Canada
Campbell and Kisely, 2009[73]	Promoting recovery (advanced treatment directives)	To assess the effects of advance treatment directives for people with severe mental illness	Two	321	UK, unclear
Choo *et al.*, 2012[129]	Access (computer technology in EDs)	To evaluate the use of computer technologies in addressing health behaviours in EDs	Four (two RCTs, two cross-sectional observational studies)	13,076	USA

Study	Pathway component	Objectives	Number of studies	Number of patients	Countries/health-care systems included
Reilly *et al.*, 2013[74]	Promoting recovery (collaborative care – severe mental illness)	To assess the clinical effectiveness of collaborative care approaches in comparison with standard care for people with severe mental illness who are living in the community	One	306	US Veterans Administration Medical Centre
Compton *et al.*, 2008[75]	Access to support before crisis point (training to recognise mental illness)	To explore the research on CIT programmes	12	Unclear (but did include at least 452 police officers; 485 patients)	USA
Dieterich *et al.*, 2010[76]	Promoting recovery (ICM – severe mental illness)	To assess the effects of ICM in people with severe mental illness and evaluate whether or not the effect of ICM on hospitalisation depends on its fidelity to the ACT model and on the setting	38 (12 multicentres)	7328	USA, Canada, European countries and Australia
Duncan *et al.*, 2010[130]	Promoting recovery (shared decision-making)	To assess the effectiveness of provider-, consumer- or carer-directed shared decision-making interventions for people with mental health conditions	Two cluster RCTs	518	Germany
Hamm *et al.*, 2010[131]	Crisis treatment (crisis intervention in children and young people – ED)	To evaluate the clinical effectiveness of ED-based management interventions for mental health presentations	12 observational studies (prospective cohort, controlled before-after, uncontrolled before-after, interrupted time series designs)	At least 2253 patients; 80 triage nurses; 1991 psychologists; 1966 psychiatrists	USA, Canada, Luxembourg, Australia and Belgium
Hickling *et al.*, 2007[132]	Crisis treatment (general medical vs. specialist psychiatric units – acute psychosis)	To compare the clinical effectiveness of open medical wards vs. conventional psychiatric units on outcomes in people with acute psychosis	None	Not applicable	Not applicable
Hubbeling and Bertram, 2012[77]	Crisis treatment (CRTs – severe mental illness)	To assess the evidence on whether or not CRTs in the UK and elsewhere reduce the number of hospital beds	One RCT, 15 naturalistic studies	Where reported, 4262 CRT and 2,886,015 residents	UK, USA, Australia, Luxembourg and France

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Study	Pathway component	Objectives	Number of studies	Number of patients	Countries/health-care systems included
Huibers *et al.*, 2011[90]	Access to support before crisis point (teletriage – out of hours care)	To assess the evidence on safety of telephone triage in out-of-hours primary care	34 (13 observational studies, 11 simulated patient studies)	7042 unselected/high risk patients	UK ($n = 8$) and USA ($n = 12$), unclear
Ismail *et al.*, 2013[91]	Access to support before crisis point (primary care service intervention to reduce A&E presentations)	To evaluate primary care service interventions to reduce inappropriate A&E attendances	34 (six systematic reviews; 13 before-and-after studies or interrupted time series; seven cross-sectional studies; six non-comparative case studies; one cohort; and one non-RCT)	Not reported	Europe (11 UK) and Australia; health system settings ranged from tax-funded or social insurance systems to private insurance systems
Kidd *et al.*, 2014[78]	Crisis treatment (inpatient recovery based care – severe mental illness)	To assess the effects of recovery-oriented practices on hospital wards	27 (four controlled designs; remaining studies were descriptive or uncontrolled)	Not reported	Not reported
Lloyd-Evans *et al.*, 2009[65]	Crisis treatment (residential alternatives to hospital admission – severe mental illness)	To assess the clinical effectiveness and cost-effectiveness of and satisfaction with residential alternatives to standard acute inpatient mental health services	27 [seven RCTs, 15 non-randomised studies (seven prospective, six retrospective, two unspecified), five interrupted time series]	At least 9705	USA, Canada, UK (six studies) and Switzerland
Maitre *et al.*, 2013[133]	Promoting recovery (advance directives – chronic psychosis)	To review the evidence on psychiatric advance directives for people with chronic psychotic disorders	36	Not reported	Not reported
Marshall *et al.*, 2011[79]	Crisis treatment (day hospital – severe mental illness)	To compare the effects of day hospital vs. inpatient care for people with acute psychiatric disorders	10 RCTs [type I trials excluded patients considered ineligible for day hospital treatment (e.g. people too violent or under compulsion); type II trials randomised everyone presenting for admission but admitted to inpatient ward any people allocated to day hospital who were too unwell for immediate day hospital treatment]	Number of patients 2685	UK, USA, Germany, Poland the Slovak Republic, the Czech Republic and the Netherlands

Study	Pathway component	Objectives	Number of studies	Number of patients	Countries/health-care systems included
Morriss *et al.*, 2013[134]	Access to support before crisis point (training to recognise recurrence of schizophrenia)	To compare the clinical effectiveness of early warning signs interventions plus treatment as usual involving and not involving a psychological therapy	34 RCTs (including two cluster RCTs)	3554	USA, Canada, European countries, East Asian countries and Australia
Murphy *et al.*, 2012[135]	Crisis treatment (crisis intervention – severe mental illness)	To compare the clinical effectiveness of crisis intervention models vs. standard care in people with serious mental illness experiencing an acute episode	Eight	1144	Australia, Canada, the USA and the UK
Ramos-Rios *et al.*, 2012[92]	Access to support before crisis point (teletriage – geriatric psychiatric patients)	To assess the evidence on telepsychiatry programmes, particularly psychogeriatric care via videoconferencing in nursing homes for the elderly	10 studies: case study, pilot study, programme description, cost-effectiveness analysis	258	USA, the Republic of Korea and Hong Kong
Robinson *et al.*, 2011[80]	Promoting recovery (suicide prevention in young people); crisis treatment (crisis treatment for suicide attempts in young people); promoting recovery (promoting recovery in young people)	To assess the effects of interventions for adolescents and young adults presenting to a clinical setting with suicidal behaviours	15	Unclear; sample sizes ranged from 22 to 448 patients	USA, unclear
Sass *et al.*, 2009[66] and Moffat *et al.*, 2009[67]	Promoting recovery (pathways to care – equality of access)	To evaluate research on initiatives to increase, improve or enhance access to care or pathways to mental health care for BME groups	Six studies: one RCT, two quasi-experimental design, two observational studies; and one retrospective analysis. Eight studies; in-house project report, external evaluation, semistructured interviews, case history, book chapters	Range 70–5983	USA, Australia and the UK (one study); the UK (eight studies)
Shek *et al.*, 2009[81]	Crisis treatment (day hospital – schizophrenia)	To assess the effects of day hospital care vs. continuing outpatient care for people with schizophrenia and other similar severe mental illness	Four (published between 1966 and 1986)	351	USA

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Study	Pathway component	Objectives	Number of studies	Number of patients	Countries/health-care systems included
Shepperd *et al.*, 2009[64]	Crisis treatment (alternatives to inpatient care for children and young people)	To assess the clinical effectiveness, acceptability and cost of mental health services that provide an alternative to inpatient care for children and young people	Seven RCTs	783	USA, Germany and the UK (one RCT)
Skalli and Nicole, 2011[82]	Promoting recovery (FEP services)	To assess the efficacy and efficiency of specialised FEP services and identify patients who benefit the most from such programmes	Five	1633	Scandinavian countries
Stoffers *et al.*, 2012[83]	Promoting recovery (psychotherapies – borderline disorder)	To assess the effects of psychological interventions for BPD	28	1804 (ranging between 16 and 180 patients)	European countries (including two RCTs in the UK), USA, Canada and one study in New Zealand
Thomas and Rickwood, 2013[84]	Crisis treatment (acute and subacute residential services – severe mental illness)	To assess the clinical effectiveness of acute and subacute residential services in providing transitional care to support people with mental illness	26 [11 RCTs, one mixed methods (cross-sectional, qualitative), one longitudinal, two prospective, eight repeated measures, one cross-sectional, and two qualitative]	5161	USA, the UK (10 studies) and Norway
Professor Sonia Johnson and Dr Brynmor Lloyd-Evans, personal communication	Crisis treatment (crisis intervention)	To assess the evidence regarding best practice for organisation and service delivery in CRTs	63 (24 qualitative; 24 quantitative; and 15 guidelines)	Approximately 16,921	Australia, USA, Canada, the UK, Norway and Germany

Grading of Recommendations Assessment, Development and Evaluation profiles

Urgent and emergency access to crisis care

Psychiatric liaison teams compared with standard care for people presenting with mental health crisis

- Patient or population: patients with for people presenting with mental health crisis.
- Settings: ED.
- Intervention: psychiatric liaison teams.
- Comparison: standard care.

Outcome	Before implementation	Psychiatric liaison teams	Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Readmission			Not estimable	6613 (two studies)	⊕⊖⊖⊖ very low[a]	
Waiting times			Not estimable	6901 (three studies)	⊕⊖⊖⊖ very low[b,c]	

a One study found reduced readmission another did not.
b Potential confounding not taken into account either in design or analysis.
c Two studies found improvement, another did not.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

Educational intervention compared with standard care for urgent and emergency access to crisis care

- Patient or population: patients with urgent and emergency access to crisis care.
- Settings: ED.
- Intervention: educational intervention.
- Comparison: standard care.

Outcome	Standard care	Educational intervention	Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Violence			Not estimable	479 (one study)	⊕⊖⊖⊖ very low[a,b]	
Medication use			Not estimable	646 (one study)	⊕⊖⊖⊖ very low[a,b]	

a Potential confounding not taken into account in design or analysis.
b Only based on one study.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

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Street/telephone triage compared with standard care for people in mental health crisis

- Patient or population: Patients with people in mental health crisis.
- Settings: Mental Health Act-related events.
- Intervention: street/telephone triage.
- Comparison: standard care.

Outcome	Standard care	Street/telephone triage	Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Mental Health Act detention			Not estimable	673 (one study)	⊕⊖⊖⊖ very low[a,b]	
Police time on call			Not estimable	4114 (one study)	⊕⊖⊖⊖ very low[b]	

a Unclear whether differences in Mental Health Act detention over time were as a result of intervention.
b Based on one study.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

Police officer training compared with standard care for people in mental health crisis

- Patient or population: patients with people in mental health crisis.
- Settings: Mental Health Act-related events.
- Intervention: police officer training.
- Comparison: standard care.

Outcome	Standard care	Police officer training	Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Level of force used			Not estimable	1257 (two studies)	⊕⊖⊖⊖ very low[a]	
Duration of Mental Health Act event			Not estimable	194 (one study)	⊕⊖⊖⊖ very low[b]	
Arrest rate			Not estimable	1063 (two studies)	⊕⊖⊖⊖ very low[a,c]	

a Unclear extent to which crisis intervention model is generalisable to England.
b Based on one study.
c Validity of comparator unclear in at least one study.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

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Quality of treatment and care in crisis

Alternatives to inpatient treatment compared with standard care for young people with mental health problems

- Patient or population: patients with young people with mental health problems.
- Intervention: alternatives to inpatient treatment.
- Comparison: standard care.

Outcome	Standard care	Alternatives to inpatient treatment	Relative effect (95% CI)	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Mental health symptoms				560 (seven studies)	⊕⊖⊖⊖ very low[a,b,c]	
General psychological functioning				560 (seven studies)	⊕⊖⊖⊖ very low[a,b,c]	

a Many studies did not provide sufficient information on allocation concealment to assess risk of bias.
b Studies not sufficiently similar to pool.
c Wide CIs consistent with benefit and harm in most studies.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

Promoting recovery

Strengths-based service models compared with control for promoting recovery in people with mental health problems

- Patient or population: people with mental health problems.
- Settings: any.
- Intervention: strengths-based service models.
- Comparison: control.

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Outcome	Strengths-based service models	Number of participants (studies)	Quality of the evidence (GRADE)	Comments
Level of functioning	The mean level of functioning in the intervention groups was 0.03 SDs higher (0.37 lower to 0.43 higher)	314 (four studies)	⊕⊖⊖⊖ very low[a,b,c]	
Mental health symptoms	The mean mental health symptoms in the intervention groups was 0.04 SDs higher (0.88 lower to 0.97 higher)	150 (three studies)	⊕⊖⊖⊖ very low[a,b,c]	
Quality of life	The mean quality of life in the intervention groups was 24 SDs lower (76.94 lower to 28.93 higher)	105 (two studies)	⊕⊖⊖⊖ very low[a,b,c]	

a Most studies did not clearly report methods to enable an assessment of risk of bias.
b High heterogeneity (I-squared over 50% and wide variation in effect estimates between studies).
c Wide CI consistent with benefit and harm.
GRADE Working Group grades of evidence.
High quality: further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: we are very uncertain about the estimate.

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Appendix 4 Primary studies data extraction and quality assessment

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Study characteristics

Primary studies: study characteristics

Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
Improving access to crisis care in the ED							
Adams and Nielson, 2012[103]	Pre-/post-process plan implementation Data collected on revisit rates to the psychiatric ED within 30 days of discharge (March 2009–March 2011)	To provide evidence on the implementation of a proactive process improvement plan to decrease mean psychiatric emergency revisit rates	NR (medical centre has 532 inpatient beds, 252 located at one site, 66 of which are for inpatient psychiatry)	One hospital, two locations	USA	ED revisit rates	Follow-up: 10 months
Cailhol *et al.*, 2007[101]	Data collected prospectively before (5 months) and after (5 months) introduction of a staff educational crisis intervention Patients assessed using an ad hoc questionnaire, completed by clinicians	To investigate the impact of a staff educational crisis intervention on violent behaviour of patients admitted to EDs following drug suicidal attempt	Of 4791 patients consulting psychiatric ED, 478 patients (10%) had attempted drug suicide	One	Switzerland	Violent behaviour	10 months
McDonough *et al.*, 2004[98]	Before-and-after data collected using a specifically designed EMTaCS database and data obtained from the Australasian Triage Scale (July 2001–July 2002)	To evaluate the impact of the EMTaCS on the ED	604 patients (803 contacts)	One	Australia	Average nightly contact rate; mean time of contact; average time lag between arrival at ED and contact with EMTaCS Patient outcomes (e.g. hospitalisation, referrals to other services)	12 months

Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
Pajonk *et al.*, 2008[102]	Prospective comparison of two urban settings with comparable sociodemographic profiles over 12 months (starting July 2003). Calls recorded and diagnoses collected (there may be multiple reasons for call)	To compare the frequency, diagnostic reliability and treatment of psychiatric emergencies in two different emergency medical systems	5477 emergency situations: psychiatric emergencies ($n = 646$; 11.8%)	Two cities with a two-tiered emergency medical system – ambulance staffed with emergency medical technicians – defibrillation as the first tier The second tier comprises vehicles staffed with an emergency medical defibrillator and an emergency physician (mostly anaesthesiologists with additional training in pre-hospital emergency medicine)	Germany	Diagnoses and treatment of psychiatric emergencies (defined as acute onset or exacerbation of a mental illness that may lead to danger to the life and health of the patient or others)	12 months
Sinclair *et al.*, 2006[99]	Crossover design study introducing a 3-month psychiatric nurse intervention into two busy UK A&E departments Standardised assessments completed for each patient, retrospective case note review, patient and staff surveys	To assess the impact of a dedicated A&E psychiatric nurse service on several outcomes relevant to patients and clinicians	Patients presenting to A&E with mental health problems and 527 general A&E patients; 34 members of staff	Two A&E departments	UK	A&E attendance; referrals; repeat attendances	12 months

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Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
Strike *et al.*, 2008[104]	Exploratory qualitative design using semistructured interviews and iterative, thematic analysis A purposeful maximum variation sampling strategy was used to recruit participants between January 2004 and October 2004 Patient interviews (lasting from 45 minutes to 2 hours) were conducted after patients were discharged from the ED or after admission to the psychiatric ward Staff were recruited through posting flyers in high-traffic staff locations, by referral and word of mouth. Staff interviews lasted 30–90 minutes	To explore the impact of, and attitudes towards, the ED psychiatric assessment rooms from the perspectives of patients and medical staff	Recruited after discharge from the ED ($n = 18$) Recruited after admission to the psychiatric ward ($n = 7$) Six nurses; five doctors; six non-medical ED staff members (i.e. crisis team workers and security officers)	One large urban general hospital	Canada	Patient and medical staff experiences of psychiatric safe rooms	Approximately 10 months

Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
Tadros *et al.*, 2013[96]	Evaluation of data already held by the City Hospital, Birmingham. RAID group referred to and managed by the RAID team (December 2009–July 2010) and the RAID-influence group not referred to RAID but had a discharge date between December 2009 and July 2010 In addition, a retrospective control group (pre-RAID) including patients admitted between December 2008 and July 2009	To evaluate whether or not an integrated rapid response mental health service improves access to psychiatric assessments and services, in addition to reducing costs of health service provision in acute hospitals	RAID group: 886 RAID-influence group: 2654 Pre-RAID control group: NR	One hospital	England	Length of hospital stay and readmission rates (including length of survival in the community after discharge); cost savings	6 months
Wand *et al.*, 2011[100]	Mixed-methods study assessing service user perceptions of a MHNP service for people presenting to the ED	To assess service user satisfaction and experience of the MHNP service	23	One	Australia	Service user satisfaction and perceptions of the service	Study conducted between June 2008 and March 2010
Woo *et al.*, 2007[97]	Retrospective cohort study comparing psychiatric emergency service model with psychiatric consultation model Participants were randomly selected from 3532 evaluations	To compare the psychiatric emergency service model with the consultation model	200	One medical centre	USA	Admission to inpatient unit; timeliness of medical clearance; timeliness of psychiatric evaluation; mental state examination; urine toxicology; pregnancy testing; vital signs; emergency medication given; seclusion and restraint; elopement; follow-up care provided; readmission within 30 days	1 year

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Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
Police involvement in improving access to crisis care							
Compton *et al.*, 2014[107]	Data collected from March to November 2010	To assess the effects of CIT training on levels of force and dispositions	180 police officers (91 with CIT training); 1063 encounters	Six departments	USA	Level of force; disposition (resolution at the scene, referral or transport to services, or arrest)	NR
Edmondson and Cummins, 2014[31]	Telephone/triage pilot project; modified mixed-method approach including qualitative data collection and thematic analysis (including semistructured individual and group interviews with police officers on the use of the pilot scheme), quantitative methods (December 2013–May 2014) and case study approaches to evaluation. Greater Manchester Police officers able to contact a 24-hour telephone number for professional advice and assistance from the NHS trust's psychiatric liaison service, RAID team. RAID staff were experienced trained mental health workers (working with hospital colleagues) who supported people with mental health and/or alcohol problems	To assess the impact of the Oldham Phone Triage/RAID pilot project in relation to: • Decision-making, actions and outcomes from mental health referrals made by police officers to the Phone Triage Service • Delivery of appropriate, timely and improved outcomes for individuals, families and communities • Use and management of Section 136 orders • Broader learning from the pilot for the police service, in relation to improving complex and challenging decision-making in the context of policing and mental health	673 incidents used for quantitative analysis	One	England	Use of pilot service; use of Section136; hospitalisation; length of time officers spent with person; eventual outcome; police officer experiences with pilot, the strengths and deficits of the pilot, whether or not it had value and achieved its aims, identifying areas for future development	NR

Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
El-Mallakh *et al.*, 2008[108]	CIT programme instituted in 2001, began operation in January 2002 and expanded to include the county in 2003 Descriptive statistics presented and a test of significance of proportional data was employed	To determine the impact of implementing a police CIT on police calls that involved people with mental illness	NR (number of CIT calls: 2269 in 2002; 2112 in 2004; 3068 in 2005; and 3237 in 2006)	NR	USA	Number of CIT calls; use of force; police and citizen injuries; special weapons and tactics callouts; hostage negotiation team callouts; arrest rates	2002–4
Herrington and Pope, 2014[109]	Multiphased mixed-methods pilot study initiated in New South Wales (January 2008–December 2009) Mental Health Act events recorded using computer operational policing system (3 months in 2007, 2008 and 2009 to represent comparison months before and after introduction of the intervention MHIT trained officers completed questionnaires at three time points (pre training, 2 months and 18 months post training). Non-MHIT trained participants recruited as a convenience sample and completed questionnaires Surveys completed by police and people with mental illness involved in a (systematic) sample of 171 Mental Health Act events recorded at four evaluations sites (October 2008–February 2009)	To assess a police initiated response to addressing incidents resulting from police interactions with people with mental illness	New South Wales Police Force: Members of MHIT project team ($n = 9$) Front-line police receiving MHIT training ($n = 111$) Front-line officers not receiving MHIT training ($n = 74$) New South Wales health participants: 5 Non-government organisations: 12 People with mental illness: 17 Ambulance service of New South Wales declined to participate in the research Mental Health Act events: n = 471	Nine sites	Australia	Mental Health Act events, including de-escalation, use of force and engagement with stakeholders	2 months and 18 months after training

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Study	Study design and brief description of methods	Objectives	Number of patients	Number of centres/teams	Country/health-care system	Primary outcome	Time points
	Semistructured interviews undertaken by stakeholders and interpreted using thematic analysis Two focus groups conducted with people with mental illness Observational data from training, and four 12-hour shifts with police in four evaluation sites (192 hours)						
Kisely *et al.*, 2010[105]	Mixed-methods design: controlled before-and-after comparison; qualitative assessments (interviews and focus groups) on views of service, using purposive sampling Service users and families or friends recruited through community and mental health settings, and advertisements Intervention implemented in June 2006	To assess the impact of an integrated mobile crisis team	NR	NR	Canada	Changes in availability and accessibility by contacts with crisis team and mental health calls to the police; efficiency (call-to-door time for visits); service user and staff satisfaction with the service	1 and 2 years post implementation
Steadman *et al.*, 2000[106]	Comparative cross-site descriptive design (October 1996–August 1997)	To compare three different models of police responses to calls for 'emotionally disturbed persons'	Approximately 100 police dispatch calls at each site, and an additional 100 calls from each site in which a specialised response occurred	Three sites	USA	Police responses and dispositions (taken to treatment location; situation resolved on scene; referred to treatment; arrested)	10 months

EMTaCS, Emergency Department Mental Health Triage and Consultancy Service; MHNP, mental health nurse practitioner; NR, not reported.

Primary studies: intervention details

Study	Intervention characteristics	Comparator characteristics
Improving access to crisis care in the ED		
Adams and Nielson, 2012[103]	*Description of intervention* Proactive process improvement plan for psychiatric patients entering the ED within 30 days of an inpatient discharge: incorporating inpatient unit's discharge instruction into the ED's plan of care, involving the ED's community-based on-call psychiatrists, standardise communication between ED nurses and on-call psychiatrists, include communication with outpatient care providers, utilise decisional support from the ED's informatics system *Setting* Community-based not-for-profit psychiatric ED; one with a level 2 trauma service and a dedicated psychiatric area *Implementation* Psychiatric patients cleared by the ED's triage process. Patients in the psychiatric emergency area remain under care, seen by a nurse who then contacts on-call psychiatrist. Patients tracked using a stand-alone ED information system and interfaces with the attached medical centre Fidelity to model NR	*Description of comparator* N/A *Setting* N/A *Implementation* N/A *Fidelity to model* N/A
Cailhol *et al.*, 2007[101]	*Description of intervention* Specific staff educational crisis intervention (educational programme for clinicians, nurses and security staff focusing on restraint and violent behaviour (early screening of potential violent behaviour); emphasis on regular communication between relevant staff; medical presence during all security interventions for restraint; debriefing after each intervention *Setting* Psychiatric ED *Implementation* Psychiatric emergency team (six residents and six psychiatrists), security and nurses *Fidelity to model* NR	*Description of comparator* N/A *Setting* N/A *Implementation* N/A *Fidelity to model* N/A

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Study	Intervention characteristics	Comparator characteristics
McDonough *et al.*, 2004[98]	*Description of intervention* Night (21.00 to 07.30) EMTaCS (Thursday–Sunday for 3 months, then 7 nights per week) *Setting* ED *Implementation* Mental health Directorate in collaboration with ED *Fidelity to model* NR	*Description of comparator* N/A *Setting* N/A *Implementation* N/A *Fidelity to model* N/A
Pajonk *et al.*, 2008[102]	*Description of intervention* City 1: emergency physicians received standardised 3-hour educational course about symptoms, diagnoses, crisis intervention and pharmacological treatment of psychiatric emergencies. Health professionals provide daily briefings and regular supervision throughout the study *Setting* ED *Implementation* Emergency physicians *Fidelity to model* NR	*Description of comparator* City 2: not informed about the study and did not receive educational meetings, briefings or supervision *Setting* Hospital ED *Implementation* Emergency physicians *Fidelity to model* NR
Sinclair *et al.*, 2006[99]	*Description of intervention* Dedicated A&E psychiatric nurse service; 130 hours per week from 08.00 to 12.00. Clinical supervision provided by A&E nurse managers and, where necessary, a consultant psychiatrist *Setting* A&E department 1 *Implementation* Four experienced community psychiatric nurses *Fidelity to model* NR	*Description of comparator* Dedicated A&E psychiatric nurse service; 130 hours per week from 08.00 to 12.00. Clinical supervision provided by A&E nurse managers and, where necessary, a consultant psychiatrist *Setting* A&E department 2 *Implementation* Same four experienced community psychiatric nurses *Fidelity to model* NR

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Study	Intervention characteristics	Comparator characteristics
Strike *et al.*, 2008[104]	*Description of intervention*	*Description of comparator*
	Psychiatric assessment (safe) rooms in EDs	N/A
	Setting	*Setting*
	Hospital ED	N/A
	Implementation	*Implementation*
	Medical staff	N/A
	Fidelity to model	*Fidelity to model*
	NR	N/A
Tadros *et al.*, 2013[96]	*Description of intervention*	*Description of comparator*
	Liaison psychiatry service delivering rapid response (within 1 hour), 24-hours, 7 days a week, age-inclusive service and comprehensive range of mental health specialities, including old age, working age, post-natal mental health and substance misuse	RAID-influence group (all emergency admissions with a mental health diagnosis not referred to RAID)
	Setting	Pre-RAID retrospective control group (all emergency admissions with a mental health diagnosis admitted before introduction of RAID)
	City Hospital, Birmingham	*Setting*
	Implementation	City Hospital, Birmingham
	The RAID model provides a multiprofessional team who provide formal and informal training to acute hospital staff	*Implementation*
	Fidelity to model	Hospital staff (not specified)
	NR	*Fidelity to model*
		NR
Wand *et al.*, 2011[100]	*Description of intervention*	*Description of comparator*
	Mental health nurse practitioner outpatient service	N/A
	Setting	*Setting*
	ED	N/A
	Implementation	*Implementation*
	Mental health nurse practitioner	N/A
	Fidelity to model	*Fidelity to model*
	NR	N/A

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Study	Intervention characteristics	Comparator characteristics
Woo *et al.*, 2007[97]	*Description of intervention* Psychiatric emergency service: provides immediate psychiatric assessment to minimise harm from inappropriate decisions for people in mental health crisis. Also provides a therapeutic environment for people in crisis to receive psychiatric, medical and social support *Setting* University of California Los Angeles-Kern Medical Centre *Implementation* NR *Fidelity to model* NR	*Description of comparator* Consultation model: consultant psychiatrist providing assessment and treatment for mental health crises in the ED *Setting* University of California Los Angeles – Kern Medical Centre – before psychiatric emergency service had been implemented *Implementation* NR *Fidelity to model* NR
Police involvement in improving access to crisis care		
Compton *et al.*, 2014[107]	*Description of intervention* Police-based CIT model (40-hour training) *Setting* NR *Implementation* Police officers *Fidelity to model* NR	*Description of comparator* Police officers who had not received CIT training *Setting* NR *Implementation* Police officers *Fidelity to model* NR
Edmondson *et al.*, 2014[31]	*Description of intervention* RAID mental health phone triage pilot; available 24 hours a day, 7 days a week for use by officers at the scene of an incident. Enables speedy access to professional mental health expertise and advice; sharing and exchange of information; agreement on appropriate course of action *Setting* On scene *Implementation* Police officers *Fidelity to model* NR	*Description of comparator* N/A *Setting* N/A *Implementation* N/A *Fidelity to model* N/A

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Study	Intervention characteristics	Comparator characteristics
El-Mallakh *et al.*, 2008[108]	*Description of intervention* Police CIT programme *Setting* NR *Implementation* Police and special weapons and tactics officers *Fidelity to model* NR	*Description of comparator* N/A *Setting* N/A *Implementation* N/A *Fidelity to model* N/A
Herrington and Pope, 2014[109]	*Description of intervention* MHIT; central project team to deliver training *Setting* NR *Implementation* Police officers *Fidelity to model* NR	*Description of comparator* Sites neighbouring the pilot programme sites who interact with the same hospital *Setting* NR *Implementation* NR *Fidelity to model* NR
Kisely *et al.*, 2010[105]	*Description of intervention* Integrated mobile crisis team formed in partnership between mental health services, municipal police and emergency health services. Offering short-term crisis management, including mobile interventions, 24-hour telephone support *Setting* On scene *Implementation* Mobile interventions attended by a plain-clothes police officer and a mental health professional *Fidelity to model* NR	*Description of comparator* Area similar to intervention area but without access to such a service *Setting* NR *Implementation* NR *Fidelity to model* NR

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Study	Intervention characteristics	Comparator characteristics
Steadman *et al.*, 2000[106]	*Description of intervention* Birmingham programme; police-based specialised mental health response. Community service officers (civilian police employees with professional training in social work or related fields) assist police officers in mental health emergencies by providing crisis intervention and some follow-up assistance. Community service officers participate in a 6-week classroom and field training programme; available Monday–Friday from 08.00 to 22.00, 24-hour coverage rotating on-call duty during weekends, holidays, and off-shift hours *Setting* On scene *Implementation* Community service officers *Fidelity to model* NR	*Description of comparator* Memphis programme (police-based specialised police response): CIT with specially trained officers (40 hours of training) to transport individuals they suspect of having mental illness to psychiatric emergency service. Covering four overlapping shifts, providing 24-hour service. Knoxville programme (mental-health-based specialised mental health response): mobile crisis unit responding to calls in the community, handling telephone calls and referrals from prison. 24-hour coverage *Setting* On scene *Implementation* Police officers *Fidelity to model* NR

EMTaCS, Emergency Department Mental Health Triage and Consultancy Service; N/A, not applicable; NR, not reported.

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Primary studies: participant characteristics

Study	Mean age	Mental health diagnosis	Comorbidities	Sex	Ethnicity	Other relevant characteristics
Improving access to crisis care in the ED						
Adams and Nielson, 2012[103]	NR	NR	NR	NR	NR	NR
Cailhol *et al.*, 2007[101]	NR	Patients attempting drug suicide and fulfilling the *Diagnostic and Statistical Manual of Mental Disorders*-Fourth Edition criteria for BPD, psychotic disorder, or major depression, life crisis situations, and alcohol or drug intoxication	NR	NR	NR	NR
McDonough *et al.*, 2004[98]	34 years (range 15–90 years)	Drug and alcohol use, mood, disorder, psychosis and anxiety	NR	Male: 328/604 (54.3%)	NR	Reasons for contact: • Situational crisis: 266/604 (44%) • Drug and alcohol use: 79/604 (13%) • Exacerbation of a pre-existing psychiatric condition: 79/604 (13%) • Medical problem: 60/604 (10%) • Mood disorder: 36/604 (6%) • Psychosis: 30/604 (5%); anxiety: 30/604 (5%); medication: 18/604 (3%) • Other: 6/604 (1%)

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Study	Mean age	Mental health diagnosis	Comorbidities	Sex	Ethnicity	Other relevant characteristics
Pajonk *et al.*, 2008[102]	• City 1 (43.2 years, SD 17.9 years) • City 2 (39.5 years, SD 16.9 years) % of people aged 60 years or older: city 1 (25%); city 2 (26%)	Severely impaired patients: city 1 (102/433, 23.4%); city 2 (68/210, 32.2%); OR 1.55 (95% CI 1.08 to 2.23) Emergency physician diagnosis alcohol intoxication: city 1 (143/433, 32.9%); city 2 (69/210, 32.7%); OR 0.99 (95% CI 0.70 to 1.41) State of agitation or violence: city 1 (131/433, 30.1%); city 2 (47/210, 32.7%); OR 0.66 (95% CI 0.45 to 0.98) Suicide attempt: city 1 (43/433, 9.9%); city 2 (31/210, 14.7%); OR 1.57 (95% CI 0.96 to 2.58) Psychosis: city 1 (33/433, 7.6%); city 2 (17/210, 8.1%); OR 1.07 (95% CI 0.58 to 1.96) Depression: city 1 (26/433, 6%); city 2 (9/210, 4.3%); OR 0.7 (95% CI 0.32 to 1.52) *Leading psychiatric diagnoses after assessment* Dementia/personality disorder: city 1 (1/433, 0.2%); city 2 (1/210, 0.5%); OR 2.07 (95% CI 0.13 to 33.20) Drug/substance misuse: city 1 (215/433, 49.4%); city 2 (109/210, 51.7%); OR 1.09 (95% CI 0.79 to 1.52) Schizophrenia/psychotic disorder: city 1 (31/433, 7.1%); city 2 (14/210, 6.6%); OR 0.93 (95% CI 0.48 to 1.78) Bipolar/mood disorders: city 1 (20/433, 4.6%); city 2 (7/210, 3.3%); OR 0.71 (95% CI 0.30 to 1.71) Anxiety/stress disorders: city 1 (116/433, 26.7%); city 2 (42/210, 19.9%); OR 0.68 (95% CI 0.46 to 1.02)	NR	Male: city 1 (232/433, 54%); city 2 (118/210, 56%)	NR	NR

Study	Mean age	Mental health diagnosis	Comorbidities	Sex	Ethnicity	Other relevant characteristics
Sinclair *et al.*, 2006[99]	NR	NR (approximately half of the 411 patients seen by a psychiatric nurse had a psychiatric history). 92% ($n = 37$) of reviewed patient management plans formulated by the psychiatric nurses were judged appropriate and of good quality	NR	NR	NR	NR
Strike *et al.*, 2008[104]	20–29 years: 8/25 (32%) 30–39 years: 11/25 (44%) 40+ years: 6/25 (24%)	Males were suicidal (acute and chronic), had a history of suicidality and current substance use disorder *Axis 1 disorders* • Mood: 23/24 (96%) • Anxiety: 19/24 (79%) *Axis 2 disorders (personality disorders)* • Avoidant: 7/23 (30%) • Obsessive–compulsive: 4/23 (17%) • Passive–aggressive: 6/23 (26%) • Depressive: 11/23 (48%) • Paranoid: 9/23 (39%) • Schizoid: 3/23 (13%) • Narcissistic: 4/23 (17%) • Borderline: 18/24 (75%) • Antisocial: 17/24 (71%)	Alcohol abuse and dependent: 22/24 (92%) Substance abuse and dependent: 16/24 (67%)	Only males were eligible for inclusion in the study	NR	Some men visited ED during a period of intense suicidal ideation or following a suicide attempt. Other men were assessed as suicidal during triage, and some men went to ED as a way to see a psychiatrist
Tadros *et al.*, 2013[96]	Patients referred from A&E: 36.4 years (range 16–64 years) Patients admitted because of self-harm: 34.5 years (range 16–64 years) The mean age of referrals from all wards was 65.7 years (range 16–64 years)	Category F, ICD-10 diagnosis, including psychosis, schizophrenia, self-harm	NR	Male: • RAID group: 407/886 (46%) • RAID-influence group: 1592/2654 (60%) • Pre-RAID control group: 1686/2873 (58%)	NR	NR

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Study	Mean age	Mental health diagnosis	Comorbidities	Sex	Ethnicity	Other relevant characteristics
Wand *et al.*, 2011[100]	32 years (range 18–44 years)	NR	NR	16 females and 7 males	NR	NR
Woo *et al.*, 2007[97]	38 years	Most common diagnoses were schizophrenia ($n = 19$), bipolar disorder ($n = 19$) and depression ($n = 17$)	NR	53 males and 47 females in both groups	NR	All participants were involuntarily admitted
Police involvement in improving access to crisis care						
Compton *et al.*, 2014[107]	Mean age of officers: 36.6 years	NR	NR	Male: 135/180 (75%)	Caucasian: 93/180 (52%) African American: 75/180 (42%) Hispanic: 8/180 (4%) Native American or Pacific Islander: 2/180 (1%) Asian: 2/180 (1%)	NR
Edmondson and Cuummins, 2014[31]	Of 40 cases resulting in use of Section 136: 36+ years: 12/40 (30%) 26–35 years: 16/40 (40%) 18–25 years: 7/40 (17.5%) Under 18 years: 5/40 (12.5%)	Features of mental health-related calls Alcohol and/or drug use: 153/673 (23%) calls 67/673 (9.95%) calls identified no obvious mental health issues Self-harm; agitated, erratic and/or unsettled behaviour; paranoia or psychosis	Alcohol and/or drug use; present in approximately 10/40 (25%) of Section 136 cases	Male: 24/40 (60%)	NR	Prior contact with health and social care services Mental Health Care Programme approach: 5/40 (12.5%) Secondary health or social care services: 30/40 (75%)

Study	Mean age	Mental health diagnosis	Comorbidities	Sex	Ethnicity	Other relevant characteristics
El-Mallakh *et al.*, 2008[108]	NR	NR	NR	NR	NR	NR
Herrington and Pope, 2014[109]	NR	NR	NR	NR	NR	NR
Kisely *et al.*, 2010[105]	NR	NR	NR	NR	NR	NR
Steadman *et al.*, 2000[106]	NR	NR	NR	NR	NR	NR

ICD-10, *International Classification of Diseases*, Tenth Edition; NR, not reported.

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Study outcomes

Primary studies: patient-related outcomes

Study	Self-harm	Violence	Service user experience
Improving access to crisis care in the ED			
Adams and Nielson, 2012[103]	NR	NR	NR
Cailhol *et al.*, 2007[101]	NR	5 months prior to intervention ($n = 254$): • with violent behaviour: 44/254 patients (17%) • without violent behaviour: 210/254 (83%) 5 months after introduction of intervention ($n = 224$): • with violent behaviour: 16/224 patients (7%) • without violent behaviour: 208/224 patients (93%) Effect size *r*: • patients with violent behaviour (0.816, before vs. after intervention; $p = 0.0008$) • patients without violent behaviour (0.031, before vs. after intervention; $p = 0.0008$) Significant reductions in violent behaviour after the introduction of the intervention were observed only in patients with diagnoses (major depression, life crisis situations and alcohol or drug intoxication) other than BPD ($p = 0.17$) and psychotic disorder ($p = 0.71$)	NR
McDonough *et al.*, 2004[98]	257/604 (43%); 171 patients self-harmed as a result of situational crisis rather than an underlying psychopathology	NR	NR

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Study	Self-harm	Violence	Service user experience
Pajonk *et al.*, 2008[102]	Correct identification and documentation of suicide attempts or suicide idea was low: city 1, 59.4%; city 2, 50% Certain suicide attempt: city 1, 52/106 (12%); city 2, 38/62, (29.3%); OR 1.62 (95% CI 1.03 to 2.55) Probable suicide attempt: city 1, 16//106, (3.7%); city 2, 10/62, (4.7%); OR 1.30 (95% CI 0.58 to 2.92) Suicidal ideation: city 1, 38/106 (8.7%); city 2, 14/62 (6.6%); OR 0.74 (95% CI 0.39 to 1.40)	NR	NR
Sinclair *et al.*, 2006[99]	NR	NR	Patient satisfaction: 31% ($n = 156$) of patients with mental health problems and 52% ($n = 272$) of general A&E patients completed a questionnaire. Levels of satisfaction were high for all patients with non-significant differences between intervention and non-intervention periods The most important concern for patients with mental health problems related to lack of empathy from A&E staff. For general A&E patients the most important issues were physical environment and waiting times
Strike *et al.*, 2008[104]	All men reported prior ED admissions related to suicidal ideation or attempts. Despite repeated visits, the ED was frequently viewed as a last resort for care	NR	Many patients presented at the ED because they were alone, scared, and had few other social supports; being assigned to a psychiatric assessment room felt like a punishment. One patient stated: *It was very jail-like and reminded me of prison* The rooms might not have made the patients feel safe at all, rather than calming the patients, being both separated from other patients and observed was believed to escalate some symptoms, especially for patients with paranoia or depression: *I spoke with uh one of the workers there, staff, and I explain. I, I, I believe I told him 'you know what, I just cannot stay in this room by myself here.' I feel like claustrophobic, scared, empty, nothing* *One patient*

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Study	Self-harm	Violence	Service user experience
			The length of time spent alone was also noted to contribute to negative experiences: *I had to sit around and wait, and wait and wait and wait. If I have any disgruntlement about uh the emergency services it's waiting, but unfortunately that's the way it is* *One patient* Often patients and staff spoke about the rooms as analogous to seclusion rooms used in the psychiatric inpatient setting particularly for violent patients. Furthermore, patients questioned the use of the rooms for non-violent patients by stating *. . . I was put into a room with a bed with walls. It was pretty plain and I think they use it to lock up irate mental patients that they receive . . .* *One patient*
Tadros *et al.*, 2013[96]	Referral to RAID team: 32%	NR	NR
Wand *et al.*, 2011[100]	NR	NR	Most highly regarded aspects impacting on their experience of the service: • Feeling that their experience or situation was listened to and understood: to a considerable extent (87%); to a moderate extent (13%) • The particular skills and approach of the MHNP: to a considerable extent (83%); to a moderate extent (13%) • Positive manner in which follow-up was co-ordinated: to a considerable extent (79%); to a moderate extent (13%) • The availability of appointment times: to a considerable extent (79%); to a moderate extent (13%) • The free access to the service: to a considerable extent (77%); to a moderate extent (5%) Considered effective in meeting participant needs: • Focus on health education and mental health promotion: to a considerable extent (44%); to a moderate extent (44%) • Discussion of solutions rather than problems: to a considerable extent (57%); to a moderate extent (26%) • Outpatient participants specified the ED location as distinct from the 'general hospital' setting as a determinant of their decision to attend the service

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Study	Self-harm	Violence	Service user experience
			Identified two main themes: 1. Therapeutic dimensions of the service Subtheme: listened to and understood *He took time to understand what had happened. I felt better after leaving the appointment* Subtheme: focus on solutions, not problems *The solutions, rather than just talking about the problems all the time* Subtheme: selected therapeutic approaches did not suit all client needs *In terms of the actual service, it was fairly inflexible, and it was you know . . . it wasn't as in depth as I was hoping for . . .* Subtheme: accessing health information and education *. . . take-away materials were really helpful* Subtheme: the 'nurse' in nurse practitioner participants noted a difference between the MHNP compared with a psychologist or psychiatrist: *Something unique about the role is that he's working in a sort of supportive counselling role, but also is able to prescribe medication, and that is quite helpful* 2. Practical and timely access to follow-up Subtheme: responsive access to care Service was perceived as easily accessible and free: *I didn't feel I had to wait around and ponder on whether it was worth it. It was dealt with really so fast and so positively that it was very effective* *Locating the service in the ED made it a lot easier and more likely to happen*

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Study	Self-harm	Violence	Service user experience
			Subtheme: continuity of care Benefits of follow-up from the same person after presenting to ED: *I just felt like I wasn't really forgotten about . . . I felt like after being in an emergency, I was kind of taken care of in terms of going to see the . . . nurse practitioner after that* Subtheme: need for extended service Some participants suggested need for further staffing and service to be available outside business hours: *If you are working a job, it is sometimes hard to get that time off during the day, and you don't actually want to tell your employer that you're going to see somebody because of a certain situation . . .* Service user satisfaction (survey data) (n = 51): 74.5% (38/51 availability) and 68.6% (35/51 accessibility) strongly agreed the service was convenient. 70.6% (36/51) felt listened to and understood, 60.8% (31/51) that they had received useful information and health education, 74.5% (38/51) felt they had received support and encouragement, and 68.6% (35/51) were satisfied with overall standard of care provided
Woo *et al.*, 2007[97]	NR	NR	NR
Police involvement in improving access to crisis care			
Compton *et al.*, 2014[107]	NR	NR	NR
Edmondson *et al.*, 2014[31]	220/673 (32.7%) calls involved self-harm, threatened suicide or overdose (usually owing to personal crisis such as relationship breakdown or financial problems)	NR	NR

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Study	Self-harm	Violence	Service user experience
El-Mallakh *et al.*, 2008[108]	NR	Patient injuries: 2002: 7/2269 (0.31%) 2004: 2/2112 (0.09%) 2006: 4/755 (0.53%) 2002 vs. 2004, $p < 0.01$; 2002 vs. 2006, non-significant; 2004 vs. 2006, non-significant Officer injuries: 2002, three officers (0.13%); 2004, 0; 2006, two officers (0.26%)	NR
Herrington and Pope, 2014[109]	37 self-inflicted injury	NR	Several people with mental illness expressed a feeling that police were fearful of them, and that this fear inadvertently escalated events: *The way I see it is their assumption is you've gone psychotic or suicidal, I'm dangerous and they're afraid of me. They're afraid of what I'll do. What I really need is for someone to say 'you're okay. You're safe with us. We're gonna help you'. But what they say is 'come on hurry up, get in line, get in the car', 'Duck your head'. They're aggressive towards me because I feel that they're afraid of what I'm gonna do to them . . .* *Person with mental illness, non-MHIT area*
Kisely *et al.*, 2010[105]	1534/3123 (49%) were for suicidal ideation	NR	Themes from focus groups for service users, family or friends, and mental health staff/police officers reflected the main themes identified by quantitative data. Service users found having someone to talk to, obtaining advice and support, and facilitating referral helpful: *So I just felt completely isolated except for the ability to be able to talk to somebody from Mobile Crisis* *One service user* Availability and accessibility: positive that services offered help to everyone, not just people with a fixed address; greater accessibility on the telephone; better understanding of mental health issues by police officers, and improved partnering on-scene: *I think it is an essential service and I would love to see it expand even further* *One key informant interviewee*
Steadman *et al.*, 2000[106]	NR	NR	NR

MHNP, mental health nurse practitioner; NR, not reported.

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Primary studies: service user outcomes

Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
Improving access to crisis care in the ED				
Adams and Nielson, 2012[103]	Mean psychiatric ED 30-day revisit rates for patients not admitted, 12 months prior to process plan: 6.51% (range 1.83–9.53%) At 6 months post implementation of process plan: 4.3% (range at 10 months, 3.53–5.56%)	NR	NR	NR
Cailhol *et al.*, 2007[101]	NR	NR	NR	NR
McDonough *et al.*, 2004[98]	Patient outcomes (803 contacts with ED): Admission for observation: 177/803 (22%) Mental health unit admission: 169/803 (21%) Medical admission: 24/803 (3%)	NR	Average time lag between arrival at ED and contact with EMTaCS: Baseline (235 minutes) 12 months (36 minutes); 95% reduction in 'seen by' time	NR
Pajonk *et al.*, 2008[102]	NR	NR	NR	NR
Sinclair *et al.*, 2006[99]	Referral rates per 100 A&E mental health attendees ($n = 6097$) admitted to general hospital ward: Pre-intervention: hospital 1 ($n = 3957$), 39.9%; hospital 2 ($n = 2140$), 48.2% Intervention: hospital 1, 38.8%; hospital 2, 41.7% Post-intervention: hospital 1, 43.8%; hospital 2, 44.9% Repeat attendances to A&E by patients with mental health problem: non-significant between intervention and non-intervention periods of both A&E departments	NR	Mean waiting times from arrival until assessment and treatment [calculated for 4364/6097 (72%) of attendances at A&E] *Pre-intervention* Hospital 1: 1–3 months, $n = 700$; 65.9 minutes (SD 53.4 minutes), 95% CI 62.0 to 70.0 minutes Hospital 2: 1–6 months, $n = 672$; 50.5 minutes (SD 48.3 minutes), 95% CI 46.9 to 54.2 minutes *Intervention* Hospital 1: 4–6 months, $n = 807$; 62.9 minutes (SD 52.3 minutes), 95% CI 59.3 to 66.5 minutes	NR

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Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
			Hospital 2: 7–9 months, $n = 331$; 46.0 minutes (SD 48.9 minutes), 95% CI 40.7 to 51.2 minutes *Post-intervention* Hospital 1: 7–12 months, $n = 1514$; 74.1 minutes (SD 54.7), 95% CI 71.3 to 76.8 minutes Hospital 2: 10–12 months, $n = 340$; 48.8 minutes (SD 46.3), 95% CI 43.8 to 53.7 minutes *Total* Hospital 1: $n = 3021$, 69.2 minutes (SD 54.0 minutes), 95% CI 67.3 to 71.1 minutes Hospital 2 $n = 1343$, 49.0 minutes (SD 48.0 minutes), 95% CI 46.4 to 51.5 minutes *Both hospitals* Pre-intervention: $n = 1372$, 58.4 minutes (SD 51.5 minutes), 95% CI 55.7 to 61.1 minutes Intervention: $n = 1138$, 58.0 minutes (SD 51.9 minutes), 95% CI 55.0 to 61.0 minutes Post-intervention: $n = 1854$, 69.4 minutes (SD 54.1 minutes), 95% CI 67.0 to 71.9 minutes *Total hospitals 1 and 2* $n = 4364$, 63.0 minutes (SD 53.0 minutes), 95% CI 61.4 to 64.6 minutes Although there were few significant differences between pre and post intervention in the unadjusted analyses, adjusted analyses found that A&E attendance during the intervention period and seeing a psychiatric nurse were associated with shorter waiting times	

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Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
Strike *et al.*, 2008[104]	NR	Many staff believed that some patients deliberately misbehaved to ensure they would be restrained and assigned to the psychiatric room believing that they enjoyed the attention they received: *He ends up in restraints every time he's here but he likes that; he likes the attention* *One ED nurse* Some staff acknowledged that disruptive patients were likely to be seen sooner than calmer patients. Some patients admitted to using disruptive behaviour (e.g. yelling, threatening) to avoid an overly-long waiting time and ensure that a physician would see them more quickly: *She [the crisis nurse] came from the Crisis Centre Unit, so she was coming in every little while, and she would say 'you have to wait, you have to wait; that's all there is to it' and she was very good to me. However, I don't think she did enough to speed up the process and it wasn't until I went into a temper tantrum that the process was speeded up like that* *One patient*	NR	NR

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Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
Tadros *et al.*, 2013[96]	Mean length of hospital stay: RAID: 9.4 days Pre-RAID: 10.3 days 79 cases ($p = 0.31$); 0.9 days saved per patient (797 days saved over 8 months) RAID-influence group: 5.2 days Pre-RAID: 8.4 days 359 cases ($p < 0.001$); 3.2 days saved per patient (8493 days saved over 8 months). Total savings over 8 months, 9290 bed-days in city hospital; savings over 12 months, 13,935 bed-days, equating to 38 beds per day Discharge effect: 75% of patients were discharged within 1 week and 65% were discharged within 3 days of seeing RAID independent of their length of stay	NR	NR	Referral to RAID team: Depression: 18% Alcohol-related problems: 13% Psychosis: 9% Anxiety: 4% Drug misuse: 4% Others (not specified): 2% Increases in mental health diagnosis at city hospital: Eating disorders: 46% Other anxiety disorders: 44% Dementia: 22% Mental and behavioural disorders due to alcohol: 21% Depression and related disorders: 17% Schizophrenia: 8%
Wand *et al.*, 2011[100]	NR	NR	NR	NR
Woo *et al.*, 2007[97]	Admission to inpatient unit ($n = 100$ each group) consultation model: 47%, PES model: 52%; $p = 0.48$ Readmission within 30 days ($n = 100$ each group) consultation model: 28%, PES model: 24%; $p = 0.52$	Seclusion and restraint ($n = 100$ each group) consultation model: 15%, PES model: 6%; $p = 0.05$	Timeliness of psychiatric evaluation ($n = 100$ each group) consultation model: mean 639 minutes, SD 508 minutes PES model: mean 330 minutes, SD 291 minutes; $p < 0.01$ Timeliness of medical clearance ($n = 100$ each group) consultation model: mean 328 minutes, SD 333 minutes PES model: mean 377 minutes, SD 317 minutes; $p = 0.29$	NR

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Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
Police involvement in improving access to crisis care				
Edmondson and Cummins, 2014[32]	66/673 (9.8%) calls Outcomes of Section 136: converted to 'informal' (voluntary) admission to hospital, 17/40 (42.5%) Converted to compulsory detention to hospital lasting up to 28 days: 4/40 (10%) Converted to compulsory detention to hospital lasting up to 6 months: 1/40 (2.5%) Section 136 completed (discharge with follow-up from specialist services): 15/40 (37.5%) Section 136 completed (discharged home with primary care follow up or no further action): 3/40 (7.5%)	NR	NR	Section 136 considered: 78/673 (12%) calls Section 136: used 43; 40 analysed, of which police officers contacted RAID on 31 (77.5%) occasions. Of the three incidents where RAID was not contacted, two already had mental health professionals on scene, one call to RAID went unanswered Section 136 detention (by calendar year): • 2010: 71 • 2011: 67 • 2012: 71 • 2013: 61 • 2014: 71 Pilot period (December 2013–May 2014): 43 Reasons for use of Section 136: • suicide/self-harm: 24/40 (60%) • agitated, erratic and/or unsettled behaviour: 8/40 (20%) • paranoia or psychosis: 4/40 (10%)
El-Mallakh *et al.*, 2008[108]	NR	Use of force: • 2002, 0.8% • 2004, 2.2% • 2006, 2.3%	NR	NR
Herrington and Pope, 2014[109]	NR	Coercive force: 58/471 Mental Health Act events; no significant difference in coercive force between months, and no difference between trained mental health officers and non-trained officers Injury resulting from police actions, $n = 4$ Transportation of people with mental illness and use of force	NR	NR

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Study	Hospital admissions	Use of force/restraint	Waiting times	Mental health outcomes
		Use of force: transport by police ($n = 16$); ambulance ($n = 2$); and other means ($n = 0$) No use of force: transport by police ($n = 55$); ambulance ($n = 18$); and other means ($n = 2$)		
Kisely *et al.*, 2010[105]	NR	NR	*Police time on scene* Pre-intervention: intervention (n = 798) mean 185 minutes (SD 185 minutes) vs. control ($n = 258$) mean 132 minutes (SD 130 minutes) 1 year post-intervention: intervention ($n = 1058$) mean 161 minutes (SD 160 minutes) vs. control ($n = 349$) mean 164 minutes (SD 165 minutes) 2 years post-intervention: intervention ($n = 1267$) mean 136 minutes (SD 136 minutes) vs. control ($n = 384$) mean 165 minutes (SD 165 minutes); intervention vs. control ($p < 0.001$) *Call-to-door time* 1 year post-intervention: intervention ($n = 172$) mean 73 minutes (SD 81 minutes) 2 years post-intervention: intervention ($n = 552$) mean 36 minutes (SD 39 minutes)	Global Assessment of Functioning scores post-intervention [318/1093 (32%) mobile visits]: mean score 52 (SD 17.7), representing moderate symptoms/difficulty in social, occupational, or school functioning
Steadman *et al.*, 2000[106]	NR	NR	NR	NR

EMTaCS, Emergency Department Mental Health Triage and Consultancy Service; NR, not reported; PES, psychiatric emergency service.

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Primary studies: other outcomes

Study	Other relevant outcomes
Improving access to crisis care in the ED	
Adams and Nielson, 2012[103]	NR
Cailhol *et al.*, 2007[101]	NR
McDonough *et al.*, 2004[98]	Average nightly contact rate: baseline (2.9 patients); 12 months (3.75 patients) Mean time of contact: 1 hour 40 minutes Patient outcomes (803 contacts with ED); review and management by other ED staff: 128/803 (16%); discharged home: 128/803 (16%) Discharged with social worker follow-up: 16/803 (2%) Discharged with community mental health nurse follow-up: 88/803 (11%) Discharged to inpatient psychiatric day programme: 8/803 (1%) Discharged to police: 8/803 (1%) Left without plan: 44/803 (6%) Referral to other mental health services: 8/803 (1%)
Pajonk *et al.*, 2008[102]	Treatment transport to hospital: city 1, 355/433 (83.1%); city 2, 188/210 (92.6%); OR 2.54 (95% CI 1.42 to 4.56) Any medication: city 1, 278/433 (63.9%); city 2, 153/210 (72.5%); OR 1.49 (95% CI 1.04 to 2.14) Non-pharmacological crisis intervention: city 1, 71/433 (16.3%); city 2, 18/210 (8.5%); OR 0.48 (95% CI 0.28 to 0.83)
Sinclair *et al.*, 2006[99]	Number of patients assessed and psychiatric nurse time utilised. Approximately one-third (411) of patients with mental health problems presenting to A&E while a psychiatric nurse was on duty were referred to the psychiatric nurse team, with just over 90% of these patients assessed Referral rates per 100 A&E mental health attendees ($n = 6097$) *Discharged to GP care* Pre-intervention [hospital 1 ($n = 3957$), 36.0%; hospital 2 ($n = 2140$), 28.5%] Intervention (hospital 1, 36.4%; hospital 2, 37.1%) Post-intervention (hospital 1, 35.5%; hospital 2, 35.4%) *Self-discharged* Pre-intervention (hospital 1, 11.8%; hospital 2, 10.1%) Intervention (hospital 1, 12.1%; hospital 2, 7.8%) Post-intervention (hospital 1, 13.4%; hospital 2, 9.2%) *Transferred to psychiatric hospital* Pre-intervention (hospital 1, 5.7%; hospital 2, 8.9%) Intervention (hospital 1, 5.6%; hospital 2, 7.6%) Post-intervention (hospital 1, 3.7%; hospital 2, 7.2%)

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Study	Other relevant outcomes
	Referred to outpatient clinic
	Pre-intervention (hospital 1, 4.0%; hospital 2, 3.0%)
	Intervention (hospital 1, 4.0%; hospital 2, 2.0%)
	Post-intervention (hospital 1, 2.7%; hospital 2, 2.3%)
	Other
	Pre-intervention (hospital 1, 0.8%; hospital 2, 1.1%)
	Intervention (hospital 1, 1.8%; hospital 2, 2.2%)
	Post-intervention (hospital 1, 0.6%; hospital 2, 0.5%)
	Not recorded
	Pre-intervention (hospital 1, 1.8%; hospital 2, 0.2%)
	Intervention (hospital 1, 1.3%; hospital 2, 1.6%)
	Post-intervention (hospital 1, 0.3%; hospital 2, 0.5%)
Strike *et al.*, 2008[104]	In general, comments about the psychiatric assessment room were negative and focused on both the physical attributes and location and the emotional responses it evoked. The psychiatric assessment rooms were designed for patients requiring a quiet environment with close supervision. However, staff commented that the ED setting was not appropriate for patients in need of a calm environment
	Staff also noted that the rooms were intentionally stark and lacking in furnishings, decoration, or freestanding equipment in order not to impede the work of the staff and to reduce the injury to self, staff, or other patients. Patients also commented negatively on the physical aspects of the room
Tadros *et al.*, 2013[96]	Response times (RAID assessments):
	A&E referrals: 113 of 124 (91%) per month assessed within 1 hour (average time 24 minutes)
	Ward referrals: 788 of 886 (89%) assessed within 24 hours (average time 16 hours)
	Patient survival rate
	RAID group vs. pre-RAID group and RAID-influence group: $p < 0.0001$
	RAID-influence group vs. pre-RAID: $p = 0.21$
	Readmissions
	RAID influence vs. RAID group: HR 2.80, 95% CI 2.68 to 2.92
	Pre-RAID vs. RAID group: HR 2.45, 95% CI 2.33 to 2.57
Wand *et al.*, 2011[100]	NR
Woo *et al.*, 2007[97]	For all outcomes $n = 100$ for each group
	Mental State Exam conducted
	Consultation model: 49%
	PES model: 95%; $p < 0.01$
	Emergency medication given
	Consultation model: 74%
	PES model: 53%; $p = 0.01$

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Study	Other relevant outcomes
	Elopement Consultation model: 13% PES model: 5%; $p = 0.05$ *Follow-up care provided* Consultation model: 58% PES model: 69%; $p = 0.11$
Police involvement in improving access to crisis care	
Compton *et al.*, 2014[107]	*Disposition* Situations resolved: 47% CIT officers/48% non-CIT officers; OR 0.96, non-significant Referrals: 13% CIT officers/24% non-CIT officers; OR 1.70, significant ($p < 0.05$) Arrests: 13% CIT officers/24% non-CIT officers; OR 0.47, significant ($p < 0.05$) *Disposition by condition* Arrests: Mental illness only (40%): CIT trained officers ($n = 16$)/non-CIT trained officers ($n = 23$); OR 0.34 Mental illness and drug or alcohol problem (10%): CIT trained officers ($n = 10$)/non-CIT trained officers ($n = 10$); OR 1.09 Drug or alcohol problem only (34%): CIT trained officers ($n = 34$)/non-CIT trained officers ($n = 81$); OR 0.68 Disability or nothing indicated (16%): CIT trained officers ($n = 7$)/non-CIT trained officers ($n = 18$); OR 0.26 Situations resolved (number of encounters): Mental illness only (40%): situations resolved (number of encounters) – CIT trained officers ($n = 111$)/non-CIT trained officers ($n = 94$); OR 0.96 Mental illness and drug or alcohol use (10%): situations resolved – CIT trained officers ($n = 19$)/non-CIT trained officers ($n = 25$); OR 0.60 Drug or alcohol problem only (34%): CIT trained officers ($n = 53$)/non-CIT officers ($n = 106$); OR 0.73 Disability or nothing indicated (16%): CIT trained officers ($n = 62$)/non-CIT trained officers ($n = 35$); OR 1.90 Referrals: Mental illness only (40%): CIT trained officers ($n = 104$)/non-CIT trained officers ($n = 74$); OR 1.54 Mental illness and drug or alcohol use (10%): CIT trained officers (22)/non-CIT trained officers ($n = 18$); OR 1.52 Drug or alcohol problem only (34%): CIT trained officers ($n = 45$)/non-CIT officers ($n = 43$); OR 2.16 Disability or nothing indicated (16%); CIT trained officers ($n = 34$)/non-CIT trained officers ($n = 21$); OR 1.06

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Study	Other relevant outcomes
Edmondson and Cummins, 2014[31]	Use of RAID: 217/673 (32%) calls Length of time spent with individuals: resolved within 1 hour – 669/673 (99.4%) Of the 40 Section 136 cases, 30/40 (75%) resolved within 1 hour; 5/40 (12.5%) delays of over 4 hours Write up using the national decision-making model: 282/673 (42%) calls. However, this may be misleading as officers following this model may not be formally identifying that they are doing so Police officers strongly indicated that access to RAID improved communication, co-ordination of police – RAID work, timeliness of interventions and completion of assessments within satisfactory time scales Challenges to the use of RAID included unanswered calls, access to radio sets and mobile phones to use RAID; disagreements between police and health staff on appropriate designated Place of Safety
El-Mallakh *et al.*, 2008[108]	Prison mental health unit occupancy remained unchanged: 1123 pre CIT in 2001; 1244 post CIT in 2002; 1165 in 2003; 1027 in 2004; and 1347 in 2005 Intense psychiatric service referrals significantly decreased: 595 (53%) pre CIT in 2001; 275 (26.8%) in 2004; $p < 0.01$; and 320 (23.8%) in 2005; $p < 0.01$ Arrests rates: CIT arrest rates (2.1%) vs. overall arrest rate (6.2%); $p < 0.01$
Herrington and Pope, 2014[109]	Interactions between police and people with mental illness: Most of the 42 trained officers believed the training changed their approach to mental health-related events; half believed the changes were considerable, particularly relating to empathy. Self-reported behaviour change (39 police officers, 18 months post-training): Better understand relations with other (health) agencies: $n = 5$ More calm approach: $n = 2$ Take more time/patience: $n = 6$ Understand/empathise more: $n = 16$ More aware of own behaviour when interacting/confidence: $n = 4$ Better planned approach/use of other options: $n = 6$ Confidence: pre training vs. 2 months post training ($p < 0.001$); pre training vs. 18 months post training ($p < 0.001$); 2 months vs. 18 months post training ($p =$ not significant) De-escalation: 344 events; no differences found between trained and non-trained officers in terms receiving schedule 1 (mental health-related) events, in conveying people with mental health problems to health-care services, or in average duration of Schedule 1 events. However, self-reported data suggested trained officers perceived a reduction in average duration of events from 106 to 56 minutes
Kisely *et al.*, 2010[105]	Availability and accessibility: 12 months pre-intervention – crisis team responded to 464 people; 2793 contacts Year 1 of intervention: 1414 people, 5911 contacts Year 2 of intervention: 1666 people, 7558 contacts Outpatient attendance: pre-intervention (8380 visits) vs. year 1 of intervention (8523 visits). After adjusting for confounders (e.g. mental health service use), people who had contacted the services ($n = 295$) showed greater engagement than controls as measured by outpatient contacts ($p < 0.001$)

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Study	Other relevant outcomes
Steadman *et al.*, 2000[106]	*Specialised response on the scene* Birmingham, 28/100 (28%); Knoxville, 40/100 (40%); Memphis, 92/97 (95%); total, 160/297 (54%); $p < 0.001$ for the difference between programmes. Knoxville had lengthy response time, which posed a significant barrier to use of the service by police. In Birmingham there were only six community service officers for a police force of 921, severely restricting the availability of the officers with special training *Disposition* Taken to treatment location: Birmingham, 20%; Knoxville, 42%; Memphis, 75%; total, 46% Situation resolved on the scene: Birmingham, 64%; Knoxville, 17%; Memphis, 23%; total, 35% Referred to treatment: Birmingham, 3%; Knoxville, 36%; Memphis, 0%; total, 13% Arrested: Birmingham, 13%; Knoxville, 5%; Memphis, 2%; total, 7%; $p < 0.001$ for the difference in dispositions between programmes

PES, psychiatric emergency service.

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Study quality

Primary study quality assessment (comparator studies)

First author (year)	Adequate allocation concealment	Random sequence generation	Blinding of participants	Blinding of personnel	Blinding of outcome assessors	Incomplete outcome data	Selective outcome reporting	Other sources of bias
Improving access to crisis care in the ED								
Pajonk *et al.*, 2008[102]	No	No	Unclear	No	No	Yes	Unclear	Unclear
Sinclair *et al.*, 2006[99]	No	No	Unclear	No	No	Yes	Unclear	Unclear
Tadros *et al.*, 2013[96]	No	No	No	No	Unclear	Unclear	Yes	Yes (selection bias)
Woo *et al.*, 2007[97]	No (not a RCT)	No (not a RCT but aimed to match on age, sex, ethnicity, and primary diagnosis)	Unclear	Unclear	Unclear	None	Unclear	Unclear
Police involvement in improving access to crisis care								
Compton *et al.*, 2014[107]	No	No	No	No	No	Yes	Unclear	Unclear
Herrington and Pope, 2014[109]	No	No	No	No	Unclear	Unclear	Unclear	Unclear
Kisely *et al.*, 2010[105]	No	No	No	No	No	Yes	Unclear	Unclear
Steadman *et al.*, 2000[106]	No	No	No	No	Unclear	Unclear	Yes	Unclear

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Primary study quality assessment (no comparator)

First author (year)	Study sample representative of population	Loss to follow-up unrelated to key characteristics	Prognostic factor adequately measured in study participants	Outcome of interest adequately measured	Important potential confounders are appropriately accounted for	Statistical analysis is appropriate for the design of the study
Improving access to crisis care in the ED						
Adams and Nielson, 2012[103]	Yes	Unclear	Unclear	Yes	Unclear	Unclear
Cailhol *et al.*, 2007[101]	Yes	Unclear	Unclear	Unclear	Unclear	Yes
McDonough *et al.*, 2004[98]	Yes	Unclear	Yes	Yes	Unclear	Yes
Police involvement in improving access to crisis care						
Edmondson and Cummins, 2014[31]	Yes	Unclear	Unclear	Unclear	No	Yes
El-Mallakh *et al.*, 2008[108]	Yes	Unclear	Unclear	Unclear	Unclear	Yes

Primary study quality assessment (qualitative)

Study	Clear statement of aims	Qualitative methodology appropriate	Research design appropriate	Recruitment strategy appropriate	Data collected in a way that addressed the issue	Relationship between researcher and participant adequately considered	Ethical issues addressed	Data analysis sufficiently rigorous	Clear statement of findings	Value of the research
Improving access to crisis care in the ED										
Strike *et al.*, 2008[104]	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	The data are valuable in terms of highlighting experiences in a specific service user population
Wand *et al.*, 2011[100]	Yes	Yes	Yes	Unclear	Yes	Unclear	Yes	Yes	Yes	It has some value in terms of service user satisfaction and perceptions

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