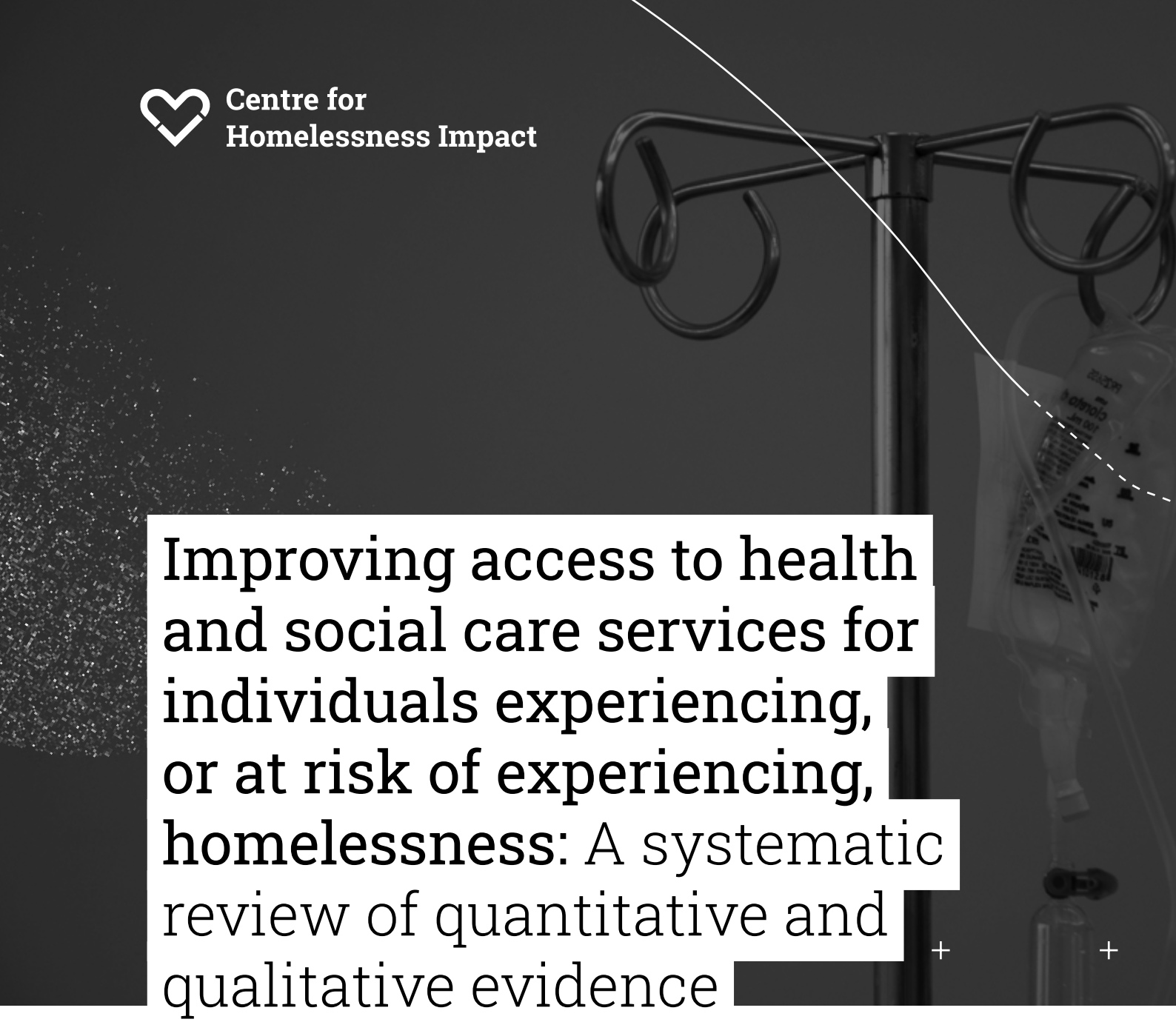
Centre for Homelessness Impact



Improving access to health and social care services for individuals experiencing, or at risk of experiencing, homelessness: A systematic review of quantitative and qualitative evidence

Campbell UK & Ireland
Centre for Evidence and Social Innovation
Queen's University Belfast

Campbell UK & Ireland

QUEEN'S UNIVERSITY BELFAST

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About the Centre for Homelessness Impact

The Centre for Homelessness Impact champions the creation and use of better data and evidence for a world without homelessness. We are a member of the UK What Works Network and launched in 2018 to act as a catalyst for evidence led change to enable people working in and around homelessness to achieve breakthrough results.

About Campbell UK & Ireland

Campbell UK & Ireland is a national centre of the international Campbell Collaboration, established and hosted by the Centre for Evidence and Social Innovation at Queen's University Belfast. Our role is to promote the work of the Campbell Collaboration across the UK and Ireland.

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Foreword

Access to basic health and social care (HSC) services is a fundamental human right. Through regular and appropriate contact with health and social care professionals, morbidity and other outcomes related to ill health are reduced and quality of life is increased. But access to HSC services is more complicated for people experiencing homelessness, in particular street homelessness, and interventions are therefore needed to reduce the additional barriers that these people face.

People experiencing homelessness are also more likely to have multiple and complex health needs and comorbidities which require a specialist approach. Unfortunately, the same factors that make access to health and social care so necessary often prevent people from accessing the services they need, leading to worse outcomes in the long term.

The reasons for this lack of engagement with health services are multifaceted, but broadly the interventions designed to address them fall into three categories: availability — those interventions that address whether the appropriate HSC services are delivered in the right location and at the right time to effectively meet the needs of the population; affordability — those interventions which address the gap between the costs of the service against the person's ability to pay; and acceptability — those interventions which focus on preparedness of different HSC professional groupings, either individually or within multidisciplinary teams, to address the HSC needs of specific individuals.

Access to appropriate HSC represents much more than improved health outcomes. The empowerment and self-esteem associated with health autonomy is a central aspect of quality of life.

This review examines all the extant evidence on interventions which improve access to HSC services. It details both qualitative and quantitative evidence, synthesizing the effectiveness of interventions at improving access to relevant HSC services and the barriers and facilitators for the implementation of these interventions.

At a qualitative level, the synthesis highlights the relevance of taking both a trauma-informed and psychologically informed environments (PIE) approach to improve the acceptability of services to users. This highlights the importance of strong relationships between clients and staff, the benefits of employing people with lived experiences of homelessness when implementing services, ensuring the flexibility of direct service delivery to improve engagement and increasing the autonomy of clients wherever possible.

The conclusions drawn from this rigorous synthesis offer promising foundations for interventions on improving access to HSC. They show that broadly, the interventions reviewed cause a moderate increase in service utilisation and are effective at removing barriers and improving access to beneficial services.

Of course systematic reviews tell us as much about what we don't know as what we do, and this review demonstrates that there is still much to learn about lifting other barriers to access, in particular the affordability and acceptability of services, where there is still such limited research to draw upon. It also highlights the fact that we understand very little about the impact of multi-component interventions — in which the availability, affordability and acceptability of services are affected in tandem — and the mechanisms by which they affect change. This shows us where we need to focus our efforts in future.

CHI, in collaboration with other key partners such as the Campbell Collaboration, will continue to fund a programme of work to put the best available evidence at the fingertips of decision-makers. Our aspiration is that harnessing this existing evidence and highlighting where gaps exist will be a significant contribution to bring about a much needed evidence-informed change to the homelessness sector.

Ligia Teixeira

Executive Summary

What is this review about?

People experiencing homelessness are typically at much greater risk of poor physical and mental health than the general population (Homeless Link, 2014) making it vital that they are given increased access to health and social care (HSC). Unfortunately, the multiple comorbidities that make access to HSC so necessary often prevent people from accessing the services they need. For example, registering for health care often requires a long list of documentation, including proof of address, that many people experiencing homelessness will lack due to the fact that they are homeless. This leads to worse outcomes in the long term. In order to improve access to HSC services it is essential that these barriers are addressed, but little is known about which interventions improve access to HSC services.

What key insights did this review produce?

This review confirms that interventions which seek to increase access to services are wide ranging, consisting of a variety of component parts and targeting diverse groups of people; from those with long-term experience of homelessness to households with dependent children. The quality of the current quantitative evidence is low, and the majority of these studies are from the US. Nonetheless, there are important insights that can be drawn from both the quantitative and qualitative evidence. The evidence also highlighted the relevance of creating trauma-informed and psychologically informed environments (PIE) to improve the acceptability of services. They speak to the importance of the staff or volunteers delivering services understanding the needs of the people they are working with. Equally important is incorporating flexibility into any contacts and service provision to facilitate both access and engagement:

- Good, trusting relationships between clients and staff are identified as key to successful service uptake and implementation through, for example, joint decision making and establishing clear roles and responsibilities.

- Employing people with experiences of homelessness when designing and evaluating services.
- Ensuring flexibility for direct service delivery staff to meet clients' needs, and varying the intensity of services over time, as required. For example, flexible start times of services or sessions, identifying and addressing small problems when they arise to prevent escalation or varying the duration and frequency of home visits depending on the clients' current level of service need.
- Ensuring people have both choice and control when engaging with services, for example joint decision making when it comes to individual plans and accommodation location.
- Maintaining contact when they are in the process of exiting a service, ensure a support plan is in place.

Are these interventions effective at improving access to HSC services?

This review reveals a moderate increase in accessing health and social care services for those receiving the intervention programme compared to standard care. Only 16/47 studies directly measured access to services as a specific outcome. Those studies that did not explicitly measure access to services as an outcome are still included in the discussion below, related to secondary outcomes. There were unfortunately insufficient studies and data to compare the relative effectiveness of different types of intervention at improving access to HSC.

Across the studies included in this analysis, 'access' was defined, measured and reported in different ways and included: frequency of participants' contact with the programme, engagement with mental health services, attendance in substance use programmes and utilisation of other services not always specified in the study report but including, for example, vaccination uptake.

As most of the studies were undertaken in the US, we cannot assume that the results will be replicable in other countries due to differences in welfare systems and the different ways in which interventions are conceived, understood, costed and implemented. As most HSC services are universal and free at the point of use in the UK, but not in the US, a plausible assumption is that this type of intervention might be more effective in the US as the barriers to access are higher. As with importing any intervention to a new context or setting, rigorous evaluation of both effectiveness and implementation is required as a programme is rolled out in order to find out whether it is less, similarly or more effective.

Are these interventions effective at improving other outcomes?

The results show that the programmes included in the review have the potential to improve other outcomes in addition to improving access to services.

These other outcomes may be improved by increasing the accessibility and engagement with these services, but there are also other potential mechanisms: some of these interventions are holistic and have multiple components which might have separate, direct impacts on outcomes. It is not possible, however, to separate out the relative impact of the components of an intervention, which means we are unable to determine the precise contribution of increased access to services to changes in outcomes.

Nevertheless, recipients of the interventions experienced measurable improvements in quality of life and to a lesser extent increased levels of social support as well as a reduction in visits to the emergency department. Other secondary outcomes showed only extremely small changes as a result of programme participation, namely hospitalisation, drug and alcohol use, mental health, arrests and incarcerations, and employment status.

Whilst the quantitative studies included in this review aimed to improve access, not all of them measured access, meaning they were not included in the analysis of the primary outcome. This speaks to the importance of future programmes and research in this space making efforts to understand

and test both the mechanisms by which impact occurs, and the relevant outcomes that are expected to change as a result. For instance, future programmes / studies could consider approaches (for example, factorial designs) that specifically test the effectiveness of discrete programme components, or foci, using a logic model approach to appropriately map the hypothesised change mechanism and identify (and measure) all relevant outcomes. This would allow us to better understand how multi-component access programmes are achieving their impacts, and which components of the programme are affecting which outcomes (and how).

Which are the key considerations for implementation of these programmes?

he availability, affordability and acceptability framework (set out in the background section) was not so easily applied to the quantitative studies. This was because they mostly focused on improving availability. The qualitative studies included in this review (which were mostly UK-based) did, however, provide insight into some practical considerations that should be taken into account.

- Making services more readily available and accessible was a key component of many of the programmes included.
- Using flexible and extended operating hours by, for example, ensuring that service hours are also available outside working hours to allow employed individuals to avail of the services they require.
- Increasing the capacity of case workers is key to providing an intense and individualised service for those wishing to access services.
- Improving the timeliness of access to services to reduce the length of time that people have to wait in order to avail of the service they need.
- Improving collaboration between statutory, community and voluntary organisations offering HSC services in order to improve accessibility for people who are homeless or at risk of homelessness. For example, through strategic level responses to homelessness and/or partnerships between organisations using joint protocols to create a single route to access services.

- Providing high quality training for health and social care professionals to promote the use of their emotional awareness and communication skills to facilitate accessibility for clients.
- Physically locating services so that they are close to where clients are residing.
- Adapting methods of communication and how information is presented to service users (including information in multiple languages).

How was this review conducted?

This review examines all the existing evidence on interventions which improve access to HSC services. It details both qualitative and quantitative evidence, synthesizing the effectiveness of interventions at improving access to relevant HSC services and barriers and facilitators for the implementation of these interventions.

The review focuses specifically on interventions which change something about how, where, or to whom a service is delivered or where services actively seek to remove barriers to access for a population, classified in three broad categories:

Availability — focusing on intervention to ensure HSC services are delivered in the right location and at the right time;
Affordability — aiming to address the gap between the costs of the service and the person's ability to pay; and

Acceptability — focusing on preparedness of HSC professionals to address the specific needs of individuals from different perspectives (e.g. a psychosocial approach) and how these may improve their perceptions about the HSC services given.

85% of the interventions explored in this review focused on increasing the availability of services for people experiencing homelessness, 15% aimed to increase both availability and acceptability, while only one intervention addressed improvement to all three categories. Specific examples of programmes represented in this analysis can be found in the results section

of the review. Given the heavy weighting towards availability and acceptability of services in the existing literature, it was not possible to ascertain whether interventions that favour a specific approach (availability, affordability, or acceptability) are more effective than others.

This review has two components: qualitative and quantitative. The first synthesises the effectiveness of interventions at improving access to relevant HSC services. Only around a third of the interventions included (16/47) actually measured access to services as a primary outcome. Those interventions that did not include access to services as an outcome are still included in the review to test their impact on other outcomes such as health.

The second part of this review draws on the qualitative evidence around the barriers and facilitators for the implementation of these interventions. Brought together, the quantitative and qualitative findings give us a more nuanced understanding to inform the development of new interventions to improve access to HSC services.

Which studies are included in this review?

This systematic review uses evidence already identified in two existing evidence and gap maps (EGMs) commissioned by the Centre for Homelessness Impact (CHI). The search for the EGMs was conducted in September 2018.

For the quantitative element of this review, 47 studies containing 73 access intervention papers were identified from CHI's Effectiveness EGM. Most of the included studies (43/47) were carried out in the US. Twenty-nine (29) were randomised controlled trials and 17 were quasi-experimental (non-randomised) studies. The quality of the evidence was generally low across the 47 included studies. Of the 29 RCTs, nine were at high risk of bias, 18 were moderate and two were at low risk of bias. Of the 17 quasi-experimental (non-randomised) studies, three were at high/critical risk of bias, seven were at serious risk of bias, seven were at moderate risk of bias and none were at low risk of bias. Additional analyses showed that results were not dependent on study design or risk of bias.

For the qualitative element of this review, 111 papers were identified as relevant to access to HSC services. From these 111, a purposive sample of 10 papers was selected for synthesis to create a manageable and rich dataset. These included an evaluation focusing on veterans accessing employment and health service and, one on single-parent households accessing appropriate accommodation and services. Other evaluations focused on specific groups including children, young people, people experiencing street homelessness, and specifically Eastern European migrants experiencing homelessness. Eight of the selected studies are based on interventions conducted in the United Kingdom, one in the US and one in Australia.

Background

The problem, condition or issue

Homelessness is a multifaceted issue with outcomes that are as complex and unique as the individual who is experiencing life without stable housing. People who are currently experiencing homelessness have a much greater risk of poorer physical and mental health than the general population (Homeless Link, 2014), and so the requirement to access health and social care (HSC) services is increased.

Accessing HSC services while homeless may be challenging for several reasons. Some examples include:

- There are many countries without a free health care system and individuals experiencing homelessness may need to prioritise food and temporary shelter over their basic HSC needs. Furthermore, people may not be aware of the existence of all the services that might be available to them.
- There can be difficulties associated with registering for HSC services due to practical issues such as the requirement of documentation including; health insurance, personal identification, national insurance/ social security numbers, or current address details.
- Issues with the location of the HSC services may be an additional barrier to those without access to transport.
- Limited access to technology can be a further barrier to navigating online pathways to services.
- It may be that there is a lack of suitable HSC services to meet an individual's needs, or there may be a waiting list that delays a person's access to the service they require.

- The individual may be someone who has multiple HSC needs. The range and complexity of these needs make it particularly difficult for the person experiencing homelessness to access all the services that they require without support. Meeting these needs may entail managing a range of professional appointments in a variety of different HSC settings.
- People experiencing homelessness, who may be dealing with one or more HSC need, may live in, or be placed in living environments e.g. hostel accommodation, which may not be suitable to their recovery pathways. The increased environmental stress that these living arrangements can cause may further impact on an individual's health outcomes, for example, increased anxiety and/or depression or relapse into alcohol or drug addiction. This in turn may lead to a decreased capacity on the part of the person who is experiencing homelessness to access relevant services or remain compliant with HSC services that they were engaging with.
- Finally, people experiencing homelessness experience high levels of prejudice and discrimination (Weng & Clark, 2018) and so fear of these pervasive attitudes and behaviours, coupled with low confidence and self-esteem, may prevent the people who need services the most taking steps to access them.

The intervention

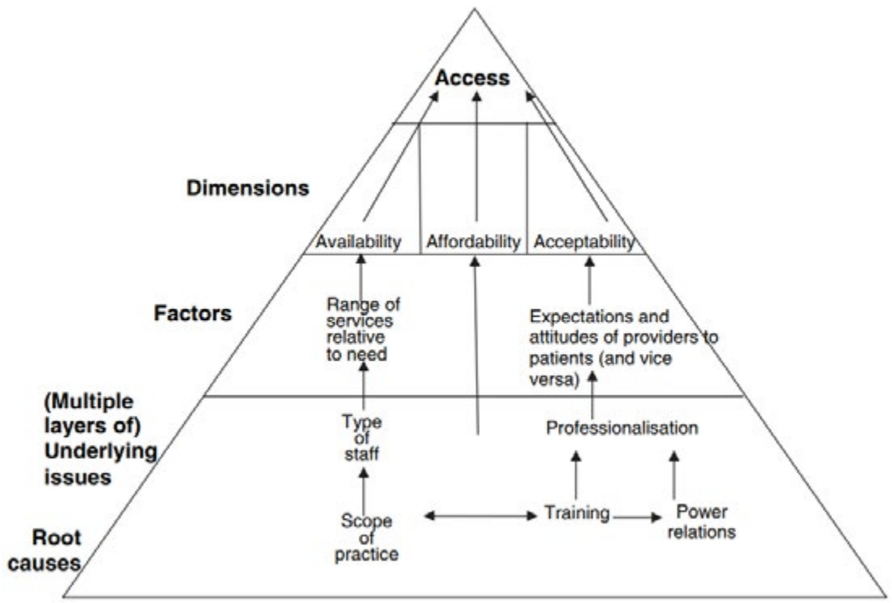
Individuals experiencing homelessness often have various comorbidities that require support from a range of HSC services. These services may be provided by professionals such as general practitioners, psychiatrists, psychologists, social workers, community nurses, psychotherapists, occupational therapists, hospital staff, dentists, pharmacists, and staff working in housing, employment or education services. A person experiencing homelessness may face multiple barriers to accessing these services and professionals.

To improve access to HSC services, these barriers need to be addressed. This systematic review includes all relevant studies which evaluate the effectiveness of interventions which aim to improve the accessibility

of HSC services for individuals experiencing, or at risk of experiencing homelessness. Here we will focus on interventions which change something about how, where, or to whom the service is delivered or where the services actively seek to remove barriers to access for this population. Although related, this systematic review is not concerned with those studies which assess the effectiveness of the HSC services themselves. We will only include interventions that seek to change something about the service, and how it is delivered, to increase its accessibility. We will exclude interventions that only seek to change the service users' behaviour or provide support for a person to access an existing service. Service level change must be a component of the intervention. For example, many case management programmes will assign a case manager to work with individuals to help them to navigate the complex landscape of services and entitlements in their local area. This approach does not typically involve the services themselves making changes to improve accessibility.

McIntyre, Thiede, and Birch (2009) have created a conceptual framework (Figure 1) to capture the precise meaning of access to health care in low- and middle-income countries. The three dimensions identified by the study authors are availability, affordability, and acceptability. This research provides a framework for this review to both categorise the studies and understand the barriers and opportunities that may influence access to HSC services for individuals experiencing homelessness. These dimensions are described in more detail below.

Figure 1. Access evaluation framework as presented in McIntyre, Thiede and Birch (2009)



Availability

Interventions included in this category are those that address whether the appropriate HSC services are delivered in the right location and at the right time to effectively meet the needs of the population. These interventions may address barriers such as:

- The physical location of HSC services in relation to the service user (e.g. Are clinics which deal with HIV related illness situated in places where there is a high proportion of homeless individuals with HIV?).
- System factors such as the opening hours of services and how appointment systems are managed (e.g. Ensuring that service hours are also available outside working hours to allow employed individuals to avail of the services they require).

- Relationship between what the service provider has to offer and what the service user requires (e.g. A service provider which seeks to provide care in a holistic way so that the service user is not required to wait for multiple referrals from various providers. One example might be the integration of an outpatient treatment centre within a primary care setting).

Affordability

Interventions in this category are those which address the gap between the costs of the service against the person's ability to pay. Most interventions included in this category focus on the provision of public funding, vouchers, or charitable donations to enable a person to access the services they require. These interventions to address affordability of HSC services work to remove barriers associated with the following factors:

- The price of the service at the point of delivery (e.g. A scheme which provides free medical care to the service user).
- Direct costs (e.g. Providing free insulin to individuals who are diabetic).
- Indirect costs (e.g. If a person has a mental illness and is employed, they may be unable to access a service due to the time requirements. A relevant intervention may provide monetary cover for the loss of income while they attend appointments).

Acceptability

This category contains interventions which focus on preparedness of different HSC professional groupings, either individually or within multidisciplinary teams, to address the HSC needs of specific individuals. Different HSC professional groupings tend to have differing perspectives on the underlying causes of specific issues and how best to support these needs. This is based on the training that the individual professions receive and their professional socialisation. These differing perspectives can have a profound effect on the ability of people who are experiencing homelessness to access HSC services. HSC services which operate out of a psychosocial model are likely to promote access for people who are experiencing homelessness due to their person-centred nature and wider assessment

criteria. HSC services adhering to the medical model would likely reduce access to services for people who are experiencing homelessness, unless their needs fit within its more stringent diagnostic criteria. Interventions here may focus primarily on the attitudes and expectations each group will have of the other, and how addressing these pervasive cognitive factors may improve access to services.

Some examples of these include:

- Provider expectations (e.g. A provider may offer extended and additional services for those who adhere to the prescribed treatment).
- User expectations (e.g. The desire to be listened to and respected when describing service needs. Perhaps enhancing autonomy of care by creating a comprehensive care plan between the service provider and user).
- Improving cooperation between service providers to meet the service user's expectations (e.g. Minimising the burden placed on individuals experiencing homelessness, by creating a smoother referral process and improving communication between statutory, community and voluntary organisations offering HSC services).

How the intervention might work

Facilitating access to HSC services helps those individuals experiencing homelessness lead more independent, healthy and happy lives, while retaining autonomy over their health and social care choices. When a service that someone requires is inaccessible, they cannot receive the treatment and support available, meaning it has failed to meet their needs.

The United Kingdom's National Health Service (NHS) recognises the need to improve access to services especially to underprivileged groups as outlined in principle one of the NHS constitution.

> *"The NHS provides a comprehensive service, available to all…it has a duty to each and every individual that it serves and must respect their human rights. At the same time, it has a wider social duty to promote equality through the services it provides and to pay particular attention to groups or sections of society where improvements in health and life expectancy are not keeping pace with the rest of the population."*

Why it is important to do the review

To ensure that policymakers and practitioners avail of the most robust and rigorous evidence to date, there is a significant need to identify and combine all relevant interventions which aim to improve accessibility of HSC services for individuals experiencing, or at risk of experiencing homelessness.

This systematic review is based on evidence already identified in two existing evidence and gap maps (EGMs) commissioned by the Centre for Homelessness Impact (CHI) and built by White, Saran, Teixeira, Fitzpatrick & Portas (2018). The EGMs present studies on the effectiveness and implementation of interventions aimed at people experiencing, or at risk of experiencing, homelessness. The EGMs were constructed using a comprehensive search strategy including a search of Campbell, PROSPERO and Cochrane databases. The EGMs identified various systematic reviews which assess the effectiveness of interventions to improve both physical and mental health in homeless populations (Hwang, Tolomiczenko, Kouyoumdjian & Garner, 2005; Speirs, Johnson & Jirojwong, 2013; Thomas, Gray & McGinty, 2011) and reducing homelessness (Fitzpatrick-Lewis, et. al., 2011; Munthe-Kaas, Berg & Blaasvær, 2018) but fewer focus on those interventions which seek to improve access to HSC services. The systematic reviews which synthesise the literature around interventions to improve access to HSC services are summarised below, including how they are different from the current review.

Restricted by intervention

Three reviews have included only those interventions which use social networking sites to improve access to HIV prevention services. First, a systematic review by Capurro and colleagues (2014) identified 73 studies. However, as they focused on a general population of participants described as 'difficult to reach' only two studies which focused on young people experiencing homelessness were included (Rice, Tulbert,

Cederbaum, Barman Adhikari & Milburn, 2012; Young & Rice, 2011). Similarly, a second systematic review (Lim, Wright, Carrotte & Pedrana, 2016) of 47 studies found only one which included a homeless population (Rice et al., 2012). Thirdly, in a systematic review which located 58 social network-based interventions (Ghosh et al., 2017) five were on men or youths experiencing homelessness.

Another systematic review identified by the map did centre on individuals experiencing homelessness (McInnes, Li & Hogan, 2013). However, it focused on their access to information technologies such as mobile phones and the internet. The authors do conclude that this access to technology will improve access to HSC, but this was not tested within the review.

Restricted by population

Three reviews have included only specific subsets of people experiencing homelessness . First, a review by Hudson and Colleagues (2016) included nine qualitative studies which focused on access to services of those individuals requiring palliative care, while another systematic review of 62 studies (Brown, Rice, Rickwood & Parker, 2016) focused on those individuals requiring mental health care only. Third, a systematic review of 12 studies conducted within the European Union (de Vries et al., 2017) focused on access to diagnostic and treatment services for tuberculosis patients.

Restricted by outcome

Finally, although a systematic review of five studies exists which has similar objectives to the current review (Health Quality Ontario, 2016), one of the inclusion criteria is more limited than the current review. Authors retrieved only those interventions that would improve access to a primary care provider (a physician, a nurse, or a nurse practitioner). This review is wider in scope and includes interventions which seek to improve accessibility to any HSC services, not just primary care.

Inclusion of qualitative data

The current review also differs from previous reviews in that it includes a synthesis of qualitative data from relevant implementation and process evaluations. The inclusion of these data allows us to explore relevant contextual factors that might influence (positively or negatively) the successful delivery of services.

Objectives

1. What is the effect of interventions to improve accessibility of health and social services on outcomes for individuals experiencing or at risk of experiencing homelessness?
2. Who do these interventions work best for?
   - complexity of needs.
   - age.
   - those with dependent children compared to single individuals.
3. What implementation and process factors impact intervention delivery?

Methods

Criteria for including and excluding studies

Types of study designs

We included all study designs where a comparison group is used. This includes randomised controlled trials, quasi-experimental designs, matched comparisons, and other study designs that attempt to isolate the impact of the intervention on homelessness using appropriate statistical modelling techniques.

As randomised controlled trials are accepted as more rigorous than non-randomised studies, the potential impact of non-random study design on effect sizes is explored as part of the analysis of heterogeneity.

Studies must include an inactive comparison condition that could include;

- No treatment.
- Treatment as usual, where there is no service level change to accessibility. Details of what this consists of are extracted.
- Waiting list, where service providers or service users are assigned to receive the intervention at a later date. Details of what happens to waitlisted participants are extracted.
- Attention control, where participants receive some contact from researchers but both participants and researchers are aware that this is not an active intervention.
- Placebo, where participants perceive that they are receiving an active intervention, but the researchers regard the treatment as inactive.

Studies with no control or comparison group, unmatched controls or national comparisons with no attempt to control for relevant covariates are not included. Case studies, opinion pieces or editorials are also not included.

Types of participants

The included studies include populations primarily from high-income countries. Homelessness is defined as those individuals who are sleeping ‘rough’ (sometimes defined as street homeless), those in temporary accommodation (such as shelters and hostels), those in insecure accommodation (such as those facing eviction or in abusive or unsafe environments), and those in inadequate accommodation (environments which are unhygienic and/or overcrowded).

Types of interventions

Interventions that are included within this systematic review are those with an explicit objective of improving accessibility of HSC services, we are not concerned with the effectiveness of the services themselves. HSC services vary immensely according to factors such as resources available in each jurisdiction and/or the specific needs of the individual experiencing homelessness. Some examples of interventions may include:

- Those which seek to improve accessibility of a GP or nurse,
- Interventions which seek to improve collaboration between statutory, community and voluntary organisations offering HSC services in order to improve accessibility for people who are homeless or at risk of homelessness,
- Those which improve the timeliness of access to all HSC services,
- Interventions which seek to educate HSC professionals on improving accessibility for individuals experiencing, or at risk of experiencing, homelessness,
- Those interventions which adapt methods of communication and how information is presented to service users.

Comparison conditions include services as usual or alternative services/ intervention.

Types of outcome measures

This review primarily addresses how interventions can improve accessibility of HSC services for those individuals experiencing, or at risk of experiencing, homelessness.

Secondary outcomes include any other outcomes reported by studies that fall within the domains of the effectiveness EGM, which are:

- Community support for individual needs.
- Crime/criminalisation
- Employment and income
- Capabilities and wellbeing
- Cost effectiveness

An important caveat to looking at these secondary outcomes is that given the range of programme characteristics included in this review and the meta-analyses, there may be other mechanisms at work (beyond improved access) that are influencing changes in secondary outcomes. For instance, some of the interventions may offer holistic support, comprising several components, with only one component that tries to ensure access to services. Thus, while some of the differences in outcomes may be due to the direct effects of improving access to services, it may be other components of the interventions that are also driving changes in outcomes.

Duration of follow-up

Throughout included interventions, authors report effects at multiple follow-up periods after implementation of the intervention. In instances where this is the case, data relating to multiple points of follow up is extracted in its entirety. This allows us to conduct analysis on effect sizes related to similar time points, and when outcomes are similar across various time points then an average effect size is calculated to estimate effectiveness.

Types of settings

Settings where these interventions take place may be varied and can include community-based settings, vocational settings, treatment centres, clinical settings and the individual's temporary accommodation.

Search methods for identification of studies

This systematic review is based on evidence already identified in two existing evidence and gap maps (EGMs) commissioned by the Centre for Homelessness Impact (CHI) and built by White, Saran, Teixeira, Fitzpatrick and Portas (2018). The EGMs present studies on the effectiveness and implementation of interventions aimed at people experiencing, or at risk of experiencing, homelessness in high income countries. The maps used a comprehensive three stage search and mapping process. Stage one was to map the included studies in an existing Campbell review on homelessness (Munthe-Kass, Berg, & Blaasvær, 2018), stage two was a comprehensive search of 17 academic databases, three evidence and gap map databases, and eight systematic review databases for primary studies and systematic reviews. Finally stage three included web searches for grey literature, scanning reference lists of included studies and consultation with experts to identify additional literature. Sample search terms can be found in the protocol (White, Saran, et al., 2018).

We did not undertake any additional searching. However, if during the course of contacting authors for additional information or data necessary for conducting analysis and risk or bias assessments, authors provide us with additional eligible studies, these would be included.

Data collection and analysis

Description of methods used in primary research

Trials measuring the effectiveness of interventions to improve accessibility of HSC services against a control group or well-matched comparison group are included.

Criteria for determination of independent findings

It is important to ensure that the effects of an individual intervention are only counted once, and the following conventions therefore do apply.

Where there are multiple measures reported for the same outcome, we use robust variance estimation to adjust for effect size dependency (Hedges, Tipton, & Johnson, 2010). The correction for small samples (Tipton & Pustejovsky, 2015) is implemented when necessary. The exception is any treatment inherent measures of the outcome of interest, these measurements are discarded as they risk overestimating the treatment effect.

Where the same outcome construct is measured but across multiple time domains, such as through the collection of both post-test and further follow-up data, the analysis is conducted and reported separately for different time points (see above).

Studies comparing multiple treatment and control arms were discussed with the full author team to decide if eligible intervention arms are similar enough to combine and compare as if they are one intervention group. If not, each intervention arm contributes separate effect sizes to the meta-analysis and the control group sample size is be split by the number of intervention arms included to avoid double counting of control participants.

In the case of multiple cohorts appearing in one study we calculated a simple average, as described above, for the omnibus meta-analysis. If different cohorts in a study fall into different subgroups, then they are considered separately in subgroup analysis, but no overall summary of effect is calculated combining subgroups in those cases. If there are sufficient eligible studies reporting multiple and dependent effect sizes (i.e. occurring in more than 20 eligible studies) then robust variance estimation was employed. This technique calculates the variance between effect sizes to give the variable of interest a quantifiable standard error. It has been shown to calculate correct results with a minimum of 20-30 individual studies (Hedges, Tipton, & Johnson, 2010) although it performs better with an increased quantity of studies.

Selection of studies

The studies contained within the existing EGMs were screened against the inclusion criteria for eligibility by two independent screeners.

Data extraction and management

Once eligible studies were found, we undertook dual data extraction, where two authors complete data extraction and risk of bias assessments independently for each study. Coding was carried out by trained researchers. Any discrepancies in screening or coding were discussed with senior authors until a consensus was reached.

Details of study coding categories

A coding framework was developed and piloted prior to undertaking data extraction for all included studies using EPPI Reviewer software (appendix 1 & 2). At a minimum we extracted the following data: Publication details, Intervention details including setting, dosage and implementation, Delivery personnel, Descriptions of the outcomes of interest including instruments used to measure, Design and type of trial, Sample size of treatment and control groups, Data required to calculate Hedge's g effect sizes, Quality assessment. We also extracted more detailed information on the interventions such as: Duration and intensity of the programme, Timing of delivery, Key programme components (as described by study authors), theory of change. Alongside extracting data on programme components, descriptive information for each of the studies was extracted and coded to allow for sensitivity and subgroup analysis. This included information regarding:

- Setting, which type of services are study participants accessing?
- Study characteristics in relation to design, sample sizes, measures and attrition rates, who funded the study and potential conflicts of interest.
- Demographic variables relating to the participants including age, complexity of needs, dependent children, and other relevant population characteristics.

Quantitative data were extracted to allow for calculation of effect sizes (such as mean change scores and standard error or pre and post means and standard deviations or binary 2x2 tables). Data were extracted for the intervention and control groups on the relevant outcomes measured in order to assess intervention effects.

Assessment of risk of bias in included studies

Assessment of methodological quality and potential for bias was conducted using the second version of the Cochrane Risk of Bias tool for randomised controlled trials (Higgins et al., 2016). Non-randomised studies were coded using the ROBINS- I tool (Sterne et al., 2016).

Measures of treatment effect

It was anticipated that most outcomes reported would be based upon continuous variables and so the main effect size metric used for the purposes of the meta-analyses was the standardized mean difference, with its 95% confidence interval. Within this, Hedges' g was used to correct any small sample bias. Where other effect sizes have been reported, such as Cohen's d or risk ratios (for dichotomous outcomes) these are converted to Hedges' g for the purposes of the meta-analysis using formulae provided in the Cochrane Handbook (Higgins & Green, 2011).

Unit of analysis issues

If studies involved group-level allocation, where possible, data were included which have been adjusted to account for the effects of clustering, typically through the use of multilevel modelling or adjusting estimates using the intra-cluster correlation coefficient (ICC). Where the effects of clustering have not been taken into account, estimates of effect size were adjusted following guidance in the Cochrane Handbook. If ICC is not reported external estimates were obtained from studies that provide the best match on outcome measures and types of clusters from existing databases of ICCs (Ukoumunne, Gulliford, Chinn, Sterne, & Burney, 1999) or other similar studies within the review.

Dealing with missing data

If study reports did not contain sufficient data to allow calculation of effect size estimates authors were contacted to obtain necessary summary data, such as means and standard deviations or standard errors. If no information is forthcoming the study is not included in the meta-analysis.

Assessment of heterogeneity

Heterogeneity was assessed first, through visual inspection of the forest plot and checking for overlap of confidence intervals and second through the Q, I2 and Tau2 statistics. It was intended that we would use the framework of accessibility, availability and affordability to better understand whether interventions that fall into these three categories, might achieve different effects.

Assessment of reporting biases

A funnel plot and Egger's linear regression test was used to check for publication bias across included studies (Sterne & Egger, 2005). Where the funnel plot is asymmetrical this indicates either publication bias or bias which relates to smaller studies showing larger treatment effects. The trim and fill method was used where the funnel plot is asymmetrical (Higgins & Green, 2011), this is a nonparametric technique which removes the smaller studies causing irregularity until there is a new symmetrical pooled estimate, the studies which were eliminated were then filled back in to reflect the new estimate.

To ensure robustness of the review and to account for individual studies that appear to exert an undue influence on findings, process sensitivity analysis was also carried out on domains relating to the quality of the included studies.

Statistical procedures and conventions

All analyses were conducted using the R programme. A random-effects analysis (REM) was chosen as the hierarchical linear model. This decision to employ a REM was made for two reasons. Firstly, the true effect would vary from study to study due to the distribution of effects. These variances may

include: the setting of the intervention, the training of the person delivering the programme or the dosage of the intervention. Secondly, under the random-effects model the weights assigned to each individual study are more reasonable as it considers that the effect observed within each study are based on a sample from a population with an unknown mean.

Meta-analysis was conducted to test effectiveness of interventions to improve HSC access across various domains relating to homelessness. The outcomes related to homelessness were continuous and so the effect size metric chosen was Hedges' g. Many studies needed to be recalculated into a Standardised Mean Difference (SMD) with a 95% confidence interval to allow appropriate summary of effect sizes across the included studies. SMD was calculated from means and standard deviations in the first instance, however, if a study did not provide this raw data, authors were contacted, and this information was requested. Failing this, many papers have been published to assist authors in calculating the SMD from primary research (Rosnow & Rosenthal, 1996; Rosnow, Rosenthal & Rubin, 2000), and have enabled authors to transform many statistical tests of significance such as t-tests, F tests, and chi square values to a metric which allows comprehension of the magnitude of the intervention effect. A very useful online calculator has also been developed, this allows authors to choose the type of raw data available, and the calculator automatically transforms this to various effect size types, including the SMD (Lipsey & Wilson, 2000).

Treatment of qualitative research

The qualitative research included in this review was drawn from evidence collated in the implementation and process EGM constructed by White et al. (2018) and White, Wood & Fitzpatrick. Studies were selected through purposive sampling to represent a diverse range of institutional settings, populations and geographical locations. The papers included in the EGM had been coded in advance by researchers in Herriot-Watt, in order to categorise each paper according to the domains in the map, and highlighted data that spoke to that domain. This initial coding informed the selection of studies, with those studies that provided most data

being selected first, and additional studies added until we reached saturation. Where possible we included qualitative studies associated with the interventions evaluated in the quantitative studies, however only one such study was identified.

We included process evaluations and other relevant qualitative studies that provided data to enable a deeper understanding of why access programmes, in general, do (or do not) work as intended, for whom and under what circumstances. We conducted a framework synthesis using the framework that was developed for the Implementation EGM. The EGM categorises included studies into broad categories of barriers and facilitators to the implementation of interventions. These categories were developed by the original authors of the EGM using an iterative process and were initially based on the implementation science framework. The categories were independently piloted against a small number of process evaluations and agreement was reached by researchers in the Campbell Collaboration, Campbell UK and Ireland, and Herriot-Watt University. The five broad categories, or levels of influence, are contextual factors, policy makers/ funders, programme managers/implementing agency, staff/case workers, and recipients. We used this framework to synthesise data from the relevant qualitative studies.

The quality of these mixed methods studies was assessed using a tool developed by White and Keenan (2018). The tool is similar to the fidelity assessment used by Stergiopoulos, Hwang, O'Campo, Jeyaratnam, & Kruk (2013) and aims to provide an accurate account of the eligible qualitative studies. The tool considers methodology, recruitment and sampling, bias, ethics, analysis and findings.

Emphasis on Mixed Methods Approach

Utilising and synthesising both quantitative and qualitative data is especially useful in understanding the entire picture that the current research shows. It provides us with wide-ranging and nuanced data to inform policy and practice around the effectiveness and delivery of access interventions in homelessness. The qualitative analysis will complement the quantitative analysis by providing context and insight related to some of the potential barriers and facilitators that might influence how effective an intervention might be.

Results

Description of Studies

We identified 223 unique studies across 551 articles from the effectiveness map on 12th April 2019. Of these 551 articles we deemed 84 to meet the inclusion criteria following Title and Abstract screening. Full text screening led to the exclusion of a further 11 articles. An additional six articles linked to the included studies were subsequently identified (through contact with the original study authors) and also included. More details can be found in the PRISMA Flow Diagram (Figure 2). Altogether, 47 eligible studies containing 73 access intervention papers were identified and included in this review.
As previously highlighted, many of these interventions are holistic and multi-component. When at least one of those elements is about ensuring access to services, these were included in this review.

List of Included Studies

Study ID: Appel 2012

- Housing First for Severely Mentally Ill Homeless Methadone Patients (Appel, Tsemberis, Joseph, Stefancic and Lambert-Wacey, 2012).

Study ID: Baer 2007

- Brief Motivational Intervention with Homeless Adolescents: evaluating Effects on Substance Use and Service Utilization (Baer, Garrett, Beadnell, Wells and Peterson, 2007).

Study ID: Ballard 2002

- Counseling outcome research: The use of the Addiction Severity Index in a homeless population (Ballard, 2002).

Study ID: Bell 2015

- A randomized controlled trial of intensive care management for disabled Medicaid beneficiaries with high health care costs (Bell, Krupski, Joesch,

West, Atkins, Court, Mancuso and Roy-Byrne, 2015).

Study ID: Bond 1990

- Assertive Community Treatment
- for Frequent Users of Psychiatric Hospitals in a Large City: A Controlled Study (Bond, Witheridge, Dincin, Wasmer, Webb and Graaf-Kaser, 1990).

Study ID: Borland 2013

- Does Coordination of Welfare Services Delivery Make a Difference for Extremely Disadvantaged Jobseekers? (Borland, Tseng and Wilkins, 2013).
- Improving Outcomes for Unemployed and Homeless Young People: Findings of the YP Clinical Controlled Trial of Joined Up Case Management (Grace and Gill, 2014).

Study ID: Bradford 2005

- Can shelter-based interventions improve treatment engagement in homeless individuals with psychiatric and/or substance misuse disorders?: a randomized controlled trial (Bradford, Gaynes, Kim, Kaufman, Weinberger, 2005).

Study ID: Brown 2016

- Housing first as an effective model for community stabilization among vulnerable individuals with chronic and nonchronic homelessness histories (Brown, Jason, Malone, Srebnik and Sylla, 2016).

Study ID: Calsyn 2005

- Impact of assertive community treatment and client characteristics on criminal justice outcomes in dual disorder homeless individuals (Calsyn, Yonker, Lemming, Morse and Klinkenberg, 2005).
- Treating homeless clients with severe mental illness and substance use disorders: costs and outcomes (Morse, Calsyn, Klinkenberg, Helminiak, Wolff, Drake, Yonker, Lama, Lemming and McCudden, 2006).

- Integrated treatment for homeless clients with dual disorders: a quasi-experimental evaluation (Morse, Calsyn, Klinkenberg, Cunningham and Lemming, 2006).
- Evaluation of Treatment Programs for Dual Disorder Individuals: (Fletcher, Cunningham, Calsyn, Morse, and Klinkenberg, 2008).

Study ID: Cheng 2007

- Impact of Supported Housing on Clinical Outcomes Analysis of a Randomized Trial Using Multiple Imputation Technique (Cheng, Lin, Kasprow and Rosenhec, 2007)

Study ID: Chez Soi

- Effect of Scattered-Site housing using rent supplements and intensive case management on housing stability among homeless adults with mental illness (Stergiopoulos, Hwang, Gozdzik, Nisenbaum, Latimer, Rabouin, Adair, Bourque, Connelly, Frankish and Katz, 2015).
- One-year outcomes of a randomized controlled trial of housing first with ACT in five Canadian cities (Aubry, Tsemberis, Adair, Veldhuizen, Streiner, Latimer, Sareen, Patterson, McGarvey, Kopp, Hume and Goering, 2015).
- "Housing First" for Homeless Youth With Mental Illness (Kozloff, Adair, Lazgare, Poremski D ; Cheung AH ; Sandu R ; Stergiopoulos, 2016).
- Effect of Housing First on Suicidal Behaviour: A Randomised Controlled Trial of Homeless Adults with Mental Disorders (Aquin, Roos, Distasio, Katz, Bourque, Bolton, Bolton SLee, Wong, Chateau, Somers, Enns, Hwang, Frankish and Sareen, 2017).
- At Home/Chez Soi Interim Report (Goering, 2012).
- Effects of Housing First on Employment and Income of Homeless Individuals: results of a Randomized Trial (Poremski, Stergiopoulos, Braithwaite, Distasio, Nisenbaum and Latimer, 2016).
- At Home/Chez Soi randomised trial: How did a Housing First intervention improve health and social outcomes among homeless adults with mental illness in Toronto? Two-year outcomes from a randomised trial (O'Campo,

Stergiopoulos, Nir, Levy, Misir, Chum, Arbach, Nisenbau, To and Hwang, 2016).

- The impact of a Housing First randomized controlled trial on substance use problems among homeless individuals with mental illness (Kirst, Zerger, Misir, Hwang and Stergiopoulos, 2015).
- Emergency department utilisation among formerly homeless adults with mental disorders after one year of Housing First interventions: a randomised controlled trial (Russolillo, Patterson, McCandless, Moniruzzaman and Somers, 2014).

Study ID: Chinman 2000

- Comparing Consumer and Nonconsumer Provided Case Management Services for Homeless Persons with Serious Mental Illness (Chinman, Rosenheck, Lam and Davidson, 2000).

Study ID: Clarke 2000

- Psychiatric hospitalizations, arrests, emergency room visits, and homelessness of clients with serious and persistent mental illness: findings from a randomized trial of two ACT programs vs. usual care (Clarke, Herinckx, Kinney, Paulson, Cutler, Lewis and Oxman. 2000).

Study ID: Conrad 1998

- Case Managed Residential Care for Homeless Addicted Veterans (Conrad, Hultman, Pope, Lyons, Baxter, Daghestani, Lisiecki, Elbaum, McCarthy and Manheim, 1998).

Study ID: Drake 1998

- Assertive community treatment for patients with co-occurring severe mental illness and substance use disorder: a clinical trial. (Drake, McHugo, Clark, Teague, Xie, Miles and Ackerson, 1998).

Study ID: Essock 2006

- Comparison of ACT and Standard Case Management for Delivering Integrated Treatment for Co-occurring Disorders (Essock, 2006).
- Use of integrated dual disorder treatment via assertive community treatment versus clinical case management for persons with co-occurring disorders and antisocial personality disorder (Frisman, Mueser, Covell, Lin, Crocker, Drake and Essock, 2009).

Study ID: Ferguson 2012

- Adapting the Individual Placement and Support Model with Homeless Young Adults (Ferguson, Xie and Glynn, 2012).

Study ID: Gilmer 2010

- Effect of Full-Service Partnerships on Homelessness, Use and Costs of Mental Health Services, and Quality of Life Among Adults with Serious Mental Illness (Gilmer, Stefancic, Ettner, Manning and Tsemberis, 2010).

Study ID: Homeless 1

- Sufficient conditions for effective treatment of substance abusing homeless persons (Milby, Schumacher, Raczynski, Caldwell, Engle, Michael and Carr, 1996)
- Costs and Effectiveness of Treating Homeless Persons with Cocaine Addiction with Alternative Contingency Management Strategies (Mennemeyer, Schumacher, Milby and Wallace, 2017).

Study ID: Homeless 2

- Initiating abstinence in cocaine abusing dually diagnosed homeless persons (Milby, Schumacher, McNamara, Wallace, Usdan, McGill and Michael, 2000).
- Costs and Effectiveness of Treating Homeless Persons with Cocaine Addiction with Alternative Contingency Management Strategies (Mennemeyer, Schumacher, Milby and Wallace, 2017).
- Day treatment with contingency management for cocaine abuse in homeless persons: 12-month follow-up (Milby, Schumacher, Wallace,

Frison, McNamara, Usdan and Michael, 2003)

- Diagnostic compared with abstinence outcomes of day treatment and contingency management among cocaine-dependent homeless persons (Schumacher, Milby, Wallace, Simpson, Frison, McNamara, and Usdan, 2003).
- Housing First improves subjective quality of life among homeless adults with mental illness: 12-month findings from a randomized controlled trial in Vancouver, British Columbia (Patterson, Moniruzzaman, Palepu, Zabkiewicz, Frankish, Krausz and Somers, 2013)

Study ID: Homeless 3

- Long-term housing and work outcomes among treated cocaine-dependent homeless persons (Kertesz, Mullinsm, Schumacher, Wallace, Kirk and Milby, 2007).
- To house or not to house: the effects of providing housing to homeless substance abusers in treatment (Milby, Schumacher, Wallace, Freedman and Vuchinich, 2005)
- Costs and Effectiveness of Treating Homeless Persons with Cocaine Addiction with Alternative Contingency Management Strategies (Mennemeyer, Schumacher, Milby and Wallace, 2017).

Study ID: Hwang 2011

- Health status, quality of life, residential stability, substance use, and health care utilization among adults applying to a supportive housing programme. (Hwang, Gogosis, Chambers, Dunn, Hoch and Aubry, 2011).

Study ID: Karper 2008

- Coordination of care for homeless individuals with comorbid severe mental disorders and substance-related disorders. (Karper, Kaufmann, Millspaugh, Vega, Stern, Ezrow, Giansante and Lynch, 2008).

Study ID: Killaspy 2006

- The REACT study: randomised evaluation of assertive community treatment in north London. (Killaspy, Bebbington, Blizard, Johnson, Nolan, Pilling and King, 2006).

Study ID: Lehman 1997

- A randomized trial of assertive community treatment for homeless persons with severe mental illness. (Lehman, Dixon, Kernan, DeForge and Postrado, 1997).

Study ID: Lim 2017

- Impact of a Supportive Housing Programme on Housing Stability and Sexually Transmitted Infections Among Young Adults in New York City Who Were Aging Out of Foster Care (Lim, Singh and Gwynn, 2017).

Study ID: Lim 2018

- Impact of a New York City supportive housing programme on Medicaid expenditure patterns among people with serious mental illness and chronic homelessness (Lim, Gao, Stazesky, Singh, Harris and Levanon Seligson, 2018).

Study ID: Malte 2017

- Providing intensive addiction/housing case management to homeless veterans enrolled in addictions treatment: A randomized controlled trial (Malte, Cox and Saxon, 2017).

Study ID: McCormack, 2013

- Resource-limited, collaborative pilot intervention for chronically homeless, alcohol-dependent frequent emergency department users (McCormack, Hoffman, Wall and Goldfrank, 2013).

Study ID: McHugo 2004

- A Randomized Controlled Trial of Integrated Versus Parallel Housing Services for Homeless Adults With Severe Mental Illness (McHugo, Bebout, Harris, Cleghorn, Herring, Xie, Becker and Drake, 2004).

Study ID: Morse 1992

- The REACT study: randomised evaluation of assertive community treatment in north London. (Morse, Calsyn, Allen, Tempelhoff and Smith, 1992).
- Duration of homeless spells among severely mentally ill individuals: A survival analysis (McBride, Calsyn, Morse, Klinkenberg and Allen, 1998).
- The Impact of Assertive Community Treatment on the Social Relationships of People Who Are Homeless and Mentally Ill (Calsyn, Morse, Klinkenberg, Trusty and Allen, 1998).

Study ID: Morse 1997

- An experimental comparison of three types of case management for homeless mentally ill persons. (Morse, Calsyn, Klinkenberg, Trusty, Gerber, Smith, Tempelhoff and Ahmad, 1997).
- Prototypical Profiles of the Brief Psychiatric Rating Scale (Burger, Calsyn, Morse and Klinkenberg, 2000).
- Evaluation of treatment programs for persons with severe mental illness: moderator and mediator effects (Kenny, Calsyn, Morse, Klinkenberg, Winter and Trusty, 2004).

Study ID: Nyamathi 2015

- Nursing Case Management, Peer Coaching, and Hepatitis A and B Vaccine Completion Among Homeless Men Recently Released on Parole: Randomized Clinical (Nyamathi, Salem, Zhang, Farabee, Hall, Khalilifard and Leake, 2015).
- Impact of an intervention for recently released homeless offenders on self-reported re-arrest at 6 and 12 months (Nyamathi, Salem, Farabee, Hall, Zhang, Faucette, Bond and Yadav, 2017).

Study ID: O'Connell 2012

- Differential impact of supported housing on selected subgroups of homeless veterans with substance abuse histories (O'Connell, Kasprow and Rosenheck, 2012).

Study ID: O'Toole 2010

- Applying the chronic care model to homeless veterans: effect of a population approach to primary care on utilization and clinical outcomes. (O'Toole, Buckel, Bourgault, Blumen, Redihan, Jiang and Friedmann, 2010).

Study ID: O'Toole 2018

- Applying the chronic care model to homeless veterans: effect of a population approach to primary care on utilization and clinical outcomes. (O'Toole, Johnson, Borgia, Noack, Yoon, Gehlert and Lo, 2018).

Study ID: Reback 2009

- Contingency managment reduces substance use and increases healhy behaviours among homeless, out-of-treatment MSM (Reback, Peck, Dierst-Davies, Nuño, Kamien and Amass, 2009).

Study ID: Sacks 2004

- Outcomes from a Therapeutic Community for Homeless Addicted Mothers and Their Children (Sacks, Sacks, McKendrick, Pearson, Banks and Harle, 2004).

Study ID: Samuels 2015

- Time-Limited Case Management for Homeless Mothers With Mental Health Problems: Effects on Maternal Mental Health (Samuels, Fowler, Ault, Tang and Marcal, 2015).

Study ID: Shern 1997 (Choices)

- Housing Outcomes for Homeless Adults With Mental Illness: Results From the Second-Round McKinney Programme (Shern, Felton, Hough, Lehman, Goldfinger, Valencia, Dennis, Straw and Wood, 1997).
- Serving street-dwelling individuals with psychiatric disabilities: Outcomes of a psychiatric rehabilitation clinical trial (Shern, Tsemberis, Anthony, Lovell, Richmond, Felton, Jim and Mikal, 2000).
- Consumer preference programs for individuals who are homeless and have psychiatric disabilities: a drop-in center and a supported housing programme (Tsemberis, Moran, Shinn, Asmussen and Shern, 2003).

Study ID: Slesnick 2015

- A comparison of three interventions for homeless youth evidencing substance use disorders: results of a randomized clinical trial (Slesnick, Guo, Brakenhoff, and Bantchevska, 2015).

Study ID: Sorenson 2003

- Case Management For Substance Abusers With Hiv/aids: A Randomized Clinical Trial (Sorensen, Dilley, London, Okin, Delucchi and Phibbs, 2003).
- Case management and vouchers improve uptake of methadone treatment programmes (Sorensen, Masson and Delucchi, 2006).

Study ID: Srebnik 2013

- A pilot study of the impact of housing first-supported housing for intensive users of medical hospitalization and sobering services (Srebnik, Connor and Sylla, 2013).

Study ID: Starks 2012

- Time-Limited Case Management for Homeless Mothers With Mental Health Problems: Effects on Maternal Mental Health (Starks 2012).

Study ID: Stefancic 2007

- Housing First for long-term shelter dwellers with psychiatric disabilities in a suburban county: a four-year study of housing access and retention (Stefancic and Tsemberis, 2007).

Study ID: Toro 1997

- Evaluating an Intervention for Homeless Persons: Results of a Field Experiment (Toro, Rabideau, Bellavia, Daeschler, Wall, Thomas and Smith, 2017).

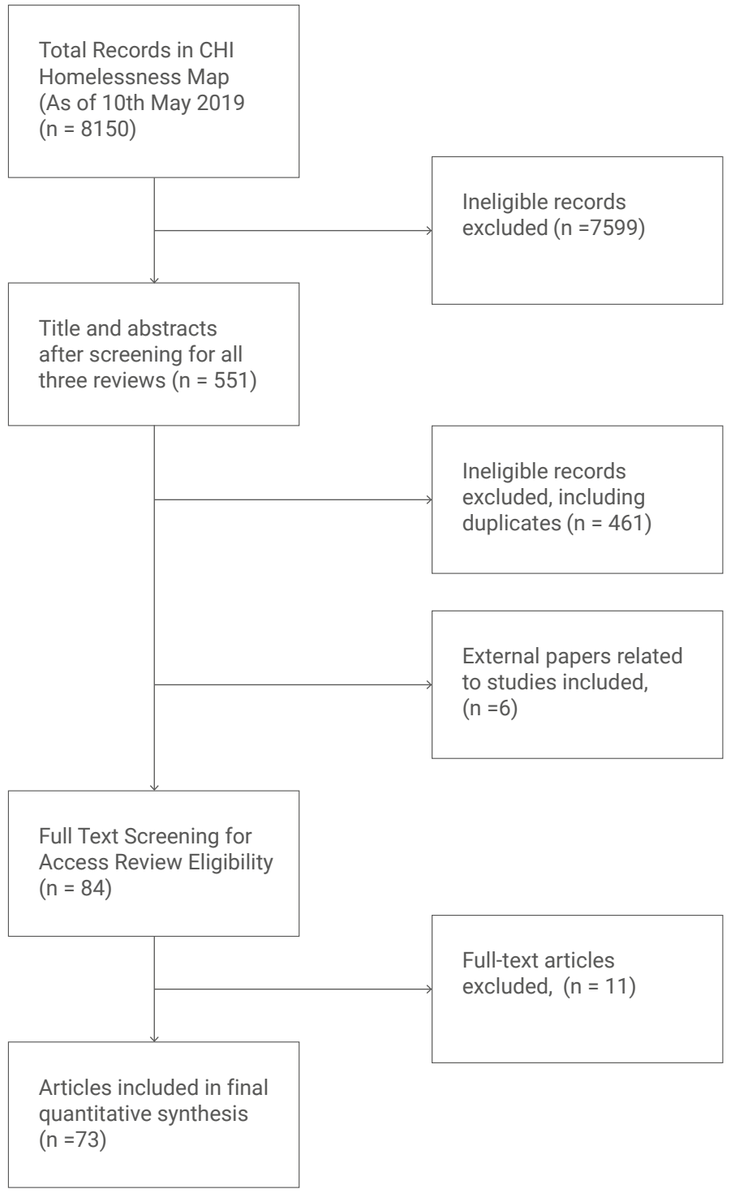
Study ID: Tsemberis 2003 (Pathways to Housing)

- Consumer preference programs for individuals who are homeless and have psychiatric disabilities: a drop-in center and a supported housing programme (Tsemberis, Moran, Shinn, Asmussen and Shern, 2003).

Study ID: Wolff 1997

- Cost effectiveness evaluation of Three approaches to case management for homeless mentally ill clients (Wolff, Helminiak, Morse and Calsyn, 1997).

Figure 2: PRISMA Flow Diagram



Characteristics of Included Studies

There were 18,402 people included in the analysis across 47 studies. Most of the included studies (43/47) were carried out in the United States of America, with other locations including Canada (Goering, Streiner, Adair, Aubry and Barker, 2011; Hwang et al., 2011) and the United Kingdom (Killaspy et al., 2006). The location of the studies was largely urban, with 37/47 of the studies focused upon improving homelessness outcomes in cities.

The mean age of all participants was 38.37 years. In addition to being homeless or at risk of homelessness, participants reported a range of complex needs across all the studies, including poor physical health, poor mental health, incarceration, substance abuse issues, care experience and high risk of harm and/or exploitation. More specific (study level) detail regarding the range and complexity of needs reported by participants can be found in Table 1.

Three studies (Toro et al., 1997; Sacks, Sacks, McKendrick, Pearson, Banks and Harle, 2004 & Samuels, Fowler, Ault, Tang and Marcal, 2015) evaluated interventions that were specifically focused on families and their children. The remaining studies either did not specify this (n=1) or focused on single people (n=43).

Seventeen (17) studies used quasi-experimental designs (34.8%) and 30 used randomised experimental designs (65.2%).

Forty-four (44) of the 47 studies are articles, published in a variety of different academic journals. Two studies were reported in a thesis (Ballard, 2002; Starks, 2012), and one study was unpublished (Stefancic & Tsemberis, 2007).

The two main sources of funding were research council funding (39) and using grant or loans from trusts and charities (3), University Scholarships and Bursaries (2), with five studies not specifying their source of funding. Furthermore, Borland, Tseng and Wilkins', (2013) study was funded by cash in hand, and Srebnik, Connor and Sylla (2013) was funded through several joint housing authorities.

Table 1: Characteristics of included studies

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Appel (2012)	Keeping Home project (Housing First approach)	Poor Mental Health and Substance Abuse Issues	Intervention – 45.9, range 26-63 Control - 39.7 no range or SD	Male: Intervention 26 (80.8%) Control 19 (63.3%), Female: Intervention 5 (19.2%) Control 11 (36.7%)	Non-RCT
Baer (2007)	BMI Brief motivational interventions	Substance Abuse Issues	Mean 17.9, SD-1.2	Male: 56% 66/117, Female: 44% 51/117	RCT
Ballard (2002)	Community Based Counselling Programme (CBCP)	Poor Mental Health and Substance Abuse Issues	Intervention - 40.933 (SD 12.267) Control - 45.5 (SD 11.09) Range 21-74	Male: 36 of 67 Treatment 6/36 Control 6/31 Female: 31 of 67 Treatment 30/36 Control 25/31	Non-RCT
Bell (2015)	KCCP Intervention (King County Care Partners)	Poor Physical Health, Poor Mental Health (49%) and Substance Abuse Issues (43%)	Intervention Mean 51 SD (11) Control Mean 51 SD (10)	Male: Intervention 48% 267/557 Control 46% 259/563 Female: 'Not Male' - Intervention 52% 290/557 Control 54% 304/563	RCT
Bond (1990)	ACT	Poor Mental Health and Substance Abuse Issues	Mean - ACT: 33 Drop in centre: 35.6	Male: ACT: 24/45 53% Drop in centre: 26/43 60% Female: ACT: 21/45 47% Drop in centre: 17/43 40%	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Borland (2013)	Case management. Official name is the YP trial.	Poor Physical Health (45%) and Incarceration (44% of intervention, 24% of control)	Mean 23.17	Male: 273 66% of 413, Female: 140 34% of 413	RCT
Bradford (2005)	Shelter-based outreach programme	Poor Mental Health (36%), Incarceration and Substance Abuse Issues	Overall Mean - 39.09 - Intervention 39.68 - Control No SD	Male: 64.7% 33/51 Control 72.6% 37/51, Female: Intervention 35.3% 18/51 Control 27.4% 14/51	RCT
Brown (2016)	Housing First	Poor Mental Health and Substance Abuse Issues	The average age was 42.79 years (standard deviation [SD] = 11.14),	73.6% male, 26.4% female.	Non-RCT
Calsyn (2005)	ACT, Integrated ACT (IACT), and New Integrated ACT (NIACT)	Poor Mental Health, Incarceration and Substance Abuse Issues	40.4 - mean 9 - SD	Male: 206/270, 76.3% Female: 64/270, 23.7%	RCT
Cheng (2007)	HUD-VASH vs Case Management	Poor Mental Health and Substance Abuse Issues	Not specified	Not specified	RCT
Chez Soi	Chez Soi - Housing First	Poor Mental Health	mean 40.89 (SD - 11.23)	Male 1508 (67.9%). Female 603 (31.2%) Other 20 (.9%)	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Chinman (2000)	Consumer provided case management	Poor Mental Health and Substance Abuse Issues (45% alcohol abuse, 44% individuals who use drugs)	The average age of clients was 38.4 ± 9.4, Non consumer sites: 38.52 (9.52) Consumer sites: 38.27 (9.29)	Male: 66.6% 1937/2935, Female: 33.3% 998/2935	Non-RCT
Clarke (2000)	Consumer ACT and Non consumer ACT	Poor Mental Health and Substance Abuse Issues (31.1% Problematic substance use)	Mean (SD) - Overall 36.5 (10.3), Consumer ACT - 36.3 (10.1) Non-Consumer ACT - 38.0 (11.4) Control - 35.1 (8.9)	Male - ACT - Consumer ACT Team 36 (63.2%) Non-Consumer ACT Team 35 (61.4%) Control - 28 (57.1%), Female - Consumer ACT Team 21 (36.8%) Non-Consumer ACT Team 22 (38.6%) Control - 21 (42.9%)	RCT
Conrad (1998)	Case Managed Residential Care	Poor Mental Health and Substance Abuse Issues	Averaged 40 years, with a range of 25 to 70 ye	Enrolled 358 male homeless veterans. 100% Male	RCT
Drake (1998)	ACT vs Standard case management (SCM)	Poor Mental Health and Substance Abuse Issues	Mean - 34 (SD-8.5)	Male - 166/223 (74.4%), 57/223 (25.6%)	RCT
Essock (2006)	ACT	Poor Mental Health and Substance Abuse Issues	ACT - 36.4±7.9 SCM - 36.6±7.7	Male - 142 70/99 (71%) in ACT 72/99 (73%) in SCM, Female - 56 29/99 28% - ACT 27/99 27% - SCM	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Ferguson (2012)	Individual Placement and Support Model (IPS)	Poor Mental Health, Substance Abuse Issues, Care leaver	Intervention - M-20.6, SD-1.5 Control - M-22.4, SD-1.4	Male - 14/20 in intervention 70% 11/16 in control 68.8%, Female - 6/20 in intervention 30% 5/16 in control 31.2%	Non-RCT
Gilmer (2010)	Full-Service Partnerships (FSP)	Poor Mental Health and Incarceration	Age, mean (SD), FSP - 44 (9) Control - 43 (11)	Not female sex FSP - 131/209 (63%) Control - 97/154 (63%), Female sex FSP - 78/209 (37%) Control - 57/154 (37%)	Non-RCT
Homeless 1	Enhanced Care	Substance Abuse Issues	Age Mean (SD) Usual Care 35.7 (6.2) Enhanced Care 36.0 (6.6)	Male Number (%) Intervention 54 (87.1) Usual Care 50 (72.5), Female Number (%l) Usual Care 8 (12.9) Enhanced Care 19 (27.5)	RCT
Homeless 2	Day treatment +	Poor Mental Health and Substance Abuse Issues	DT: 39.1 (7.5) DT+: 37.3 (7.2) All: 38.1 (7.4	male - DT: 45 (83%) DT+: 39 (70%) All: 84 (76%), Female - DT: 9 (17) DT+: 17 (30) All: 26 (24%)	RCT
Homeless 3	ACH Vs NACH Vs Control	Poor Physical Health, Poor Mental Health, Incarceration and Substance abuse issues	Hozo's method: ACH- 38.25 (SD 2.61) N-ACH - 41.25 (SD 3.19) Control/ No housing - 38.5 (2.61)	Male - ACH - 74.6% (47) N-ACH - 76.8% (50) Control/ No Housing - 76.8% (50), Female - ACH - 25.4% (16) N-ACH - 24.2% (16) Control/ No Housing - 24.2% (16)	Non-RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Hwang (2011)	Supportive housing	None	22 people aged 17-30, 90 people aged 31 and over.	81 male 72%, 30 (27%) women, one (1%) transgendered individual	Non-RCT
Karper (2008)	Coordination of care	Poor Mental Health, Incarceration (13%) and Substance Abuse Issues	Control - 38.3 ± 10.2 Intervention - 39.2 ± 10.0	100% Male	Non-RCT
Killaspy (2006)	ACT	Poor Mental Health	Mean (SD) age (years) ACT - 38 (11) Control - 40 (11)	Male - ACT - 79/127 (62%) Control - 68/124 (55%), Not Male - ACT - 48/127 (38%) Control - 56/124 (45%)	RCT
Lehman (1997)	ACT	Poor Mental Health and Substance Abuse Issues	Intervention: 39 (9.5) Control 36 (8.3)	Male - Intervention: 65/77 Control: 70/75 Total: 135/152, Female - Intervention: 12/77 Control: 5/75	RCT
Lim (2017)	NYNY III	Substance Abuse Issues, Care leaver and High Risk of Harm and/ or Exploitation	Mean 18.6	Male, 510. female, 385	Non-RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Lim (2018)	New York Supportive Housing Programme	Poor Mental Health and Substance Abuse Issues (74%)	Number of people in each group: 18–34 years - 16%, Number of people in both groups: 35–44 years - 26% 45–54 years - 38% ≥ 55 years - 20%	Male - 70% of 2827, Female - 30% of 2827	Non-RCT
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	Poor Physical Health, Poor Mental Health and Substance Abuse Issues	ACHM Mean - 50.5 SD - .5% HSG Mean - 50.7 SD - 9.7%	male - ACHM 89/91 97.8% HSG 88/90 97.8%, Female - ACHM 2/91 2.2% HSG 2/90 2.2%	RCT
McCormack (2013)	Coordinated case management and facilitated access to homeless outreach services	Poor Physical Health and Substance Abuse Issues	Mean - 50 SD - 10	Male - 56/60, Female - 4/60	Non-RCT
McHugo (2004)	Integrated housing services programme	Poor Mental Health	Range from 21-60	Male - 29 (47.5%) Control: 29 (48.3%), Female - Intervention: 32 Control: 31	RCT
Morse (1992)	Continuous treatment, drop in center, outpatient treatment	Poor Mental Health and Substance Abuse Issues	Mean - 33.7	male - 58%, (59/102). Female - 42% (43/102)	RCT
Morse (1997)	ACT with community workers vs. ACT only	Poor Mental Health and Substance Abuse Issues (24%)	The mean± SD age was 34.76±10.41.	male - Fifty-eight percent ofthe 165 mdividuals were male. 58% 96, Female - 69/165 42%	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Nyamathi (2015)	Peer coaching with or without Nursing Case Management	Incarceration Substance Abuse Issues, Care leaver (57%)	Full sample mean age of 40 (SD = 10.4) Vaccine Eligible mean age of 42.0 (SD = 9.5)	All male	RCT
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	Poor Physical Health, Poor Mental Health and Substance Abuse Issues	Age (Median+-SD) TAU: 42.3+-7.5 ICM: 44.0+-6.3 HUD-VASH: 41.8+-7.1	259 male homeless veterans	RCT
O'Toole (2010)	HOPC - Homeless-Oriented Primary Care	Poor Physical Health, Poor Mental Health and Substance Abuse Issues	Intervention - 51.8 (SD - 0.94) Control - 52.9 (SD - 7.7)	male - Intervention - 96.0% 76/79 Control - 96.7% of 95/98. Female - Intervention - 4% 3/79 Control - 3.3% 3/98	Non-RCT
O'Toole (2018)	H-PACT - Homeless patient aligned care team	Poor Physical Health, Poor Mental Health (78.1%) and Substance Abuse Issues	mean (SD) 52.1 (9.2)	Male sex Overall 251/265 (94.7%) H-PACT 176/183 (96.7%) PACT 75/83 (90.4%), Female sex Overall 14/265 (5.3%) H-PACT 7/183 (3.3%) PACT 8/83 9.6%)	Non-RCT
Reback (2009)	Contingency management (CM)	Poor Physical Health and Substance Abuse Issues	total mean age 36.4 M (SD) Intervention - 36.3 (8.7) Control - 36.5 (8.7)	100% 131	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Sacks (2004)	Homeless Prevention Therapeutic Community (HP-TC)	Poor Mental Health, Incarceration (23%) and Substance Abuse Issues	Average age of 33	100% Female	Non-RCT
Samuels (2015)	Family Critical Time Intervention (FCTI)	Poor Physical Health, Poor Mental Health, Substance Abuse Issues, Care leaver and High Risk of Harm and/ or Exploitation	Under 25 - FCTI: 9 (5) Control: 9 (5) Total: 9 (5), 25 and Over: FCTI: 32.1 (7.1) Control: 32.8 (8.3) Total: 32.5 (7.8)	100% female	RCT
Shern (1997)	New York Street Study - specialised housing, New York Street Study 'experimental',San Diego Intensive Case Manangment, Traditional CM with or without section 8 Boston Evolving Consumer Housholds vs independent living New York CTI vs control	Poor Mental Health	37.5 (9.01) years	72% Male (644), 28% Female (250)	RCT
Slesnick (2015)	Community Reinforcement Approach vs Motivational Enhancement Therapy	Substance Abuse Issues and High Risk of Harm and/ or Exploitation	MET: 18.69 (1.32) CRA: 18.7 (1.34) CM: 18.84 (1.11) Total 18.74 (1.26)	MET: 48/86 55.81% CRA: 50/93 53.76% CM: 44/91 48.35% Total 142 (52.59%), MET: 38/86 44.19% CRA: 43/93 46.24% CM: 47/91 51.65% Total 128 (47.41%)	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Sorensen (2003)	Brief Contact vs. Case Management	Poor Physical Health and Substance Abuse Issues	Average age not specified	male 73% 139, female 27% 51	RCT
Srebnik (2013)	Begin at Home (BAH),	Poor Physical Health, Poor Mental Health and Substance Abuse Issues	Intervention Mean - 51.3 SD - 9.2 Control Mean - 50.0 SD - 6.9	male - 52 (87%) Intervention 21, 72% Comparison 31, 100%, Female - 8 (13%) Intervention 8, 28% Comparison 0, 0%	Non-RCT
Starks (2012)	ACT	Poor Mental Health and Substance Abuse Issues	FSP Mean - 41 (10.1) years Usual Care Mean - 40 (9.8) years	male - FSP - 58% 101/175 UC - 47% 142/302, Female FSP - 42% 74/175 UC - 53% 160/302	Non-RCT
Stefancic (2007)	Pathways (HF) vs. Consortium (HF)	Poor Mental Health and Substance Abuse Issues	over 18 to be eligible, otherwise not specified	Male - 74.23% 193 Pathways, 71, 67.6% Consortium, 83, 79.8% Control, 39, 76.5% Female - 25.77%. 67 Pathways, 34, 32.4% Consortium, 21, 20.2% Control, 12, 23.5%	RCT
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	Poor Mental Health and Substance Abuse Issues	16-29 years: 88 41%, 30-39: 74 35% 40-60: 51 24%	Male - 123 58%, Female - 90 42%	RCT

Study ID	Name of Intervention	Complexity of Needs	Age	Sex	Design
Wolff (1997)	Assertive Community Treatment with Community Workers vs. Assertive Community Treatment Only	Poor Mental Health and Substance Abuse Issues (25.9%)	Mean 33.6 SD 10.3	Male 50 (58.8%), Female 35 (41.2)	RCT

Descriptive Account of Reported Access Interventions

Interventions varied between studies and are described in detail in Table 2.

The majority of studies evaluated varieties of Assertive Community Treatment (ACT) interventions - intended to be a comprehensive and seamless system of multidisciplinary services and treatment to support people living with severe and/or persistent mental illness in the community (e.g. Appel et al., 2011; Essock, 2006) - and case-management (Nyamathi et al., 2015; Malte, Cox and Saxon, 2017; Conrad et al., 1998) whereby a case-manager implements, coordinates, monitors and evaluates the options and services required to meet individuals' health and social care (and other) needs. Interventions were either offered alongside housing support (e.g. Goering et al., 2012; Srebnik, Connor and Sylla, 2013) or separately, without additional housing support.

Primarily, the main aim of the interventions included in this review was to improve the number of people accessing beneficial services. These services included health services (Nyamathi et al., 2015; O'Toole, 2010), substance abuse services (Bradford, Gaynes, Kim, Kaufman and Weinberger, 2005; Milby et al., 1996) and employment services (Ferguson, Xie and Glynn, 2012), among others. However, other holistic interventions, particularly those that also offered housing, also tried to achieve changes on other outcomes through mechanisms that are not necessarily related to improving the access to services.

See Table 2 for more information on the characteristics of the interventions

evaluated by the studies included in this review, including theory of change.

The interventions were categorised according to the three access categories outlined by McIntyre, Thiede and Birch's (2009) framework depicted in Figure 1 above, namely: availability, affordability and acceptability. The majority of interventions (40/47) focused on increasing the availability and accessibility of services for those experiencing homelessness. Six interventions aimed to increase both availability and acceptability, with some employing staff workers who themselves had experienced issues similar to the participants' current circumstances. Only one intervention focused specifically on improving the affordability of services (see Table 2).

Table 2: Intervention Characteristics

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Appel (2012)	Keeping Home project (Housing First approach)	Keeping Home uses the Housing First approach, which Pathways to Housing, Inc. originated, to address the needs of individuals experiencing homelessness, serious mental health conditions and problematic substance use. Specifically, Keeping Home secures market-rate, scattered site apartments for individuals experiencing serious mental health conditions who are alsomethadone maintenance treatment patients and then, through in vivo assertive community treatment supports (i.e., psychiatric, nursing, vocational, social, and peer), addresses patients' service needs.	Keeping Home first secures market-rate, scattered site apartments for individuals experiencing serious mental health conditions who are methadone maintenance treatment patients and then, through in vivo assertive community treatment supports (i.e., psychiatric, nursing, vocational, social, and peer), addresses patients' service needs. The authors expected that Keeping Home patients would have better methadone maintenance treatment participation (i.e., retention) and residential outcomes (i.e., independence and stability) than control.	Availability	Usual Treatment / Standard Care - Available housing and support services
Baer (2007)	BMI Brief motivational interventions	The BMI followed the general model of a substance use checkup where information about patterns and risks related to substance use are provided to the individual as personal feedback.	BMIs are conceptualized as a method of psychosocial outreach: a low-threshold, low-demand intervention that may encourage difficult-to-reach individuals to reduce harms associated with substance use and to make better use of available services.	Availability and Acceptability	Not specified
Ballard (2002)	Community Based Counselling Programme (CBCP)	All counsellors provide outreach counselling that includes supportive services in the following areas: mental health, alcohol and/or problematic substance use, case management. HIV/AIDS, health care, education, life skills, employment assistance, housing placement, childcare, transportation, legal, and case management.	The premise of this research study was that homeless individuals who participated in outreach counselling services would report decreased problem severity on the ASI in seven domains: medical, employment, drug, alcohol, legal, social, and psychiatric. One of the main goals of the CBCP is assisting the homeless client in creating a sense of empowerment.	Availability	No Treatment: The comparison group received a pre test and post test ASI and did not receive counselling services during the study.

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Bell (2015)	KCCP Intervention (King County Care Partners)	Received intensive care management from a team comprised of three full-time RNs, two social workers (MSWs) with drug/alcohol treatment training, and a bachelor's–level chemical dependency counsellor.	We expected improved access to these services could result in reduced hospitalizations and associated costs. By addressing social needs through behavioural and social services including housing, we expected reduced criminal activity.	Availability	Treatment as usual
Bond (1990)	ACT	Psychosocial intervention designed to improve the community functioning of clients with serious and persistent mental illness.	The major purpose of the current study was to examine the impact of assertive community treatment on community tenure, client functioning, and costs for frequent users of psychiatric hospitals, comparing this approach to a drop-in centre supplemented by aftercare.	Availability	Treatment as usual
Borland (2013)	Case management. Official name is the YP trial.	Each individual is given a case manager. Typical case management, but with the extra way of improving access to services – such as where a case manager was able to find a new provider of mental health services when a participant's relationship with a previous provider had broken down. This involved case managers being expected to liaise with service providers to ensure that participants could access those services, and that services would be tailored to participants' needs.	Do not think it was described. (Grace, 2014) The aim of the study was to compare the outcomes of joined up case management (J group) with the outcomes of standard services (S group) in improving a range of employment and housing outcomes for young Australians experiencing both homelessness and unemployment.	Availability	Treatment as usual
Bradford (2005)	Shelter-based outreach programme	The intervention group received psychiatric treatment, the same psychiatrist every time, emphasising continuity of care. Case management services also included.	Used a randomized controlled trial to evaluate the effectiveness of a shelter-based outreach programme to support the transition of homeless individuals with mental health and substance use problems to treatment in a CMHC.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Brown (2016)	Housing First	The 75-unit single-site HF programme is permanent housing operated by a large non-profit agency in Seattle, Washington. Residents are not required to abstain from substance use, nor are they required to participate in mental health or substance use treatment. How- ever, staff provides assertive engagement to encourage participation. Participants in the HF programme received a breadth of intensive, consumer-driven support services based on personal need and interest.	The present study endeavoured to provide existing support for HF as a model to reduce homelessness in the community by examining the effectiveness of HF for individuals with mental illness with varying homelessness histories.	Availability	Treatment as usual
Calsyn (2005)	ACT, Integrated ACT (IACT) New Integrated ACT (NIACT)	ACT: Critical ingredients of the ACT approach include: (1) services are provided by a multidisciplinary team with a client to staff ratio of 10/l; (2) most services are provided in community settings; (3) services are provided without limit on time; (4) the team meets daily to discuss clients and a team member is available 24 hours a day. IACT: The new IT team used existing staff and recruited new substance use specialists. NIACT: The NIACT team was created specifically for this study. The NIACT and IACT teams had substance use specialists on staff and provided substance use services directly as part of the ACT team (no further details on NIACT).	The aims of the study were to evaluate the effectiveness of different treatment models, but also to estimate the effect of the characteristics of the people in them on criminal justice outcomes.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Cheng (2007)	HUD VASH vs Case Management vs control	HUD allocated funds for housing vouchers for a programme providing housing and case management assistance for veterans experiencing homelessness with psychiatric or substance use problems or both.	HUD_VASH was expected to generate sufficient savings in hospitals and housing services, while also improving outcomes for individuals in the intervention group.	Availability	Treatment as usual
Chez Soi	Chez Soi - Housing First	The Housing first model used here involves the provision of permanent, private housing units to qualifying individuals, with consumer choice on services and housing location being fundamental.	The authors provide evidence for lower quality of life relating to increased suicidal ideation, and evidence of a strong negative relationship between housing stability and completed suicides. They believed it was plausible that an intervention shown to improve housing stability, such as HF, may concomitantly reduce suicidal behaviour.	Availability	Treatment as usual
Chinman (2000)	Consumer provided case management	Staff identified themselves as consumer case managers if they had received treatment for a serious mental illness similar to those of the clients served by the programme. Interviews with key informant staff at each of the six sites indicated that consumer staff were expected by their supervisors to perform the same duties as the non-consumer staff and received equivalent pay for their work.	The ACCESS programme was initiated in 1994 by the Center for Mental Health Services (CMHS) to assess whether more integrated systems of service delivery enhance the use of services, outreach, and the quality of life of homeless people with serious mental illness. The study focused on whether there were differences in outcomes whether the intervention was administered by a previous consumer of case management.	Availability and Acceptability	Alternative treatment – Standard Case Management
Clarke (2000)	Consumer ACT Non consumer ACT	ACT programs are similar to other ACT programs, but ACT programme staffed by mental health 'consumers' who had experienced major mental illness Both ACT consisted of four full-time and one part-time case managers, one of whom was the team leader. Both had a psychiatrist to conduct psychiatric assessments.	The authors hypothesized no difference in these outcomes between the two ACT programs, but shorter time to these adverse events among subjects receiving usual community care. They also predicted that significantly more usual care subjects would experience these events over the study period.	Availability and Acceptability (for Consumer ACT only)	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Conrad (1998)	Case Managed Residential Care	Case-Managed Residential Care (CMRC) facility utilized a social model programme implemented in a traditional medical environment. In CMRC, transitional residential care was provided for up to 6 months with ongoing and follow-up case management for a 1-year treatment period. The programme targeted homeless, chemically de-pendent veterans.	Case-Managed Residential Care was a social treatment model that focused on here-and-now issues. A cognitive, behavioural, problem-solving approach was used in contrast to traditional intrapsychic models.	Availability	Treatment as usual
Drake (1998)	ACT vs Standard case management (SCM)	Explicit implementation criteria for these teams included essential features of ACT and four additional criteria focused on dual disorders. Multidisciplinary SCM teams emphasized a team approach, delivered services in the community, worked with the client's support system, and vigorously addressed co-occurring SUD.	Because the study focused specifically on the problem of substance use disorders among patients with severe mental illness, it was hypothesized that patients in ACT would show more progress toward recovery from problematic substance use.	Availability	Alternative treatment - standard case management
Essock (2006)	ACT	It focuses on low staff-to-client ratio, the delivery of most services in the community (rather than the clinic), shared caseloads (rather than an individual caseload for each clinician), 24-hour responsibility for clients, and direct provision of most services (rather than the brokering of services to other providers).	The authors expect that clients with co-occurring disorders who live in urban areas may benefit more from assertive community treatment than from standard clinical case management.	Availability	Alternative treatment - standard clinical case management

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Ferguson (2012)	Individual Placement and Support Model (IPS)	The model has several different supports available: Integration of vocational and mental health treatment services, Vocational and mental health treatment, Competitive employment training and Benefits counselling.	The IPS model is an evidence-based vocational intervention that targets individuals with severe mental illness with customized, long-term and integrated vocational and clinical services to help participants gain competitive employment.	Availability	Treatment as usual
Gilmer (2010)	Full-Service Partnerships (FSP)	The FSP programs implemented in San Diego County provide a combination of subsidized permanent housing and team based services with a focus on rehabilitation and recovery.	The goal of the programme is to provide individuals with housing and intensive community- based care to assist them in reaching their goals and living a life that is not defined by mental illness.	Availability	No treatment
Hwang (2011)	Supportive housing	Tenants have access to a shared kitchen facility, a drop-in centre offering meals and outreach services, as well as a medical and dental clinic providing free services. Individuals accepted into the programme received rental subsidies and paid rent-geared-to-income. Furthermore, tenant support workers assisted residents with mental illness to transition into the housing programme as well as providing ongoing help with living skills, counselling, and advocacy.	Not described	Availability	No intervention

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Karper (2008)	Coordination of care	Care coordination consisted of several functions critical to the successful treatment of dual diagnosis patients: (1) Coordinated Treatment Plan (CTP), (2) Crisis Triage, (3) Transportation Coordination, and (4) Treatment Liaison. This was done in conjunction with the subject's current psychiatric and substance use treatment eliminating duplicate services.	The goal of this research was to measurably improve the mental health of homeless men in our catchment area who suffer from psychiatric and substance-related disorders.	Availability	Treatment as usual
Homeless 3	ACH Vs NACH Vs Control	All participants were offered behavioural day treatment services and randomly assigned to receive either no programme-provided housing during treatment (no housing), programme-provided housing contingent upon abstinence (abstinence-contingent housing), or programme-provided housing not contingent upon abstinence (non-abstinence-contingent housing). This programme was divided into phase I (day treatment, months 1–2), Phase II (work therapy and aftercare, months 3–6), and an additional 6 months of once-weekly aftercare group meetings and individual counselling, if desired (see Fig. 1).	This project sought to characterize the proportion of homeless, psychiatrically distressed cocaine-dependent clients for whom a 6-month evidence-based, behaviourally oriented addiction treatment (in which two out of three trial arms experienced significantly superior abstinence outcomes, as previously reported 19) was followed by stable housing and employment at 12 months.	Availability	Alternative treatment

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Killaspy (2006)	ACT	Assertive engagement: multiple attempts, flexible and various approaches (for example, befriending, offering practical support, leisure activities)	Not specified – However, they hypothesised that assertive community treatment delivered by specialised teams operating with a high degree of fidelity to the model would lead to fewer days of inpatient care than standard case management provided by community mental health teams.	Availability	Treatment as usual – A community mental health team that was established previously
Lehman (1997)	ACT	The programme defined its mission broadly to integrate assertive, community-based clinical treatment with intensive case management and advocacy. The ACT team's long-term commitment was to promote continuity of care.	The study aims to use ACT as a way to treat chronic medical problems.	Availability	Treatment as usual
Lim (2017)	NYNY III	The NYNY III programme for young adults aging out of foster care provides affordable housing and access to various supportive services to help achieve independent lives, including case management, job training, and education support, and provides connections to physical and mental health services.	The authors investigated the effectiveness of the NYNY III project in improving housing stability among former foster youth eligible for the programme. Additionally, to test the hypothesis that housing stability is effective in reducing sexually transmitted infections (STIs) among former foster youth, we examined whether housing stability via the NYNY III was associated with decreased STI rates.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Lim (2018)	New York Supportive Housing Programme	The programme followed the housing first model with housing placement not being contingent on adhering to treatment or services	In a programme evaluation of supportive housing in New York City (NYC), we sought to determine whether there was an association between supportive housing tenancy and Medicaid savings among those with serious mental ill- ness and chronic homelessness or dual diagnoses of mental illness and substance use when stratified by distinctive Medicaid expenditure patterns.	Availability	No treatment

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	ACHM - Intense case management, gives life skills training. Low case load, leading to high intensity. HSG - Drop in housing support group. Weekly at the addiction treatment centre. Provided education and assistance in getting housing services.	Not really specified, but: Investigators hypothesized that AHCM compared to HSG would increase percentage of days in stable housing; lower acute health care utilization; and improve SUD, mental health, and functional status outcomes during the year following treatment entry.	Availability	Alternative treatment - The HSG condition involved a drop-in housing support group held weekly in the Addiction Treatment Center. The group focused on gaining support from fellow study participants and learning from those who successfully obtained housing. Group facilitators provided education about housing resources and assistance with housing-related issues

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
McCormack (2013)	Coordinated case management and facilitated access to homeless outreach services	On each visit, social workers and outreach team met with participants, guided by previously developed care plans to offer shelter on discharge. Assigned case- workers relocated participants into increasingly supportive settings, coordinated multidisciplinary care, and updated plans during biweekly interagency meetings on the basis of participants' medical, psychosocial, and housing needs.	Interventions aimed at improving medical, psychosocial, and housing needs. Otherwise, not specified	Availability	Treatment as usual
McHugo (2004)	Integrated housing services programme	The integrated housing services approach was implemented by a single agency that provided comprehensive mental health services through intensive case management and housing services through dedicated teams that controlled a variety of housing settings. Although this agency valued independent living settings for its clients, it did not adhere to the scattered-site model, and it considered congregate settings appropriate for some clients.	The authors investigated if the participants would be more satisfied with a parallel housing services approach, which would more often enable them to live independently. Or, would participants be more likely to reside in stable housing in the integrated housing services approach, which would encounter fewer barriers to stable housing and would make greater use of supervised group living settings.	Availability	Alternative treatment - The ACT teams assisted clients in finding and affording housing, but the teams had no control over housing stock; also, housing was not linked to mental health services. These programs espoused the principles of supported housing, and their goal was to place all clients in independent housing, but safe and affordable apartments were scarce.

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Homeless 1	Enhanced Care	Some participants received abstinent contingent work therapy (44.9% of EC subjects) and housing (37.7% of EC subjects). Work therapy, day treatment focused on relapse prevention, social skills training, goal review, week-end planning, community resources for individuals experiencing homelessness.	The purpose of the study was to determine if an enhanced day treatment, with interventions for substance use and homelessness, could successfully recruit, retain, and successfully intervene with individuals experiencing homelessness who have problematic substance use'.	Availability	Treatment as usual
Homeless 2	Day treatment +	Day treatment met weekdays, included lunch and transportation to and from shelters. The following groups were conducted: participant governed morning meeting, process group, AIDS education, relapse prevention training, goal development, goal review, assertiveness training, role play, weekend planning, reinforcement exposure and planning, recreation outing group, 12 Steps, relaxation, recreation goal development and recreation goal review.	This study addressed the question: What are the necessary and sufficient conditions to initiate abstinence and to most effectively treat dually diagnosed, homeless, cocaine abusing persons	Availability	Treatment as usual
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Continuous treatment - act and intensive case management, among other things. Traditional Outpatient - Psychotherapy, psychiatric medication and assistance obtaining social services. Drop in Centre - Offered clothes, showers. Had social workers to refer clients to social services.	All three were thought to improve a range of outcomes over time, but that continuum of care would be the most effective.	Availability	Treatment as usual - Outpatient Treatment

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Morse (1997)	ACT with community workers ACT only	ACT + The approach using community workers operated similarly to the assertive community treatment only condition with one exception. Clients were also assigned a paraprofessional community worker whose role was to assist with activities of daily living and to be available for leisure activities. ACT Only Treatment principles were similar to those of other assertive community treatments and included intensive individualized treatment, responsibility for providing or coordinating all services needed by the client, persistent follow-up, and in vivo service delivery.	The purpose of this study was to identify prototypical profiles of BPRS factor scores in a sample of individuals with mental illness who were homeless at baseline and to use these prototypical profiles, along with elevation, to describe profile changes over time.	Availability (for both ACT interventions)	Alternative treatment - Brokered case management
Nyamathi (2015)	Peer coaching with or without Nursing Case Management	Peer coaching over 8 weeks designed to support the client in their reintegration into the community following incarceration/residential drug treatment. Nurse case management focused on health promotion, reducing risky drug and sexual behaviours and encouraging adherence to treatment. The main focus of these sessions included building effective coping skills, personal assertiveness, and self-management, skill-building, and building personal empowerment. Peer Coaching (PC) Programme: Participants assigned to the PC programme received weekly peer coaching interaction similar to the PC component of the PC-NCM programme.	Peers act as positive role models and offer support for transition to community living. Nurse case managers aim to increase health knowledge, support clients to reflect on and come up with solutions for non-adherence to treatment, risky behaviour and non-attendance at health care appointments.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
O'Toole (2018)	H-PACT - Homeless patient aligned care team	The H-PACT includes: 1) on-site housing assistance and incorporation of homeless programme staff members into the care team; 2) open access and/ or care-on-demand capacity to facilitate access; 3) specialized training of staff members on issues unique to the homeless population; 4) on-site services aimed at addressing competing social needs, such as transportation, food assistance, clothing, hygiene kits, and showers; and 5) incorporation of homeless specific protocols and monitors into clinical care.	Built on the framework of PACT, it has enhancements intended to address issues of access, treatment engagement, competing priorities, and the social determinants of health that are associated with homelessness. The objective of this study was to compare health care service use and cost outcomes among veterans experiencing homelessness enrolled in a traditional (not tailored to a homeless population) PCMH with outcomes among veterans experiencing homelessness enrolled in a homeless population–tailored PCMH.	Availability	Treatment as usual
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	HUD VASH: intensive case management [ICM] plus rent subsidy vouchers ICM: Intensive case management only	Some subgroups will benefit significantly than other veterans who were given rapid access to housing vouchers offered by the HUD VASH programme.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
O'Toole (2010)	HOPC - Homeless-Oriented Primary Care	People were assigned a case manager, physician or nurse, Outreach and coordination of care with community shelters: frequent meetings, case conferencing with area shelter providers. "The clinic operates as a hospital-based, open-access care model with nurse case management, with wraparound onsite services that include food, assistance with housing and veterans benefits, clothes, and mental health care, along with a harm-reductionist approach to patient encounters."	Our intent was to determine whether a population-tailored approach to how primary care is organized and delivered to veterans experiencing homelessness is associated with better health care and utilization outcomes	Availability	Treatment as usual – General internal medicine
Reback (2009)	Contingency management (CM)	Participants in the CM condition earned points for completing the targeted health-promoting behaviours and for drug/alcohol abstinence. Complex behaviours were broken down into smaller component behaviours to give participants more opportunities to earn points.	The purpose of this study was to assess the efficacy of CM for increasing health-promoting behaviours and reducing sub- stance use among homeless, substance-dependent MSM participating in a community-based, low-intensity HIV prevention programme. We predicted that those randomized into the CM condition would achieve more health-promoting behaviours and greater reductions in substance use than those in the control condition.	Availability	Alternative Treatment – Those participants who did not earn points for the intervention were the control
Sacks (2004)	Homeless Prevention Therapeutic Community (HP-TC)	Provides a huge variety of services for both child and parent with the aim to improve the lives of both, including preventions interventions, housing, housing stabilisations.	The core elements and activities of TC programs were adapted to address the problem of drug use, to provide a foundation for a full personal recovery or change, and to furnish an environment within which homelessness prevention interventions occur as described in other writings.	Availability	Treatment as usual

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Samuels (2015)	Family Critical Time Intervention (FCTI)	FCTI provides an intensive, 9-month case management model based on the Critical Time Intervention (CTI) programme that originated and demonstrated cost-effectiveness.	The titrated FCTI model was designed to (a) strengthen family members' long- term ties to the services they need, (b) heal and strengthen maternal relation ships with extended families and friends, and (c) provide emotional and practical support.	Availability	Treatment as usual
Shern (1997)	New York Street Study - specialised housing New York Street Study 'experimental' San Diego Intensive Case Management Traditional CM with or without section 8 Boston Evolving Consumer Households vs independent living New York CTI vs control	Little detail provided on each individual intervention. "The Boston project compared congregate consumer-run housing with independent living. In New York specialized housing for homeless pensons with severe mental illness was the primary housing resource. The San Diego project tested the importance of Section 8 housing certificates in obtaining and maintaining housing."p240	Not specified but the main focus appears to be on the integration of services to improve accessibility and acceptability	Availability and Acceptability	Alternative Treatment - San Diego study intensive case management vs traditional case management Treatment as usual - NY street = standard services Baltimore = standard services San Diego = Traditional Case Management

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Slesnick (2015)	Community Reinforcement Approach Motivational Enhancement Therapy	Community Reinforcement Approach CRA is an operant-based therapy with the goal to help individuals restructure their environment so that drug use or other maladaptive behaviours are no longer reinforced and other positive behaviours are reinforced. Therapists follow a standard set of core procedures and a menu of optional treatment modules matched to clients' needs (The core session topics include (1) a functional analysis of using behaviours, (2) refusal skills training, and (3) relapse prevention (4) job skills, (5) social skills training including communication and problem-solving skills, (6) social and recreational counselling, (7) anger management and affect regulation. Motivational Enhancement Therapy] This intervention assumes that the responsibility and capability for change lie within the client and need to be evoked (rather than created or instilled). Four principles guide the practice of MI: express accurate empathy, develop discrepancy, roll with resistance and support self-efficacy.	It was hypothesized that adolescents and young adults receiving each treatment would show significant improvements in the primary outcome, alcohol and drug use, as well as the secondary outcomes including depressive symptoms, internalizing/externalizing problems, victimization, homelessness, and coping.	Availability (for both intervention)	Alternative Treatment - Case management

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - They provided education about reducing the risk of HIV transmission, information about HIV services, and referrals to problematic substance use treatment, social services, and HIV services in the community Case management - The case management condition was a hybrid between the brokerage and full-service models described by Rapp. It included elements of service brokerage (advocating for client entry to programs) and counselling (continuing contact with patients through a 1-year period). The case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	To address the question of the utility of case management in this population, in a random assignment study we tested the impact of case management for individuals with problematic substance use with HIV/AIDS.	Availability and Acceptability	Treatment as usual - Case management programme was there before the study began
Srebnik (2013)	Begin at Home (BAH),	Begin at home is a form of housing first. HF is characterized by rapid placement from homelessness directly into permanent (rather than transitional) housing, supported by assertive on-site engagement and services but no requirement to participate or to achieve or maintain sobriety. The model emphasizes participants' being good tenants. Interventions target behaviours negatively affecting the ability to remain in the community (e.g., managing day-to-day responsibilities of being in an apartment, conflicts with other tenants). Services focus on harm reduction, relapse prevention, and recovery associated with mental illness, chemical dependency, and medical conditions. Eviction is seen as a last resort. Tenants hold leases and have the full rights and obligations of tenancy.	The theory behind HF is that a low- barrier approach that removes requirements for treatment and abstinence will more readily engage and retain individuals who are challenging to serve.	Availability and Acceptability	No Treatment

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Starks (2012)	ACT	Provides intensive and integrated services for the most severely ill and unserved, underserved, or inappropriately served individuals in LA County. Each intervention team includes a psychiatrist, other mental health providers (usually social workers), housing and employment services specialists, and client and/or parent advocates; have client-to-staff ratios not exceeding 15:1; and are available to enrolled clients around the clock, seven days a week.	The rationale for this intervention is that FSP programs provide much more intensive outpatient services, including services available around the clock and in the field. The rationale for this intervention is that the intensive and always available services provided through the FSP programs will reduce the need for 6 inpatient/ residential and emergency services, both directly through substitution and indirectly through improvements in adherence to care and medication appropriateness and adherence, avoidance of crises and acute episodes, and improved mental health symptoms and functioning.	Availability	Treatment as usual
Stefancic (2007)	Pathways (HF) Vs Consortium (HF)	Pathways to Housing (HF) and Consortium (HF) both provide Housing First services, in the form of independent scatter-site apartments and ACT. Pathways had a more straightforward HF approach, whereas Consortium was a newly formed mix of treatment and housing agencies from within the county but with no prior experience operating Housing First.	By providing permanent, independent housing without prerequisites for sobriety and treatment, and by offering support services through consumer-driven Assertive Community Treatment teams, Housing First removes some of the major obstacles to obtaining and maintaining housing for consumers who are chronically homeless.	Availability, affordability and Acceptability	Treatment as usual
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	The intervention included linkage to financial aid, housing support, counselling for substance problems, job training, etc. Addresses the clients of immediate tangible needs.	No information	Availability	No treatment

Study ID	Name of Intervention	Brief description of the intervention	Theory of change	Access Intervention Type	Control/ comparison condition
Wolff (1997)	Assertive Community Treatment with Community Workers Vs. Assertive Community Treatment Only	ACT - The services, which were offered for an unlimited period of time, included outreach, 24-hour emergency services, assistance in obtaining entitlements and other resources, transportation, skill training and assistance in activities of daily living, symptom management, supportive counselling, and traditional mental health services. ACT and Community workers - Each client in this condition was also assigned a community worker, whose role was to involve the client in “normalizing” activities, which included participation in individual and community leisure activities. Some community workers also supplemented the work of the assertive community treatment staff by assisting clients with activities of daily living, although this usually occurred only on a limited basis.	Not specified in this paper	Availability	Alternative Treatment - Brokered case management

Risk of Bias due to conflicts of interest

Bias presents a serious challenge to any review of evaluation studies (Rothstein, 2008). Of the 47 included studies, 38 reported no conflict of interests, or the screeners could not find evidence indicating there was. However, there were nine studies which did show potential problems with bias.

Several papers include Sam Tsemberis as an author (Appel et al., 2012; Goering et al., 2012), who created the variant of Housing First (Pathways to Housing) which was evaluated in these studies. As an author with a possible vested interest in the effectiveness of their own intervention, these studies were deemed to have possible bias. Several of the studies involved authors who trained interventionists (Baer, 2007), administered the intervention themselves (Bradford, Gaynes, Kim, Kaufman and Weinberger, 2005; Essock, 2006; Kertesz et al., 2007) or were deeply involved in the measurement of outcomes (Killaspy et al., 2006; O'Toole et al., 2010). This close contact between authors and participants led us to flag these studies as having possible bias. In the case of Brown, Jason, Malone, Srebnik and Sylla, (2016), one of the authors was connected to the place where the participants were recruited from, and this could possibly influence the results. In the case of Slesnick, Guo, Brakenhoff, and Bantchevska (2015), funding was given directly to the first author, and thus worthy of note.

Methodological Quality of Included Studies

Assessment of methodological quality and potential for bias was conducted using the second version of the Cochrane Risk of Bias tool for Randomised Controlled Trials (Higgins et al., 2016). The 30 studies in this review that are labelled as randomised controlled trials were assessed for risk of bias and placed into one of three categories from the Cochrane Risk of Bias tool: low risk of bias, some concerns and high risk of bias. Non-randomised studies were coded using the ROBINS- I tool (Sterne et al., 2016). The 17 studies in this review that are labelled as non RCT's were also assessed for risk of bias and placed into one of four categories from the ROBINS-I tool: low, moderate, serious and critical. Out of the 47 studies, two had sufficiently low risk of bias, 32 had moderate to serious problems with risk of bias, and 13 showed high, critical problems with their methodology. Table 3 provides a summary of the overall risk of bias assessment for all included studies.

Table 3: Risk of bias of included studies

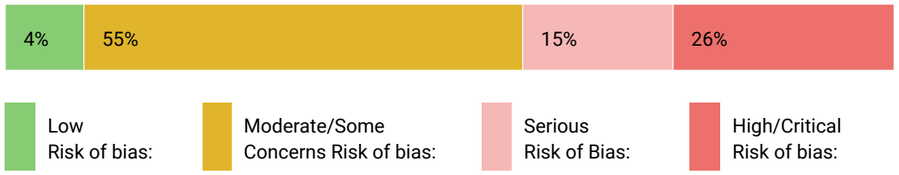
Study ID	Study Design	Risk of Bias
Appel (2012)	Non-RCT	
Baer (2007)	RCT	
Ballard (2002)	Non-RCT	
Bell (2015)	RCT	
Bond (1990)	RCT	
Borland (2013)	RCT	
Bradford (2005)	RCT	
Brown (2016)	Non-RCT	
Calsyn (2005)	RCT	
Cheng (2007)	RCT	
Chez Soi	RCT	
Chinman (2000)	Non-RCT	
Clarke (2000)	RCT	
Conrad (1998)	RCT	
Drake (1998)	RCT	
Essock (2006)	RCT	
Ferguson (2012)	Non-RCT	
Gilmer (2010)	Non-RCT	
Homeless 1	RCT	

Low Risk of bias: | Moderate/Some Concerns Risk of bias: | Serious Risk of Bias: | High/Critical Risk of bias:

Study ID	Study Design	Risk of Bias
Homeless 2	RCT	
Homeless 3	Non-RCT	
Hwang (2011)	Non-RCT	
Karper (2008)	Non-RCT	
Killaspy (2006)	RCT	
Lehman (1997)	RCT	
Lim (2017)	Non-RCT	
Lim (2018)	Non-RCT	
Malte (2017)	RCT	
McCormack (2013)	Non-RCT	
McHugo (2004)	RCT	
Morse (1992)	RCT	
Morse (1997)	RCT	
Nyamathi (2015)	RCT	
O'Connell (2012)	RCT	
O'Toole (2018)	Non-RCT	
O'Toole (2010)	Non-RCT	
Reback (2009)	RCT	
Sacks (2004)	Non-RCT	
Samuels (2015)	RCT	
Shern (1997)	RCT	
Slesnick (2015)	RCT	

Study ID	Study Design	Risk of Bias
Sorensen (2003)	RCT	
Srebnik (2013)	Non-RCT	
Starks (2012)	Non-RCT	
Stefancic (2007)	RCT	
Toro (1997)	RCT	
Wolff (1997)	RCT	

Overall risk of bias



Synthesis of results

The framework of access interventions (Figure 1), suggested that interventions can be categorised according to three key mechanisms by which accessibility might be improved, that is through improving availability, acceptability and/or affordability of services. Each intervention included in the evaluations synthesised below was classified according to this framework. The majority of interventions (85%, n=40) focused on increasing the availability of services for those experiencing homelessness. Six interventions (15%) aimed to increase both availability and acceptability. One intervention focused on improving the affordability of services, in addition to availability and acceptability. It was therefore not possible to divide the interventions into three discrete categories (of availability, acceptability and affordability) and for this reason it was not possible to quantitatively explore the differential impact that each category of intervention might have on access (and other outcomes). To help contextualise the results reported below and how they might relate to the framework, a qualitative description

of the interventions is provided alongside each analysis (drawing on the information also included in Table 2).

Sub-group analyses were conducted to explore whether effects differed according to certain study or intervention characteristics. It was possible to assess the moderating influence of study risk of bias and the age of the participants on effects, however, there were too few studies to consider single vs family focused interventions as a moderating variable. Nor was it possible to separate studies into meaningful categories on the basis of complexity of need, so this variable was not included as a moderator either. It was evident that the interventions could be categorised according to whether it was provided in addition to housing support, or separately, without additional housing support. For this reason, we included an additional, exploratory, sub-group analysis to assess whether interventions were more (or less) effective if they were also provided alongside housing support. This is reported for each outcome below.

The analyses used a hierarchical model, recognising that studies report multiple effect sizes relevant to each outcome. The analysis also utilised a random effects model estimating the variance component with REML. Given the dependencies among effect sizes within studies, robust variance estimation was used for estimating the standard errors of parameters of the models. All effect sizes were transformed to standardized mean differences for this analysis.

The primary outcome of this review is access to services and this is reported first. However, the evaluations included in this review also measured other outcomes that fall within the domains of the effectiveness EGM, which include capabilities and wellbeing, community support for individual needs, crime/criminalisation, employment and income, and cost effectiveness. There was insufficient cost data to meaningfully report on this outcome. These are reported as secondary outcomes.

Primary outcome

Access to services

The primary aim of this review was to determine whether interventions aimed at improving individuals' access to health and social care services are effective in doing so. Across the studies included in this analysis, 'access' was defined, measured and reported in different ways and included: frequency of contact with the programme, uptake of mental health services, attendance of substance use programmes and utilisation of other services (not always specified in the study report but could include, for example, vaccination uptake). In this analysis we include all measures that report access to any health or social care service (but not including hospitalisation or emergency department visits, which are reported separately below).

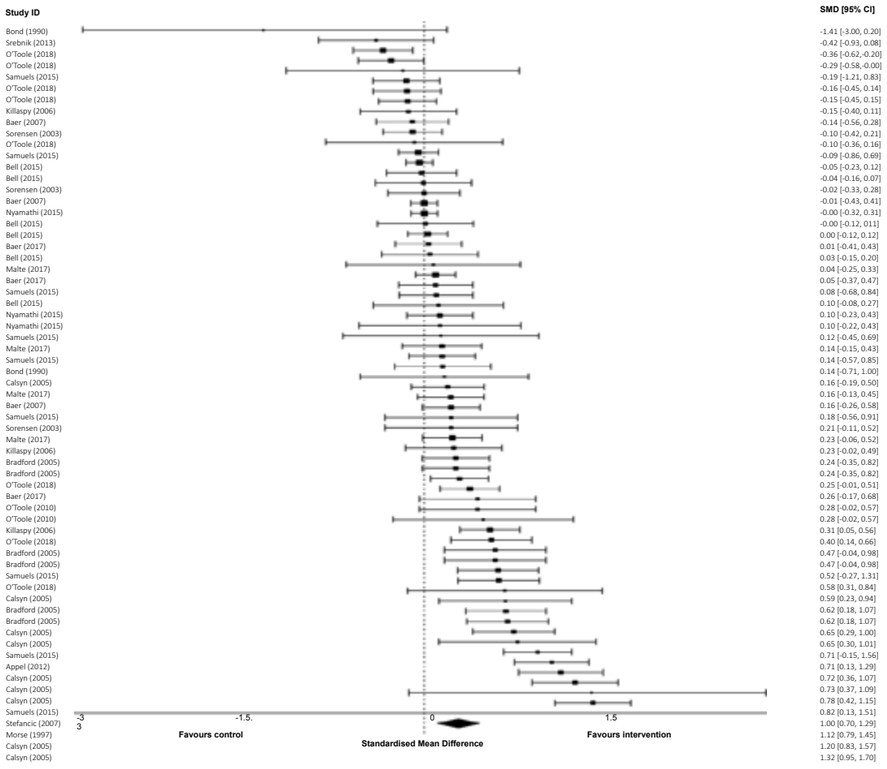
Sixty-seven (67) effect sizes from 16 studies were included in this meta-analysis. Note that, even if all the interventions included in this review had a component aimed at improving access to services, only a fraction of them actually measured access to these services as an outcome. Other interventions that didn't measure access as an outcome (but measured other outcomes) are discussed in the remainder of this report.

The overall mean effect was 0.3 (SE=0.091, p=0.005, df=14.1) which indicates a moderate increase in service utilisation for those receiving the intervention programmes. This is the best estimate of effect given the available evidence and there is only a small amount of uncertainty around the estimate as indicated by the 95% confidence interval, which means that a positive effect size as large as 0.48 (indicating a large increase in service utilisation) or as small as 0.12 (indicating a small increase in service utilisation) would also be consistent with the data reported here.

The meta-analyses are visually represented by forest plots (Figure 3 for the current analysis). In a forest plot each study is represented by a separate horizontal line with a black square in the centre. The size of the square corresponds to the (sample) size of the study. The bars on either side of each square relate to the precision of the estimated effect – longer bars indicate less precision. If the bars extend across the vertical zero line, the line of

no effect, this indicates that the differences between the intervention and control groups (for that particular study) were not statistically significant. The diamond at the base of the forest plot shows the overall effect of the interventions on the outcome. The centre of the diamond denotes the weighted average effect of the synthesised studies and represents the best estimate available with the existing data. The width of the diamond indicates the 95% confidence intervals, which denote how other effects are also reasonably consistent with the data given the statistical assumptions used – these could be understood as 'good' and 'bad' plausible scenarios.

Figure 3: Forest plot of effect sizes for access to services



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The 16 interventions represented in the analysis above are briefly described in Table 4. All of the interventions aimed to increase the availability of services with two also aiming to improve service acceptability (Sorenson, 2003; Baer, 2007). Two interventions also included additional housing in their provision (Appel 2012; Bradford, 2005) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 4: Description of the interventions included in the access to services meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Appel (2012)	Keeping Home project (Housing First approach)	Housing First approach, to address the needs of homeless individuals experiencing serious mental health conditions and problematic substance use by securing market-rate, scattered site apartments and additional assertive community treatment supports	Availability
Baer (2007)	BMI Brief motivational interventions	Substance use check-up where information about patterns and risks related to substance use are provided as personal feedback.	Availability and Acceptability
Bell (2015)	KCCP Intervention (King County Care Partners)	Intensive care management from a team with drug/alcohol treatment training.	Availability
Bond (1990)	ACT	Assertive community treatment.	Availability
Bradford (2005)	Shelter-based outreach programme	Psychiatric treatment, emphasising continuity of care alongside case management services.	Availability
Calsyn (2005)	ACT, Integrated ACT (IACT) New Integrated ACT (NIACT)	Assertive community treatment including provision by substance use specialists.	Availability
Killaspy (2006)	ACT	Assertive community treatment.	Availability
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	ACHM - Intense case management HSG - Drop in housing support group providing education and assistance in accessing housing services	Availability
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker	Availability (for both interventions)
Nyamathi (2015)	Peer coaching with or without Nursing Case Management	Weekly peer coaching over 8 weeks. Nurse case management focused on health promotion, reducing risky drug and sexual behaviours and encouraging adherence to treatment.	Availability
O'Toole (2010)	HOPC - Homeless-Oriented Primary Care	Open-access care model with nurse case management and wraparound onsite services alongside with a harm-reductionist approach to patient encounters.	Availability
O'Toole (2018)	H-PACT - Homeless patient aligned care team	On-site housing assistance, open access capacity to facilitate access, specialised staff training, on-site services and incorporation of homeless specific protocols.	Availability
Samuels (2015)	Family Critical Time Intervention (FCTI)	An intensive, 9-month case management model based on the Critical Time Intervention (CTI).	Availability
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Srebnik (2013)	Begin at Home (BAH),	Housing First model characterised by rapid placement from homelessness directly into permanent housing, supported by assertive on-site engagement and services.	Availability and Acceptability

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Stefancic (2007)	Pathways (HF) Vs Consortium (HF)	Pathways to Housing (HF) and Consortium (HF) both provide Housing First services, in the form of independent scatter-site apartments and ACT. Pathways had a more straightforward HF approach, whereas Consortium was a newly formed mix of treatment and housing agencies.	Availability, affordability and acceptability

Secondary outcomes

When considering the secondary outcomes, it is important to bear in mind that the mechanisms by which these interventions might impact these additional outcomes is not necessarily through increasing access to public services, or at least not directly. Many of these interventions have other components (e.g. housing) that may have other direct impacts on the outcomes measured below.

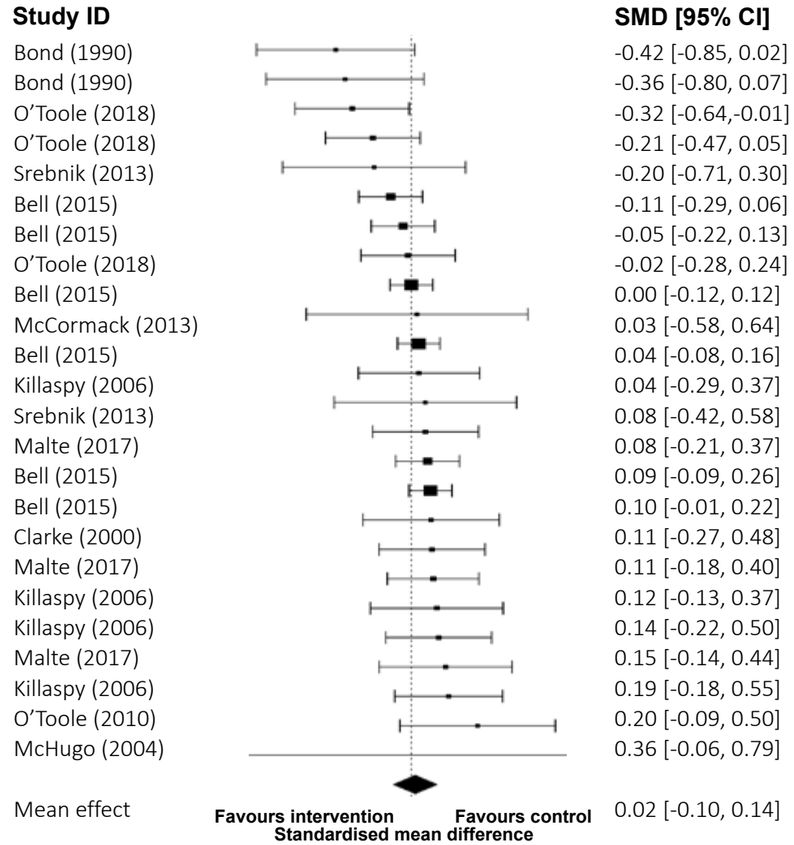
Further work is needed to better understand the pathways through which such services operate, and this is discussed later in the report.

Hospitalisation

Twenty-four (24) effect sizes from ten studies were included in this meta-analysis.

The hospitalisation outcome included both medical and psychiatric hospital admissions. Across the included studies it was reported as either inpatient days or number of admissions. The overall mean effect was 0.02 (SE=0.056, p=0.716, df=6.99) which indicates an extremely small change in hospitalisations for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is some uncertainty around this estimate as indicated by the 95% confidence interval, which means that a positive effect of 0.14 (increased hospitalisations) or a negative effect of -0.10 (decreased hospitalisations) would also be consistent with the data reported here. See Figure 4.

Figure 4: Forest plot of effect sizes for hospitalisation



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The ten interventions represented in the analysis above are briefly described in Table 5. All of the interventions aimed to increase the availability of services with two also aiming to improve service acceptability (Clarke, 2000; Srebnik, 2013). Three interventions also included additional housing in their provision (McHugo, 2004; O'Toole, 2018; Srebnik, 2013) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models

Table 5: Description of the interventions included in the hospitalisation meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Bell (2015)	KCCP Intervention (King County Care Partners)	Psychiatric treatment, emphasising continuity of care alongside case management services.	Availability
Bond (1990)	ACT	Assertive community treatment.	Availability
Clarke (2000)	Consumer ACT Non consumer ACT	ACT with or without staffed by mental health 'consumers' with experience major mental illness	Availability and Acceptability (for Consumer ACT only)
Killaspy (2006)	ACT	Assertive community treatment.	Availability
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	ACHM - Intense case management HSG - Drop in housing support group providing education and assistance in accessing housing services	Availability

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
McCormack (2013)	Coordinated case management and facilitated access to homeless outreach services	Case management to offer shelter on discharge and coordination of care.	Availability
McHugo (2004)	Integrated housing services programme	Intensive case management and housing services through dedicated teams. Both scattered-site and congregate housing models were used.	Availability
O'Toole (2018)	H-PACT - Homeless patient aligned care team	On-site housing assistance, open access capacity to facilitate access, specialised staff training, on-site services and incorporation of homeless specific protocols.	Availability
O'Toole (2010)	HOPC - Homeless-Oriented Primary Care	Open-access care model with nurse case management and wraparound onsite services alongside with a harm-reductionist approach to patient encounters.	Availability
Srebnik (2013)	Begin at Home (BAH),	Housing First model characterised by rapid placement from homelessness directly into permanent housing, supported by assertive on-site engagement and services.	Availability and Acceptability

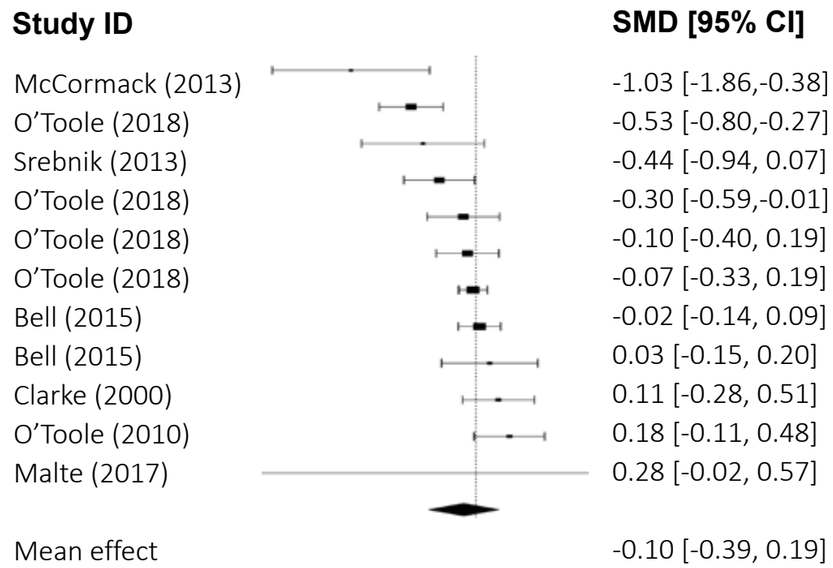
Emergency department visits

To explore the impact of access interventions on the number of emergency department (ED) visits, 11 effect sizes from seven studies were included in a meta-analysis.

The overall mean effect was -0.10 (SE=0.127, p=0.461, df=5.53) which indicates a very small reduction in the number of emergency department visits for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.39 (a greater reduction in ED visits) or 0.19 (an increase in ED visits) would also be consistent with the data reported

here. Figure 5 illustrates the range of individual effect sizes included in the analysis.

Figure 5: Forest plot of effect sizes for emergency department visits



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The seven interventions represented in the analysis above are briefly described in Table 6. All of the interventions aimed to increase the availability of services with two also aiming to improve service acceptability (Clarke, 2000; Srebnik, 2013). Two interventions also included additional housing in their provision (O'Toole, 2018; Srebnik, 2013) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 6: Description of the interventions included in the emergency department visits meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Bell (2015)	KCCP Intervention (King County Care Partners)	Intensive care management from a team with drug/alcohol treatment training.	Availability
Clarke (2000)	Consumer ACT Non consumer ACT	ACT with or without staffed by mental health 'consumers' with experience major mental illness.	Availability and Acceptability (for Consumer ACT only)
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	ACHM - Intense case management HSG - Drop in housing support group providing education and assistance in accessing housing services.	Availability
McCormack (2013)	Coordinated case management and facilitated access to homeless outreach services	Case management to offer shelter on discharge and coordination of care.	Availability

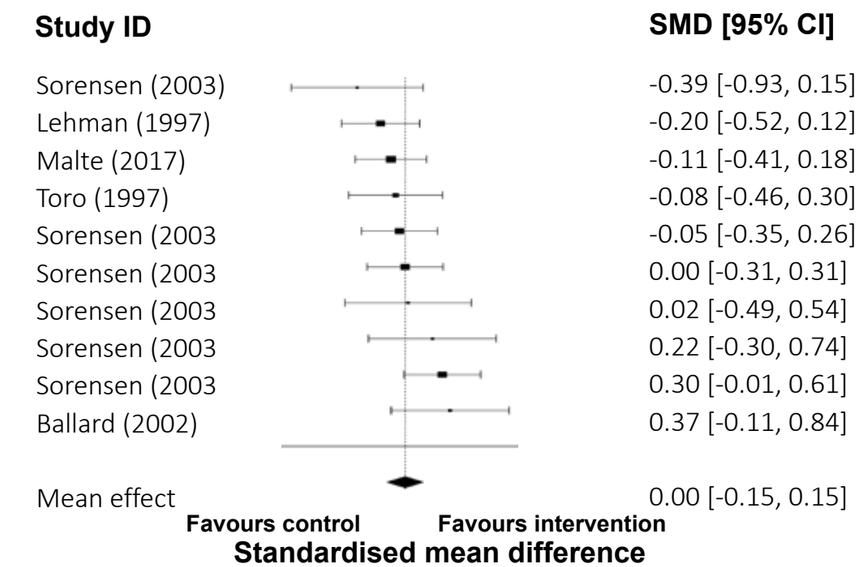
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
O'Toole (2018)	H-PACT - Homeless patient aligned care team	On-site housing assistance, open access capacity to facilitate access, specialised staff training, on-site services and incorporation of homeless specific protocols.	Availability
O'Toole (2010)	HOPC - Homeless-Oriented Primary Care	Open-access care model with nurse case management and wraparound onsite services alongside with a harm-reductionist approach to patient encounters.	Availability
Srebnik (2013)	Begin at Home (BAH),	Housing First model characterised by rapid placement from homelessness directly into permanent housing, supported by assertive on-site engagement and services.	Availability and Acceptability

Physical health

To explore the impact of access interventions on participants' reporting of their physical health, ten effect sizes from five studies were included in a meta-analysis.

Across the studies included in the following analysis physical health was mostly assessed via questionnaire using an instrument like the SF-36 health survey or the medical status subscale of the Addiction Severity Index (McLellan, et al., 1992). The overall mean effect was 0.001 (SE=0.057, p=0.989, df=2.18) which indicates almost no difference between the reported physical health of those receiving the intervention programme compared to those receiving standard care. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.15 (a small reduction in reported physical health) or 0.15 (a small increase in reported physical health) would also be consistent with the data reported here. Figure 6 illustrates the range of individual effect sizes included in the analysis.

Figure 6: Forest plot of effect sizes for physical health



Heterogeneity

There were too few studies to conduct any sub-group analyses.

Description of the included interventions

The five interventions represented in the analysis above are briefly described in Table 7. All of the interventions aimed to increase the availability of services with one also aiming to improve service acceptability (Sorenson, 2003). Two interventions also included additional housing in their provision (Toro, 1997; Malte, 2017) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 7: Description of the interventions included in the physical health meta-analysis

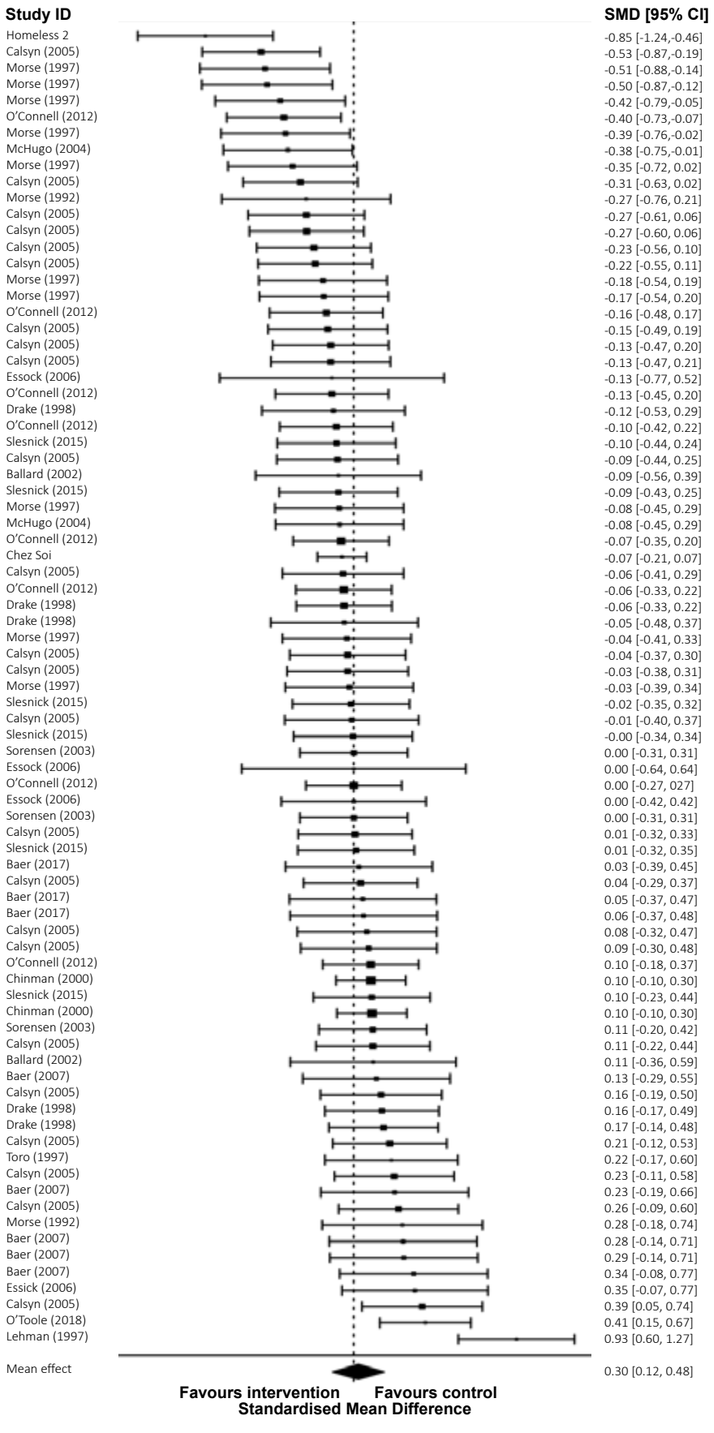
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Lehman (1997)	ACT	Assertive community treatment.	Availability
Malte (2017)	Intervention 1 - Intensive addiction/ housing case management (AHCM) Intervention 2 - Housing support group, HSG	ACHM - Intense case management HSG - Drop in housing support group providing education and assistance in accessing housing services.	Availability
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

Drug and alcohol use

To explore the impact of access interventions on drug and alcohol use, 81 effect sizes from 17 studies were included in a meta-analysis.

In most cases drug and alcohol use was assessed through a structured interview with the participant using a variety of measures, including for example: self-reported number of days drinking, number of days abstinent and/or completion of the alcohol and drugs subscale of the Addiction Severity Index (McLelland, 1992). The overall mean effect was 0.03 (SE=0.073, p=0.724, df=15.7) which indicates an extremely small increase in drug and alcohol use for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.12 (a reduction in drug and alcohol use) or 0.17 (an increase in drug and alcohol use) would also be consistent with the data reported here. Figure 7 illustrates the range of individual effect sizes included in the analysis.

Figure 7: Forest plot of effect sizes for drug and alcohol use



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The 17 interventions represented in the analysis above are briefly described in Table 8. All of the interventions aimed to increase the availability of services with three also aiming to improve service acceptability (Baer, 2007; Chinman, 2000; Sorenson, 2003). Four interventions also included additional housing in their provision (Chez Soi; McHugo, 2004; O'Toole, 2018; Toro, 1997) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 8: Description of the interventions included in the drug and alcohol meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Baer (2007)	BMI Brief motivational interventions	Substance use check-up where information about patterns and risks related to substance use are provided as personal feedback.	Availability and Acceptability
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, alcohol and/or problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Calsyn (2005)	ACT, Integrated ACT (IACT) New Integrated ACT (NIACT)	Assertive community treatment including provision by substance use specialists.	Availability

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Chez Soi	Chez Soi - Housing First	A Housing First model providing permanent, private housing units to qualifying individuals, including clients' choice.	Availability
Chinman (2000)	Consumer provided case management	Case management provided by staff experience of treatment for a serious mental illness similar to those of the clients served by the programme.	Availability and Acceptability
Drake (1998)	ACT vs Standard case management (SCM)	Assertive community treatment vs standard case management.	Availability
Essock (2006)	ACT	Assertive community treatment.	Availability
Lehman (1997)	ACT	Assertive community treatment.	Availability
McHugo (2004)	Integrated housing services programme	Intensive case management and housing services through dedicated teams. Both scattered-site and congregate housing models were used.	Availability
Homeless 2	Day treatment +	Day treatment including lunch and transportation to and from shelters. Day treatment included, for example, AIDS education, relapse prevention training, goal development, assertiveness training, recreation and relaxation.	Availability
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Assertive Community treatment and intensive case management as well as traditional mental health outpatient services and a drop in centre.	Availability
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker.	Availability (for both ACT interventions)

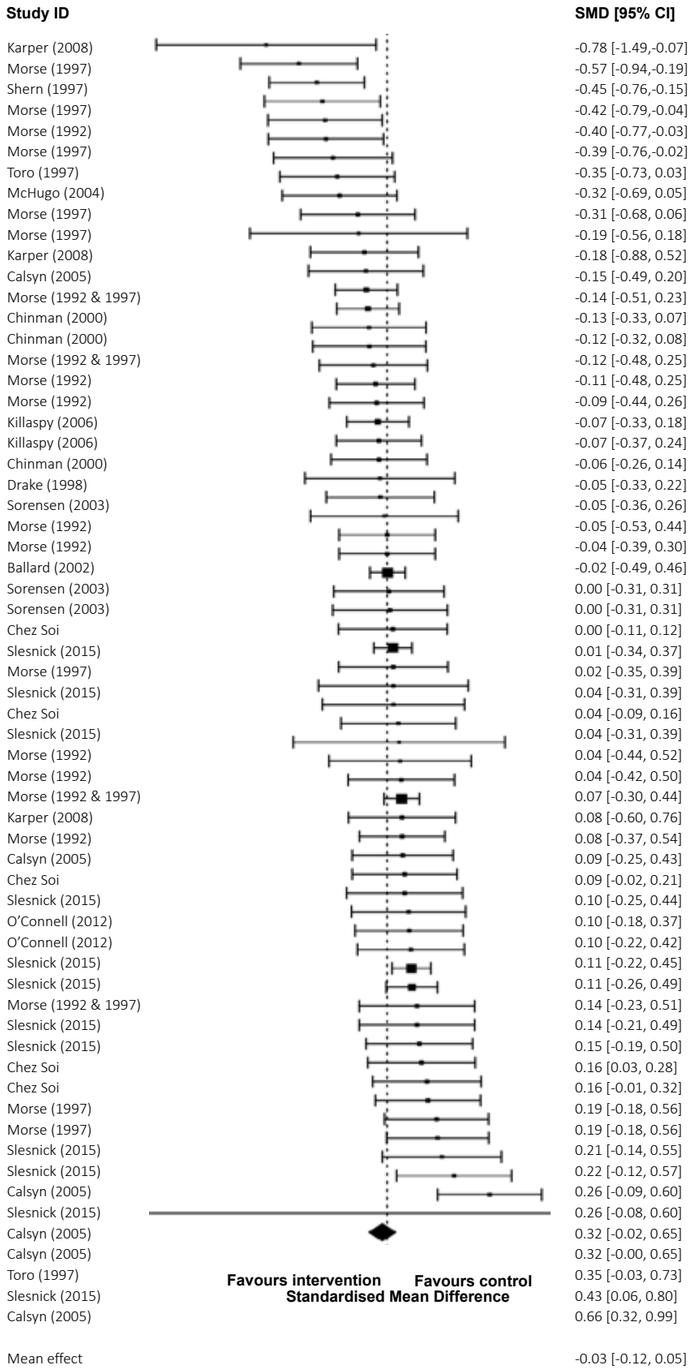
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
O'Toole (2018)	H-PACT - Homeless patient aligned care team	On-site housing assistance, open access capacity to facilitate access, specialised staff training, on-site services and incorporation of homeless specific protocols.	Availability
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	HUD VASH: intensive case management plus rent subsidy vouchers ICM: Intensive case management only	Availability
Slesnick (2015)	Community Reinforcement Approach Motivational Enhancement Therapy	Community Reinforcement Approach is an operant-based therapy with the goal to help individuals restructure their environment. Motivational Enhancement Therapy assumes that the responsibility and capability for change lie within the client and need to be evoked (rather than created or instilled).	Availability (for both intervention)
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Toro (1997)	DEPTH- Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

Mental health

To explore the impact of access interventions on mental health, 62 effect sizes from 15 studies were included in a meta-analysis.

A range of self-report measures were used across studies to assess different components of participants' mental health including for example anxiety, depression and coping. The overall mean effect -0.03 (SE=0.042, p=0.478, df=13.3) indicates a very small decrease in mental health symptoms (i.e. an improvement in mental health) for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.12 (a larger reduction in mental health symptoms) or 0.05 (a very small increase in mental health symptoms) would also be consistent with the data reported here. Figure 8 illustrates the range of individual effect sizes included in the analysis.

Figure 8: Forest plot of effect sizes for mental health



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The 15 interventions represented in the analysis above are briefly described in Table 9. All of the interventions aimed to increase the availability of services with three also aiming to improve service acceptability (Chinman, 2000; Shern, 2007; Sorenson, 2003). Five interventions also included additional housing in their provision (Chez Soi; McHugo, 2004; O'Connell, 2012; Shern, 19997; Toro, 1997) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 9: Description of the interventions included in the mental health meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Calsyn (2005)	ACT, Integrated ACT (IACT) New Integrated ACT (NIACT)	Assertive community treatment including provision by substance use specialists.	Availability
Chez Soi	Chez Soi - Housing First	A Housing First model providing permanent, private housing units to qualifying individuals, including clients' choice.	Availability
Chinman (2000)	Consumer provided case management	Case management provided by staff experience of treatment for a serious mental illness similar to those of the clients served by the programme.	Availability and Acceptability
Drake (1998)	ACT vs Standard case management (SCM)	Assertive community treatment vs standard case management.	Availability
Karper (2008)	Coordination of care	Care coordination included a coordinated treatment plan, crisis triage, transportation coordination, and treatment liaison.	Availability
Killaspy (2006)	ACT	Assertive community treatment.	Availability
McHugo (2004)	Integrated housing services programme	Intensive case management and housing services through dedicated teams. Both scattered-site and congregate housing models were used.	Availability
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Assertive community treatment and intensive case management as well as traditional mental health outpatient services and a drop in centre.	Availability
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker.	Availability (for both ACT interventions)
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	HUD VASH: intensive case management plus rent subsidy vouchers ICM: Intensive case management only	Availability

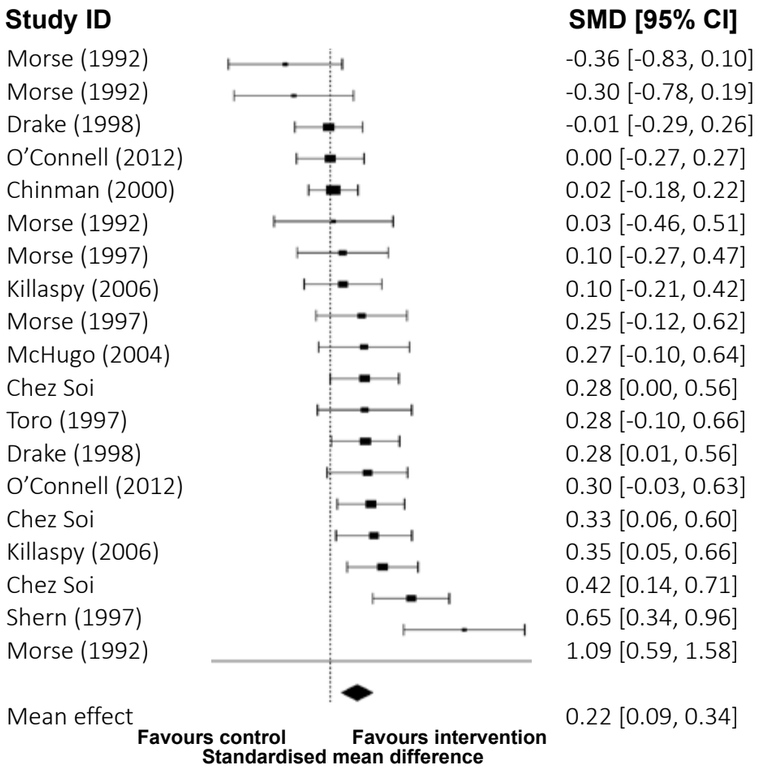
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Shern (1997)	New York Street Study - specialised housing New York Street Study 'experimental' San Diego Intensive Case Management Traditional CM with or without section 8 Boston Evolving Consumer Households vs independent living New York CTI vs control	Congregate consumer-run housing and intensive case management (in two different sites) was compared to independent living.	Availability and Acceptability
Slesnick (2015)	Community Reinforcement Approach Motivational Enhancement Therapy	Community Reinforcement Approach is an operant-based therapy with the goal to help individuals restructure their environment. Motivational Enhancement Therapy assumes that the responsibility and capability for change lie within the client and need to be evoked (rather than created or instilled).	Availability (for both intervention)
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

Quality of life

To explore the impact of access interventions on quality of life, 19 effect sizes from ten studies were included in a meta-analysis.

Quality of life was most frequently measured using a self-report assessment during a structured interview with the participant (using for example the Quality of Life Interview, QOLI-20) or a measure of life satisfaction and/or self-esteem. The overall mean effect 0.22 (SE=0.045, p=0.002, df=7.5) indicates a moderate increase in self-reported quality of life for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect as small as 0.09 or as large as 0.34 would also be consistent with the data reported here. Figure 9 illustrates the range of individual effect sizes included in the analysis.

Figure 9: Forest plot of effect sizes for quality of life



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The ten interventions represented in the analysis above are briefly described in Table 10. All of the interventions aimed to increase the availability of services with two aiming to also improve service acceptability (Chinman, 2000; Shern, 2007). Five interventions also included additional housing in their provision (Chez Soi; McHugo, 2004; O'Connell, 2012; Shern, 19997; Toro, 1997) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 10: Description of the interventions included in the quality of life meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Chez Soi	Chez Soi - Housing First	A Housing First model providing permanent, private housing units to qualifying individuals, including clients' choice.	Availability
Chinman (2000)	Consumer provided case management	Case management provided by staff experience of treatment for a serious mental illness similar to those of the clients served by the programme.	Availability and Acceptability
Drake (1998)	ACT vs Standard case management (SCM)	Assertive community treatment vs standard case management.	Availability
Killaspy (2006)	ACT	Assertive community treatment.	Availability
McHugo (2004)	Integrated housing services programme	Intensive case management and housing services through dedicated teams. Both scattered-site and congregate housing models were used.	Availability
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Assertive community treatment and intensive case management as well as traditional mental health outpatient services and a drop in centre.	Availability

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker.	Availability (for both ACT interventions)
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	HUD VASH: intensive case management plus rent subsidy vouchers. ICM: Intensive case management only.	Availability
Shern (1997)	New York Street Study - specialised housing New York Street Study 'experimental' San Diego Intensive Case Management Traditional CM with or without section 8 Boston Evolving Consumer Households vs independent living New York CTI vs control	Congregate consumer-run housing and intensive case management (in two different sites) was compared to independent living.	Availability and Acceptability
Toro (1997)	DEPTH- Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

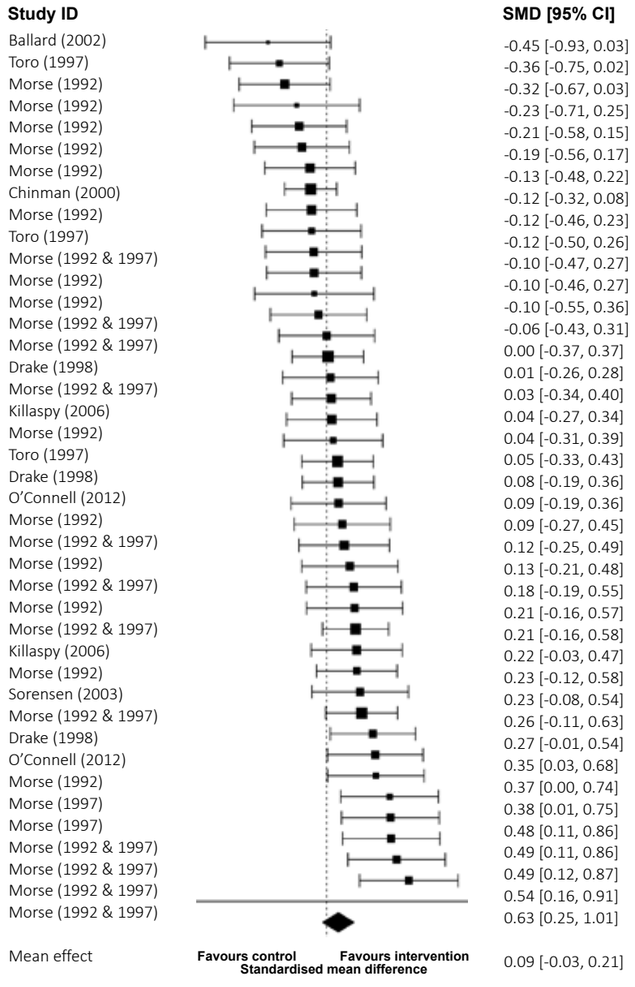
Social support network

To explore the impact of access interventions on participants' perceived levels of social support 41 effect sizes from nine studies were included in a meta-analysis.

Social support and the quality of participants' social network was assessed across studies by asking participants a variety of questions about who they socialise with, how often, the size of their social network, how often they experienced conflictual relationships within their social network and/or how often they experienced alienation.

The overall mean effect 0.09 (SE=0.058, p=0.138, df=7.89) indicates a small increase in social support for those receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect as small as -0.03 (a very small decrease in social support) or as large as 0.21 (a moderate increase in social support) would also be consistent with the data reported here. Figure 10 illustrates the range of individual effect sizes included in the analysis.

Figure 10: Forest plot of effect sizes for social support network



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to risk of bias or the age of study participants included in the analysis. Studies with higher risk of bias reported effects, on average, 0.32 of a standard deviation lower than the overall mean effect (p=0.008). Neither the age of study participants, nor whether the intervention was delivered alongside housing provision was a significant predictor of effects for this outcome. Figure X illustrates the range of effect sizes included in this meta-analysis.

Description of the included interventions

The nine interventions represented in the analysis above are briefly described in Table 11. All of the interventions aimed to increase the availability of services with two aiming to also improve service acceptability (Sorensen, 2003; Chinman, 2000). Two interventions also included additional housing in their provision (O'Connell, 2012; Toro, 1997) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 11: Description of the interventions included in the social support meta-analysis

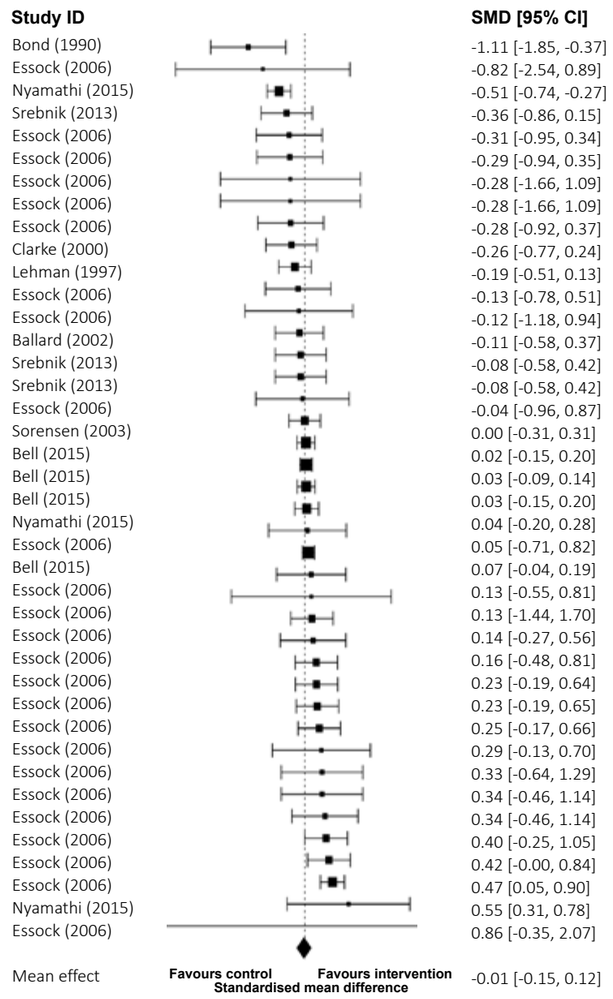
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Chinman (2000)	Consumer provided case management	Case management provided by staff experience of treatment for a serious mental illness similar to those of the clients served by the programme.	Availability and Acceptability
Drake (1998)	ACT vs Standard case management (SCM)	Assertive community treatment vs standard case management.	Availability
Killaspy (2006)	ACT	Assertive community treatment.	Availability
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Assertive community treatment and intensive case management as well as traditional mental health outpatient services and a drop in centre.	Availability
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker.	Availability (for both ACT interventions)
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	Assertive community treatment with and without a paraprofessional community worker.	Availability
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

Arrests and incarceration

To explore the impact of access interventions on arrests and incarcerations, 40 effect sizes from nine studies were included in a meta-analysis.

A number of studies recorded the number of arrests, incarcerations and reincarcerations experienced by participants. Frequently administrative data was used, however the 'legal status' subscale of the Addiction Severity Index (McLelland, 1992), which measures previous interactions with the justice system including arrests and incarceration, was also occasionally used to assess this outcome. The overall mean effect -0.012 (SE=0.068, p=0.834, df=4.78) indicates an extremely small decrease in arrests and incarcerations for participants receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.15 (a small to moderate decrease in arrests and incarceration) or 0.12 (a small increase in arrests and incarceration) would also be consistent with the data reported here. Figure 11 illustrates the range of individual effect sizes included in the analysis.

Figure 11: Forest plot of effect sizes for arrests and incarcerations



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to risk of bias or the age of study participants included in the analysis. Studies with higher risk of bias reported effects, on average, 0.22 of a standard deviation higher than the overall mean effect (p=0.042). Neither the age of study participants, nor whether the intervention was delivered alongside housing provision was a significant predictor of effects for this outcome. Figure 11 illustrates the

range of effect sizes included in this meta-analysis.

Description of the included interventions

The nine interventions represented in the analysis above are briefly described in Table 12. All of the interventions aimed to increase the availability of services with three aiming to also improve service acceptability (Clarke, 2000; Sorensen, 2003; Srebnik, 2013). One intervention also included additional housing in their provision (Srebnik, 2013) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 12: Description of the interventions included in the arrests and incarcerations meta-analysis

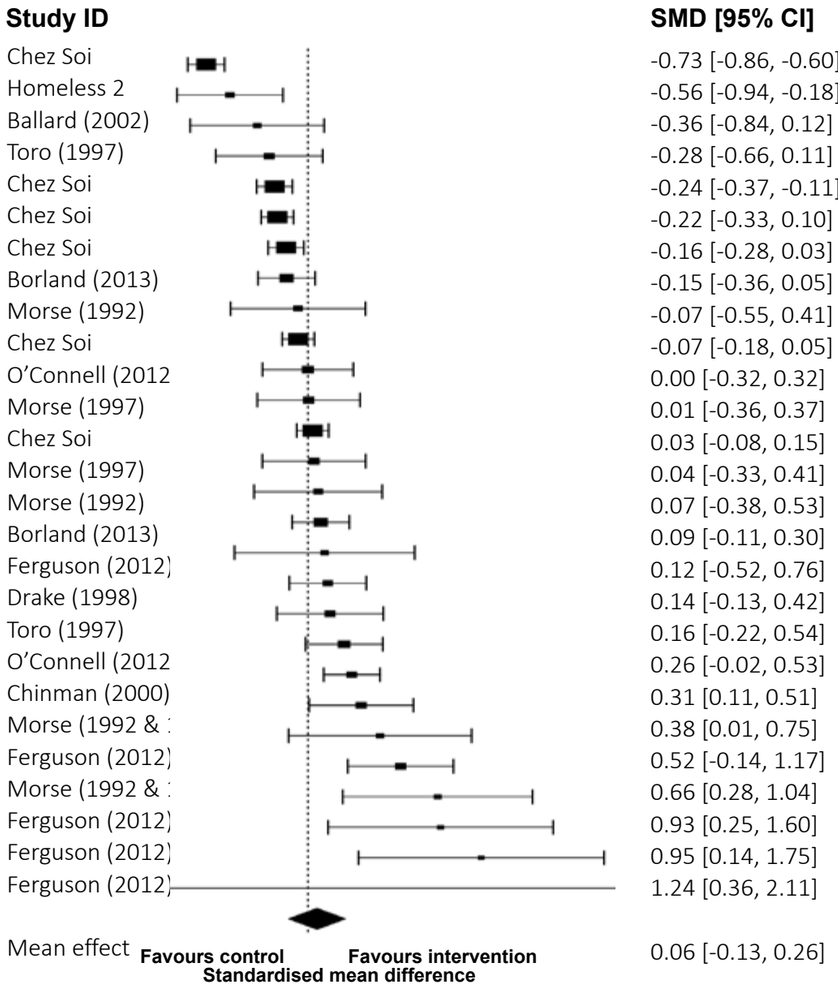
Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Bell (2015)	KCCP Intervention (King County Care Partners)	Intensive care management from a team with drug/alcohol treatment training.	Availability
Bond (1990)	ACT	Assertive community treatment.	Availability
Clarke (2000)	Consumer ACT Non consumer ACT	Assertive community treatment with or without staffed by mental health 'consumers' with experience major mental illness.	Availability and Acceptability (for Consumer ACT only)
Essock (2006)	ACT	Assertive community treatment.	Availability
Lehman (1997)	ACT	Assertive community treatment.	Availability
Nyamathi (2015)	Peer coaching with or without Nursing Case Management	Peer coaching over eight weeks to support reintegration into the community following incarceration/residential drug treatment. Nurse case management focused on health promotion, reducing risky drug and sexual behaviours and encouraging adherence to treatment.	Availability
Sorensen (2003)	Brief Contact Vs. Case Management	Brief Contact - education about reducing the risk of HIV transmission, HIV services, and referrals to community-based services. Case management - included elements of service brokerage and counselling. Case managers were paraprofessionals, former consumers of HIV or substance use treatment services.	Availability and Acceptability
Srebnik (2013)	Begin at Home (BAH),	Housing First model characterised by rapid placement from homelessness directly into permanent housing, supported by assertive on-site engagement and services.	Availability and Acceptability

Employment

To explore the impact of access interventions on employment outcomes, 27 effect sizes from 11 studies were included in a meta-analysis.

Across the studies included in this analysis employment outcomes included, for example, the number of days or hours worked per week, average monthly income and/or the proportion of participants employed at the end of the study. The overall mean effect 0.065 (SE=0.097, p=0.519, df=10.6) indicates a very small improvement in employment status for participants receiving the intervention programme. This is the best estimate of effect given the available evidence however there is uncertainty around this estimate as indicated by the 95% confidence interval, which means that an effect of -0.13 (a small decline in employment status) or 0.26 (a moderate improvement in employment status) would also be consistent with the data reported here. Figure 12 illustrates the range of individual effect sizes included in the analysis.

Figure 12: Forest plot of effect sizes for employment



Heterogeneity

Subgroup analysis (using meta regression) was conducted to explore whether there were differences in effect sizes according to study risk of bias, the age of study participants or whether the intervention was delivered alongside housing provision. None of these variables were a significant predictor of effect size for this outcome.

Description of the included interventions

The 11 interventions represented in the analysis above are briefly described in Table 13. All of the interventions aimed to increase the availability of services with one aiming to also improve service acceptability (Chinman, 2000). Three interventions also included additional housing in their provision (Chez Soi; O'Connell, 2012; Toro, 1997) whilst the remaining interventions did not include housing. The majority of interventions adopted either assertive community treatment or other case management models.

Table 13: Description of the interventions included in the arrests and incarcerations meta-analysis

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Ballard (2002)	Community Based Counselling Programme (CBCP)	Outreach counselling including services across a range of areas: mental health, problematic substance use, health care, education, employment, housing, childcare, transportation and legal.	Availability
Borland (2013)	Case management. Official name is the YP trial.	Standard case management.	Availability
Chez Soi	Chez Soi - Housing First	A Housing First model providing permanent, private housing units to qualifying individuals, including clients' choice.	Availability
Chinman (2000)	Consumer provided case management	Case management provided by staff experience of treatment for a serious mental illness similar to those of the clients served by the programme.	Availability and Acceptability
Drake (1998)	ACT vs Standard case management (SCM)	Assertive community treatment vs standard case management.	Availability
Ferguson (2012)	Individual Placement and Support Model (IPS)	Integrated vocational and mental health treatment services, competitive employment training and benefits counselling.	Availability

Study ID	Name of Intervention	Brief description of the intervention	Access Intervention Type
Homeless 2	Day treatment +	Day treatment including lunch and transportation to and from shelters. Day treatment included, for example, AIDS education, relapse prevention training, goal development, assertiveness training, recreation and relaxation.	Availability
Morse (1992)	Continuous treatment, drop in centre, outpatient treatment	Assertive community treatment and intensive case management as well as traditional mental health outpatient services and a drop in centre.	Availability
Morse (1997)	ACT with community workers ACT only	Assertive community treatment with and without a paraprofessional community worker.	Availability (for both ACT interventions)
O'Connell (2012)	Housing and Urban Development–Veterans Affairs Supported Housing (HUD-VASH) Intensive Care Management (ICM)	HUD VASH: intensive case management plus rent subsidy vouchers ICM: Intensive case management only	Availability
Toro (1997)	DEPTH-Demonstration Employment Project - Training and Housing	Linkage to financial aid, housing support, counselling for substance problems, job training, etc. addressing clients' immediate tangible needs.	Availability

Summary

Table 14 provides a summary of each outcome and its associated effect. The results show that access programmes can improve a range of outcomes for individuals who are homeless or at risk of homelessness. Notably the largest, positive impact was observed for the primary outcome whereby participants who received the intervention programme showed a moderate increase in service utilisation compared to those who received standard care.

There were also observable and positive effects on secondary outcomes including improved quality of life, and to a lesser extent, enhanced social support and a reduction in visits to the emergency department. It is important to note that it is not possible to know the mechanism through which these secondary outcomes improved, and we cannot conclude that it is a result of increased access to services. Many of these interventions include other components not necessarily associated with improving access to services (e.g. those that also provide housing) which may have separate, direct bearings on these other outcomes. However, it is not possible to decompose the relative impact of each of the elements of these interventions.

The moderator analyses showed that methodological quality sometimes affected the magnitude of the study effect size. However, there were only extremely small differences in effect sizes between interventions that provided housing alongside support vs support only. Similarly, intervention effects did not vary by age of participant and so no concrete conclusion can be drawn with regards to the importance of these factors as moderators of effects.

Table 14: Summary of effects for each outcome

Outcome	No. of effect sizes	Effect size	95% CI	Description	Notes
Primary outcome					
Access to services	67	0.300	0.12, 0.48	Moderate increase in access to services	
Secondary outcomes					
Hospitalisation	24	0.020	-0.10, 0.14	Extremely small increase in hospitalisation	
Emergency Department visits	11	-0.100	-0.39, 0.19	Small decrease in ED visits	
Physical health	10	0.001	-0.15, 0.15	Negligible change in physical health	
Drug and alcohol use	81	0.030	-0.12, 0.17	Extremely small increase in drug and alcohol use	
Mental health	62	-0.030	-0.12, 0.05	Extremely small decrease in mental health symptoms	
Quality of life	19	0.220	0.09, 0.34	Moderate improvement in quality of life	
Social support network	41	0.090	-0.03, 0.21	Small improvement in social support network	Studies with higher risk of bias reported effects, on average, 0.32 of a standard deviation lower than the overall mean effect

Outcome	No. of effect sizes	Effect size	95% CI	Description	Notes
Arrests and incarcerations	40	-0.012	-0.15, 0.12	Extremely small decrease in arrests and incarceration	Studies with higher risk of bias reported effects, on average, 0.22 of a standard deviation higher than the overall mean effect.
Employment status	27	0.065	-0.13, 0.26	Extremely small improvement in employments status	

Process and Implementation Data Synthesis

Background and aims

The second element of the current review involved synthesising qualitative data extracted from process evaluations included in CHI's implementation and process evaluation EGM. The purpose of this synthesis was to complement the quantitative evidence reported above and provide a better understanding of what factors influence programme effectiveness. It focused on the following question: What implementation and process factors influence intervention delivery?

Analytic approach

The typology used to construct the original EGM (White, et al., 2018) was developed using a grounded theory approach piloted on 25 papers initially. This iterative process was combined with expert knowledge, ensuring that the broad concepts identified would adequately capture all papers included in the map. From the piloted typology, robust categories were created to include all process evaluations found during the searching period. The team in Heriot-Watt University coded each process evaluation under five main analytical categories, or levels of influence, namely: contextual factors, policy makers/funders, programme administrators/managers/implementing agencies, staff/case workers and recipients of the programme. Using a framework synthesis, it is these five analytical categories that have been used to synthesise and organise the data analysis reported in the following section.

In this way, the EGM provided an initial framework around which to synthesise the data; a framework that, for the most part, fits well. This decision also ensured that the EGM structure could be used to inform the synthesis process but also provided the team with a degree of flexibility. It is important to remember however, that because the effectiveness EGM and the process and implementation EGM were (necessarily) constructed separately, this means that the qualitative process evaluations in this section are not related directly to the specific interventions reported in the meta-analyses above. This notwithstanding the salient points related to implementation of access programmes more generally have been extracted and synthesised.

Framework synthesis is an approach that originates from a process of analysing primary research data to address policy concerns. The background theoretical and empirical literature help create an understanding of the issue into an initial conceptual framework, which develops iteratively as new data are incorporated and themes are derived from the data. This process was carried out in collaboration with researchers and academics in Heriot Watt University and the Campbell Collaboration (White et al., 2018). This synthesis method presents an opportunity to use a scaffold against which findings from the different components may be brought together and organised (Carroll et al., 2011). Its flexibility captures new understanding as data are incorporated into the framework.

Framework synthesis comprises five methodological stages (presented in conjunction with the systematic review process in the below figure):

- Familiarisation
- Framework Selection
- Indexing
- Charting
- Mapping and Interpretation

These stages are often overlapping and are be revisited throughout the process.

The first is the familiarisation stage in which a reviewer becomes familiar with current issues and ideas about the topic, by drawing iteratively on a variety of sources (Booth & Carroll, 2015). This leads to the second stage: framework selection where an initial framework is chosen, which might be a conceptual or policy framework, logic model, causal chain or established

theory that might explain the issue (Bruton et al., 2020). During the third indexing stage, studies are searched for, screened and data extracted using the initial conceptual framework. Much of this work was carried out in the development of the Implementation issues EGM (White et al., 2018). Here, studies are sorted to determine their relevance to the review questions and to identify their main characteristics. During this stage, the Campbell UK and Ireland team screened the process evaluations for relevance to the review. During the fourth charting stage, the main characteristics of each study were analysed by grouping characteristics into categories and deriving themes directly from those data (Brunton et al., 2020). At this stage, a process of purposive sampling (Booth et al., 2016) was completed by Campbell UK and Ireland due to the available team expertise and resources. This purposive sample endeavoured to include process evaluations spanning geography, targeted populations and types of intervention in order to exhibit an accurate representation of accommodation programmes available. The selected process evaluations presented the most 'rich' and 'thick' data (Booth et al., 2016) from the studies included in the map. At this stage, Campbell UK and Ireland synthesised much of the available data from the selected studies against the original agreed framework embedded in the EGM. While the total number of studies identified as relevant to access was 111, ten were chosen in line with current guidance and the model presented previously, thus the intention of this synthesis is to capture data from a range of populations and jurisdictions implementing interventions and strategies to improve access to services. During the final stage of the mapping and interpretation stage, the derived themes were considered in light of the original research questions (Brunton et al., 2020) and in this case, policy implications. This stage was completed in collaboration with content experts who could consider these themes in light of the available empirical and theoretical literature.

In addition to the qualitative synthesis of process studies (described above) we looked again at the effectiveness studies included in the current review (and reported in the previous section) in order to extract any process data that may have been reported. Little process data were reported, however, where reported we noted any potential implementation issues that may provide some additional insight into how these may influence the effectiveness of the intervention and highlight where these influences converge or diverge from the synthesised qualitative evidence. This is presented in a separate section below, for ease of understanding and to highlight themes that do not fit into the original framework created for the EGM but are nonetheless useful. The information included should be used to supplement the data extracted from the process evaluations adding further insights into implementation factors that may affect the effectiveness of an access programme.

Results

Included papers

On 10th May 2019, 292 process evaluations were downloaded from the implementation and process EGM. Title and abstract screening of these evaluations for inclusion in this review was undertaken independently by the review team and 111 papers were identified as relevant to access to health and social care service programmes for individuals experiencing or at risk of experiencing homelessness. Papers that considered a wide variety of factors from legislation and housing markets to perceptions held by services users were initially viewed for full text screening. From the 111 papers related to access that were reconciled, a purposive sample of 10 papers were selected for synthesis to create a manageable and rich dataset: McCabe et al. (2011), Cunningham et al. (2013), Hayden et al. (2011), Gomez-Bonnet et al. (2013), Hennessy et al. (2005), Johnsen and Sosenko (2012), Mason et al. (2015), Pleace and Bretherton (2017), Tull et al. (2010) and Riley et al. (2011). See Tables 15 and 16 for a description of the included studies and interventions.

One evaluation focuses on veterans accessing employment and health services after discharging from the armed forces (Cunningham et al., 2013). One of the selected studies concentrates on families with a female single parent accessing appropriate accommodation and services (Tull et al., 2010). One evaluation focus on children (McCabe et al., 2011) and one other on young people as a target group (Hennessy et al., 2005). Johnsen &

Sosenko (2012) specifically targets central and Eastern European migrants experiencing homelessness. The other evaluations target those who are currently sleeping rough or have a history of homelessness and are vulnerable to it. Eight of the selected studies are based on interventions conducted in the United Kingdom, one in the USA and one in Australia. All evaluations took place between 2005 and 2017. These studies describe the factors that have acted as both facilitators and barriers to those who are trying to access both health and a range of other social services.

There is no overlap between the included studies in the effectiveness synthesis and the selected implementation studies as many of these did not have a published process evaluation. However, any implementation information that is available in the effectiveness studies has been used to supplement the data extracted and synthesised from the included process evaluations. Nonetheless, this synthesis endeavours to offer insights into factors that more generally may influence the effectiveness of an intervention focused on access programmes. Additionally, there can also be specific and significant challenges to successful access among discrete populations and we draw out any evidence that suggests particular barriers and facilitators for specific groups of people.

Quality appraisal

The quality appraisal of the selected process evaluations was carried out using the tool developed by White and Keenan (2019) in collaboration with CHI. This tool assesses the quality of each of the ten process evaluations by asking a series of questions regarding methodology, data analysis and usefulness of findings. This section provides a synopsis of the methodological quality of the process evaluations included in the synthesis that follows.

The quality of the process evaluations varied across sectors, where they were published and by whom. None of the evaluations were linked to an effectiveness study in this review. However, in the context of assessing how these evaluations affect the implementation of access programmes, all provided relevant recommendations for future programmes.

Five studies presented clear research questions that the evaluation sought to explore, whilst three others presented a series of aims that they intended to achieve. Only two studies did not present any research questions or hypotheses; this may be a result of the succinct nature of the reports and their intended audiences.

Only one of the included studies discussed a recognised qualitative research methodology, such as phenomenology or the use of case studies. Most of the studies did provide some description of data collection methods, such as semi structured interviews, survey data and focus groups with study participants, staff and stakeholders. The methods reflected the researchers' desire to collect and collate rich data from service users and staff implementers about factors that provide insight into how and why access programmes might work.

The process of recruitment was discussed fully in four of the studies, with all studies reporting their eligibility criteria. Although all evaluations were focused on factors influencing the accessibility of services such as health, training and employment for those vulnerable to homelessness, some evaluations were clear that their intake and referrals included people who were not homeless (but may have been previously). Although these data were generally reported separately, this does reflect the wide scope of service users that many of these organisations need to accommodate. Only two of the studies discussed ethical considerations in any detail. Four of the evaluations, however, do acknowledge the issue of selection bias of participants due to their willingness to become involved in the research.

None of the studies included a control group to compare outcomes against. Some evaluations discussed the ethical issues of including a control group with no access to services and the implications of this.

In three of the evaluations data analysis was fully described, using an approach that seemed systematic and sufficiently rigorous. Two studies partially described this process, however, five of the evaluations did not describe a rigorous or systematic analysis.

Six of the included studies presented a clear list of recommendations that were based on the data collected; another study described this partially. These recommendations provided valuable insights into what worked, what did not and why for managers, staff and service users implementing and availing of the access programme. It is these insights that are presented as implementation factors within levels of influence in this report and will be useful to implementers of homelessness programmes in the future.

The process evaluations and interventions described in Tables 15 and 16 are representative of the evaluations included in the Implementation EGM but also reflect the holistic nature of many of the interventions included in the quantitative results. Although accessing sustainable healthcare is important for many who are homeless, interventions addressing this issue usually seek to enhance access to other social services and accommodation. More intensive forms of case management (described in the included studies of the quantitative results) tend to be more encompassing of the service users' needs as a whole, not just those related to health.

Table 15. Characteristics of included process and implementation studies

Study Name	Name of intervention	Location	Setting	Population	Access intervention type
Cunningham (2013)	Veterans Homelessness Prevention Demonstration Evaluation	USA	Veteran Affairs medical centres	Military (armed forces) Veterans	Affordability and acceptability
Gomez-Bonnet (2013)	NSW Homelessness Action Plan	Australia	Not specified	People at risk of homelessness, people who have a history of homelessness or people who are homeless.	Availability and affordability

Study Name	Name of intervention	Location	Setting	Population	Access intervention type
Hayden (2011)	Enhanced Housing Options Trailblazer Programme	UK	Various such as job centres, mental health services, prison	Hard-to-reach or vulnerable groups to access housing and/ or training and employment	Availability and affordability
Hennessy (2005)	Merseyside Resettlement programme	UK	Hostel	Young people	Availability
Johnsen & Sosenko (2012)	Crisis Pre-Employment Programme	UK	Not specified	Street homeless central and Eastern European migrants	Availability
Mason (2015)	London homelessness social impact bond	UK	St Mungo's Broadway and Thames Reach contracted to carry out intervention	Individuals experiencing street homelessness'	Availability
McCabe (2011)	Shelter Children's Services	UK	Not specified	At risk children	Availability
Pleace & Bretherton (2017)	Crisis Skylight	UK	Not specified	Individuals who are homeless or at risk of homelessness	Availability
Riley (2011)	Single Homeless Enterprise Project	UK	Hostels	Individuals who are homeless or at risk of homelessness	Availability

Improving access to health and social care services for individuals experiencing, or at risk of experiencing, homelessness

Study Name	Name of intervention	Location	Setting	Population	Access intervention type
Tull (2010)	The Skid Row Families Demonstration Project	USA	Not specified	Homeless, female-headed households with complex, co-occurring problems	Availability

Table 16. Description of interventions

Study name	Brief description of intervention	Theory of change	Length of intervention	Dosage	Personnel delivering intervention	Participants
Cunningham (2013)	VHPD provided short- to medium-term housing assistance (up to 18 months), including security deposits, rent, rental arrearages (up to 6 months back rent), moving cost assistance, and utilities; case management; and referrals to community-based services and supports. Service providers could also use VHPD funds for childcare, credit repair, and transportation expenses. In addition to providing these supports, VHPD intended to connect veterans to needed health services through the VA's healthcare system and employment services through local workforce agencies, so the program could provide veterans with a more comprehensive set of supports and better prepare them to sustain housing on their own.	Veterans will be less at risk of homelessness if enabled to access services and employment	Up to 18 months	Not specified	Case managers	509 enrolled, 424 completed baseline, 315 completed 6 month follow up
Gomez-Bonnet (2013)	This intervention provides housing that is accessible in a timely way, appropriate to the person's needs, affordable, of secure tenure and non-contingent on treatment. It also provides case management that is persistent, reliable, intimate and respectful and delivers comprehensive practical support of individually determined length. The service provides linkages to other services/ supports that the client needs.	Flexible and holistic case management will provide housing stability, improve access to and provision of services	Between 9 and 27 weeks	Weekly meetings	Case workers	467 clients
Hayden (2011)	Each Trailblazer provides different services but fall into 3 broad groups: -helping hard-to-reach or vulnerable groups to access housing and/or training and employment -helping existing tenants to access work or training -finding solutions for existing tenants in unsuitable housing, such as overcrowded households, or helping under-occupied tenants to downsize	Flexible and tailored support and enhancing services will enable clients to access employment training and health care more easily.	Six months	Not specified although one to one meeting available throughout	Trailblazer managers	274 interviewed initially
Hennessy (2005)	A youth hostel employed a full-time member of staff to co-ordinate the resettlement service into independent accommodation. The staff member also provided assistance when participants moved, applied for benefits or jobs.	Providing a resettlement service at the hostel will enable clients to find permanent accommodation and access to services	At least 4 weeks	None specified	Resettlement service	15 young people
Johnsen & Sosenko (2012)	The programme offers tailored one-to-one support, delivered by job coaches, who typically meet with service users once or twice per week. It also facilitates access to a range of on-site training courses, and/or supports users to access training elsewhere as appropriate. Additional forms of support include a job club, mock interviews and financial assistance for travel, clothing or equipment necessary to enhance users' employability. Job coaches also regularly support users in areas that are not directly related to employment, such as facilitating access to housing or health services and/or assisting with welfare benefit applications.	Improve the skills and employability of clients to make employment, health and welfare benefits more accessible	Average of 10 weeks	Once or twice a week	Job coaches	398 service users
Mason (2015)	Two delivery providers (St Mungo's Broadway and Thames Reach) provide a personalised, flexible approach delivered by keyworkers that helps them access existing provision and achieve sustained, long-term positive outcomes such as stable housing, employment and healthcare.	Enables cohort to access appropriate services using personalised recovery pathways into sustained and positive outcomes	Between 6 and 18 months	None specified	St. Mungos Broadway and Thames Reach	831 individuals experiencing street homelessness, 25 interviewed

Study name	Brief description of intervention	Theory of change	Length of intervention	Dosage	Personnel delivering intervention	Participants
McCabe (2011)	The service provides tailored packages of support for homeless children including: -one-to-one tailored support to child -advice, information, signposting -group work/user-involvement activities -multi-agency working and advocacy -financial, in-kind support and charity applications -family activities/parental support.	Improve outcomes for at risk children by improve access to housing, health and education services	Between 4 and 6 months	None specified	Shelter Children's services	47 young people, 22 families interviewed
Pleace & Bretherton (2017)	Crisis Skylight services provide arts-based activities, basic skills education, training, support with housing and health and extensive one-to-one support designed to help single homeless people progress towards paid work. Crisis Skylight also provides extensive access to volunteering opportunities and facilitates access to further and higher education and professional training.	Services provide arts-based activities, skills education, training, support with housing and health and extensive one-to-one support designed to help single homeless people progress towards paid work.	Up to a year	Classes once a week	Case managers	406 involved in interviews and focus groups
Riley (2011)	This project introduced three social enterprise to three hostels to train residents up in vocational and practical skills such as building and decorating in order to increase the employability and skills set of people vulnerable to homelessness.	Setting up a social enterprise will increase the employability of vulnerable and single homeless people, reduce their disadvantage and increase the community social cohesion where the project is delivered	Over 6 months	4-5 times a week	Project manager	46 interviews with project staff and clients

Study name	Brief description of intervention	Theory of change	Length of intervention	Dosage	Personnel delivering intervention	Participants
Tull (2010)	This intervention is housing-based intervention that linked affordable permanent housing in the community at-large with individualised, time-limited case management services which increased economic wellbeing through employment.	Providing an innovative model of services integration involving multiple public agencies and a nonprofit agency, as well as a flexible and customized housing-based intervention can enable high-risk and/or families with long histories of homelessnessto access services more readily.	12 months	Weekly telephone calls	Skid Row managers	295 families interviewed

The following analysis takes each of the five main analytical categories/ levels of influence (described above and reflected in the process and implementation EGM) in turn, namely:

1. contextual factors,
2. policy makers/funders,
3. programme administrators/managers/implementing agencies,
4. staff/case workers, and
5. recipients of the programme.

Contextual Factors

Due to circumstances associated with living conditions, people who are homeless or at risk of becoming homeless often find it difficult to access services such as health care, state benefits and employment services. This is often as a result of many different factors, such as not having a permanent home address, not owning or having access to a telephone or having a range of co-morbidities (problematic substance use, psychological issues and other vulnerabilities) that can create challenges when interacting with others. Interventions that seek to improve access to health and social care services for people who are homeless often encounter contextual challenges that affect the overall success of the programme and influence outcomes for individuals receiving the programme, for example housing and labour markets, the welfare system and current legislation.

Policy makers and funders

Framework provision (policies and guidelines)

McCabe et al. (2011) reported that providing a framework in the form of evidenced policy and guidelines to programme coordinators was key to the success of their programme, ensuring that access requirements were met. Shelter Children's Services' policy work was rooted in the practical experience of locality-based services, giving Shelter credibility and access to valuable case study material that they used to develop good practice resources, based on evidence from 'on the ground' delivery of services. This shared practical experience in the form of case studies can be used to develop strategies that have worked in the past and explore why an intervention or component of an intervention has perhaps not worked previously. Similarly, St. Mungos Broadway (Mason et al., 2015) described how the detailed reporting of the previous delivery of services and forecasting (required for funders) of the critical challenges encountered, led to an increased interest in how wider service delivery is monitored and how a focus on outcomes can be achieved by investors. The accurate recording of the delivery of these social services can not only inform future strategic policy, but this can be used on presentation to future investors on what works regarding significant social outcomes.

One funding component that benefitted Shelter Children's Services access to services was budget flexibility (McCabe et al., 2011). Staff were also able to negotiate with other agencies for funding grants to help families, or help them apply to charitable trusts, to help remove other practical barriers, such as travel costs for school attendance. Shelter Children's Services staff were not constrained by long decision-making chains, like some local authority services, and were therefore able to respond more quickly to target the needs of children and families in terms of accessing services. The flexibility described here, both in terms of funding and decision making, allowed staff to remove practical barriers, respond to new complex issues presented and offer other types of support that enabled participants to access services more easily.

Buy in from programme administrators/ managers/ implementing agencies (leadership, culture, priorities)

The culture of an access programme for people experiencing homelessness is dependent upon the buy in from programme managers or the agency implementing the intervention. Each of the provider organisations in these studies described the commitment and values of delivery staff, as central to the success of the intervention. To this end, the recruitment of individual champions at a local, regional and national level, to promote key messages from Shelter Children's Services (in addition to creating networks between champions) ensured that key issues remained on the agenda (McCabe et al., 2011). Gomez-Bonnet et al. (2013) similarly observe that these cross-referral networks across the homelessness service system are useful, particularly if the system is fractured before the intervention is implemented. In the case of the NSW Homelessness Action Plan, the lack of capacity of service providers to accept referrals and the limited number of services in the region to which people could be referred were primary referral barriers for healthcare and social service providers. Continued engagement with service providers was crucial in building these cross-referral routes from the fractured service system.

Buy-in from staff (commitment to programme)

When planning for an intervention that seeks to enable access to services for people experiencing homelessness, it is paramount to gain buy-in from staff implementing the programme. As Hayden et al. (2011) suggests, generally success is a function of the quality and commitment of specific staff members and programmes benefit from stability in staffing. In this evaluation, when the advisors (Hayden et al., 2011) were able to gain their clients' trust, they felt cared for and motivated to overcome their problems and achieve their targets.

Tull et al. (2010) provide an example of how they sought staff buy in. During the enrolment phase of the programme, L.A. County staff and supervisors (assigned to the Demonstration Project) met regularly with Beyond Shelter (project delivery) staff to discuss programme referrals. Weekly meetings entailed case reviews and discussions regarding integration of services from the County Departments and Beyond Shelter. Services were discussed for each family and an initial plan was established to ensure timely interventions from the various government departments. While many situations which otherwise would have been challenging were resolved (e.g. an interruption of a family's benefits) other situations were not effectively resolved due to systemic barriers to collaboration. This shows that although importance should be placed on staff commitment, there are often systemic issues beyond the capacity of, for example the project delivery team, that may need to be resolved first.

Aside from the financial assistance Cunningham et al. (2013) noted that some clients (armed forces veterans) said that the case management was helpful. They liked having someone to discuss what they were going through and in whom they could confide. Some programmes employed case managers who were themselves veterans, and other sites had specific peer-to-peer support positions embedded in the programme. A number of clients commented that having armed forces veterans as staff in the programme was beneficial and had value because they had a better understanding of their (clients') experiences and struggles. One armed forces veteran said, "The ideal situation for a person being a case manager would be someone who has walked in your shoes."

Buy-in from recipients (emotional acceptance of programme)

In order for an intervention to be truly successful, buy in from participants is needed. Tull et al. (2010) reported that for those who were initially resistant to accessing services, consistent monitoring and support from staff led to their eventual engagement and cooperation. Apprehension, fear of authority and the consequences of disclosure were eventually overcome for the majority of the families. What had changed for many of them, in addition to new consistency in their lives, was the realization that the Case Manager was there to provide support and assistance, and that actively participating in the case management services being offered to them could lead to moving into permanent housing.

Identification of recipient/ targeting mechanism

The process of identifying possible those who might avail of an access programme can significantly influence how accessible the service is. Cunningham et al. (2013) note that at the beginning of their programme, armed forces veterans found access difficult because they only learned of the programme after a time consuming and complicated search. However, as the programme became more established, it became apparent that word of mouth was an important strategy for informing veterans of the service, particularly those who were not engaged with Veteran Affairs (VA) or other service providers. This service became particularly useful to veterans who could not access the traditional VA healthcare services (for example, those with dishonourable discharges).

A key element of the Enhanced Housing Options programme (which sought to enhance access to key social services such as training, employment the benefits system) was that it should target, and help, people whose needs were not adequately addressed by traditional services (Hayden at al., 2011). Those targeted were often vulnerable and had a history of failure to benefit from available assistance. Others simply required different services from those usually on offer. However, there was considerable evidence of success in relation to clients who were tracked in eight Trailblazer programmes with a near doubling of the proportion of working aged individuals in work

by the time the tracking ceased. Given that getting people into employment generally took time, there is likely to have been continuing improvement after the end of the monitoring period where support could be maintained. Tackling unemployment and worklessness provided service users with a sense of purpose and readiness to re-enter the community, improving their self-esteem and confidence to access other social aspects of life they had previously missed out on.

Johnsen and Sosenko (2012) suggest that a number of staff and stakeholder interviewees noted that limited language skills made it difficult for migrants to access a number of services (including emergency health care) and, furthermore, restricted the ability of some migrants to interact with UK nationals in the workplace and other settings. Ongoing support with language was needed to promote migrants' service access, employability and community integration.

Referral route

A key point of access for managers and agencies is the policy for referral of participants. This can influence the degree of access to the service for clients as well as buy in from managers. Riley et al. (2011) report that the referral process for the Single Homelessness Enterprise Project (SHEP) was considered to be very successful by St Mungo's staff for a number of reasons. First, decisions were made quickly, meaning that when a client showed interest in the SHEP, their keyworker / Pathways to Employment worker could 'strike while the iron was hot' and ensure that enthusiasm shown by clients did not have time to wane before they started the programme. Continuous access to the scheme, and flexible start times to the programme, meant that, unlike with most external training courses, clients could access the programme when the time was right for them.

However, one of the main challenges in referring clients onto SHEP was ensuring that all staff were consistent in their understanding of which types of clients should be referred onto SHEP training programmes. It became apparent that St Mungo's staff had contrasting views as to the order in which support should be given and what clients might achieve by taking part in

the programme. Managers recommended ensuring the main aims of the programme are clear and understood by all those involved in the referral process.

The referral process should be carefully considered before it becomes rooted in policy. In the evaluation conducted by Gomez-Bonnet et al. (2013) clients could be referred to Mission Australia from a range of local agencies. Initially, self-referrals (clients referring themselves) were accepted, under the condition that the client had to be working with another agency. However, there were too many clients coming through the door; and the service felt that agency referrals provided a more thorough history of the client, enabling the service to offer better support. A considered approach with a well-defined route is needed to improve access to services for all.

Sufficiency/ adequacy of resources (space, time, staff, budget, appropriateness of services or facilities)

As with all interventions, the sustainability of the programme is dictated by the sufficiency and adequacy of the available resources. Most evaluators agree that approaches should be long term if possible, to ensure continuity for clients (Mason et al., 2015). For the London Homelessness Social Impact Bond (SIB) (Mason et al., 2015), clients who were ready to take the step towards training, volunteering or employment had to have a placement that was appropriate for them. As with other areas of delivery, providers described the need for a range of options available so that each client's pathway is appropriately tailored to them. Navigators (case managers in this intervention) offered practical and emotional support by accompanying clients to interviews, keeping in contact during placements or new positions and support with money management to build capacity for independent living. Supporting clients in this way, through supportive and individualised working relationships, created an effective strategy for improving outcomes and access to services, over unstable and intermittent case management contact and an intervention that was not individualised.

As Riley et al. (2011) describes, individuals who are homeless often experience a range of co-morbidities that also need to be addressed. Some

of those working in the social enterprise set up by SHEP still had addiction problems, and therefore it was felt that paying them with money could present a temptation at a critical point in their journey towards the open labour market. Therefore, payment was made in vouchers. This was deemed a success, and clients used their vouchers to pay for tools they would need to work or for further training to enhance their employability. This strategy ensured that clients were able to invest in their future employability rather than potentially re-enter a difficult cycle of addiction.

However, Riley et al. (2011) points to delays and difficulties in the initial implementation of the scheme. The project manager post was not filled until eight months after the project was due to begin. This was because of administrative delays and because St Mungo's were unable to recruit staff for SHEP until financial arrangements were complete. These recruitment delays can have major implications for intervention implementation therefore reducing access to programmes for people who need support when trying to exit homelessness.

One important barrier to accessing services is transport. Often people who are experiencing homelessness do not own their own vehicle, and public transport can be expensive. This is especially true for potential clients living outside of urban areas. Programme staff observed that clients in rural areas often did not have their own vehicles or had a vehicle in disrepair that they could not afford to fix, and they noted particular challenges serving these clients (Cunningham et al., 2013). When clients did not have their own transportation, case managers often had to travel long distances, sometimes three or more hours in a round trip, to meet with clients. In addition to driving to their own meetings with the client, case managers also noted they spent time driving clients to other appointments because the client had no other means by which to get there. These hours devoted to transportation significantly increased the time allocated per case and limited the number of clients the programmes were able to serve. To help overcome these challenges, programme staff noted they would have liked more resources to assist clients with transportation-related issues. In this case, transportation was not considered part of the intervention, but this is a significant factor

influencing the client access to services.

The relationship that clients build with a case manager is often extremely beneficial to their recovery and reintegration into society. Hayden et al. (2011) note that some clients who had already been helped to 'move on' were keen to retain contact with the Trailblazer service 'to have someone to ring for advice' or 'to have a safety net to fall back on'. The kind of approach adopted by many of the Trailblazer programmes, allowing clients to remain with the service to receive ongoing support even after being referred to another agency or being moved on to stable housing, seemed to be much appreciated by clients. This continued contact is beneficial for building sustainable relationships between service user and case manager; it provides opportunities for further and more individualised support as the service user needs.

Building flexibility into the services model and budgeting for longer-term case management (targeted to households at greatest risk of housing loss) is an important strategy to facilitate access to services (Tull et al., 2010). The design of the Demonstration Project programme limited the delivery of home-based case management to six months, in order to serve more families, with the frequency and duration of home visits dependent upon a family's level of service need. While the six months of case management and six months of follow-up may have been sufficient for many families, a substantial number of other families repeatedly experienced crises and instability. This is contrary to strategies employed by other case management programmes that endeavour to decrease the caseload of case workers in order to increase the intensity of the programme. This suggests that flexibility in case management is needed to meet the needs of different families and an individualised approach, tailored towards each family should be implemented where possible.

<u>Sharing information and impact with others</u>

Often data sharing, particularly between agencies or organisations can cause disruption and delay. Mason et al. (2015) reported that the lack of available data in the London Homeless Social Impact Bond interventions (designed

to improve the health, employment and housing outcomes of individuals experiencing street homelessness, whose needs were not being met via other services), due to concerns from the Health and Social Care Information Centre about data protection, inhibited access to services. Providers were confident that these outcomes were being achieved through the support provided, but it was noted that without the data there was no sense of the scale of the achievements and thus to tailor and amend delivery if necessary. In order to support data sharing and monitoring, Riley et al. (2011) recommended developing a structured progression document to be used by all support services to monitor and plan client progression and increase service access for those vulnerable to homelessness.

Staff/ case worker

Communication, engagement with programme recipients

Regular communication and engagement between project delivery staff and clients are consistently highlighted as important factors in building good rapport (Mason et al., 2015; Riley et al., 2011; Pleace & Bretherton, 2016) and increasing client engagement with the service (Gomez-Bonnet et al., 2013). Mason et al. (2015) note that in the London Homelessness Social Impact Bond the consistency of the contact, both in person and nature, was key to an effective relationship. It facilitated the identification of issues facing an individual and thus the appropriate ways for them to move forward and away from the street into accommodation. A persistent, flexible and relational approach to working was described as core to the success of the project. Trust between staff and clients was built through working closely together, sharing information, joint decision making and establishing clear roles and responsibilities. This working model enabled the development of a tailored package of appropriate interventions (Riley et al., 2011). Pleace and Bretherton (2016) similarly suggest that there are strong indications from their study that timely and sustained one-to-one support makes a crucial difference to the success of Crisis Skylight and improved outcomes for clients.

Multidisciplinary teams and interagency collaboration

Additionally, staff workers are often key in developing links and engaging with other agencies. Discussions of what works are often in relation to outcomes like the need to secure appropriate treatment for alcohol and substance misuse; and, support for those with mental health problems. This is expressed by St Mungo's Broadway (Mason et al., 2015) as 'the recovery journey' for all clients. In delivering this, staff members maintained links with a wide range of providers so that their clients were supported to access appropriate interventions. An example of this is supporting clients to access the Dr Hickey GP surgery in Westminster, which only treats homeless people, and working in partnership with StreetMed (street-based health services, previously available pan-London). Beyond the challenges posed by the complexity of needs for some individuals and the time-consuming nature of the support they require to move forward, the lack of availability of specialist provision (particularly mental health provision) was highlighted as a barrier to improving clients' health.

Partnership/ collaboration with external agencies

Effective partnerships with other agencies and organisations in a key factor in the effective implementation of services. Partnerships are perceived as more successful if they could provide pathways to accessing health and social care services more easily to those in need of them. Crisis Skylights (Pleace and Bretherton, 2017) were generally perceived to be enhancing the range of services available to single homeless people and improving the strategic level response to homelessness in the cities in which they operated. They were often seen as delivering tangible benefits for single homeless people and, by concentrating on social and economic integration, providing services that had not been available to the same extent prior to their arrival. In addition, the Crisis Skylights were seen as 'good' partners, that other homelessness services and local authorities could effectively work alongside. The provision of services or access to services is a key component of this intervention designed to improve outcomes for those who are homeless.

An important service development reported by Hennessy et al. (2005) included the need to build more links within the community and community

services, and to maintain relationships between key workers and young people who are rehoused in the community. It was evident that establishing these links was an important means by which a young person might overcome social exclusion. In this respect, it was identified as a main way in which the resettlement service could further develop (there was evidence that some work in this area had already been undertaken, in establishing some links with local churches and community groups in the area). Such organizations would then be able to offer on-going support to young people in the community who were vulnerable to repeating cycles of homelessness.

Emotional skills (awareness, empathy, building trust, taking a personalised approach)

For many programmes, having staff workers with emotional awareness who are able to build trust with clients is important for services to be easily accessed. Across the providers the predominant theme was the importance of an approach whereby staff workers will do 'whatever it takes' to support their client (Mason et al., 2015). This includes day-to-day activities that maintain contact and that are tailored to the clients' level of need. The relationship with the client was seen to be key in recognising when small problems occur, which may escalate and create stresses that lead to the breakdown of relationships with agencies and a return to the streets.

Riley et al. (2011) note that the role of staff workers was crucial in building the confidence of clients; they had an excellent understanding of the client group and were able to gain the trust of clients. They were very effective at easing clients into the programme, to keep them engaged in the early stages, but challenging them to make progress. The person centred, holistic approach allowed clients to build trusted and valued relationships with staff who did not burden or overwhelm clients with paperwork or discuss long term plans too early in the process.

As Cunningham et al. (2013) suggest, it is very important for service providers to have 'cultural competency', which in the case of their programme which served armed forces veterans, to have staff who were familiar with how members of the armed forces experience civilian life. A service provider

can build cultural competency by staff workers with a similar background to clients and providing opportunities for peer-to-peer support.

Language as a barrier

One technical skill that was identified as having an impact on those accessing services was the staff's ability to speak other languages. Johnsen and Sosenko (2012) acknowledged that service users who had a limited understanding of the English language were much more severely restricted with the services (such as emergency healthcare) they could access. This often caused issues in terms of disengagement with services and the support that was often available. When working with those who are homeless in a large city such as London, having support staff who were able to speak in native languages was identified as an important element of provision that helped to engage particular groups of clients, building the trusting relationship necessary to make progress (Mason et al., 2015).

Recipients of programme

Appropriate, Tailored Placement

For those trying to access accommodation through some of these services, the choice of specific types of housing and accommodation should be implemented in a way that is considerate of individual and family circumstances and what services they need to access. For instance, access programmes should consider what school children are attending or where their mental health support lies so that their access to these services are not hampered by changing the location of their dwellings. Tull et al. (2010) describe how a Beyond Shelter Housing Relocation Specialist worked together with each family and their Case Manager to evaluate their permanent housing needs alongside consideration of where children were attending school, where extended support networks were available, and where mental or medical health needs could be met. This included facilitating the move to permanent housing, assisting the family with signing the lease and making arrangements for the physical move.

Within the Single Housing Enterprise Programme (Riley et al., 2011), for all clients, including those looking for employment, there were a number of

short-term goals that they hoped SHEP could help them achieve. These goals involved addressing wider issues, such as learning to take responsibility for themselves, encouraging independence and improving their self-care and living skills, tackling drug or alcohol dependency, finding a structure and routine to their daily life and using their time constructively. Whilst many clients saw these shorter-term goals as contributing to the long-term aim of finding employment, other clients joined SHEP only in order to achieve shorter term goals and did not start SHEP with the aim of finding work.

Accessibility (time and place)

Accessibility to services in terms of location and time are important. Mason et al. (2015) suggest that the pan-London approach was identified as an important feature of the SIB, being able to follow clients 'who naturally wander about'. Staff workers maintained a high level of awareness of local providers and partners with whom they could work, both in and across the London Boroughs. Riley et al. (2011) describe 'rolling access' as a useful strategy, whereby clients were able to access the training programmes at any point in time, on a rolling basis (subject to space). In contrast to some training courses provided, for example, by Further Education colleges, this aspect of the delivery model suited the clients very well as they could access training when they were ready for it. As a Pathways to Employment team member noted, for many of the clients it is either 'now or never' as to whether they become engaged in training.

Implementation data included in effectiveness studies

The synthesised evidence from the process evaluations, encapsulated in the Implementation EGM, is extremely useful however the interventions evaluated in the process evaluations are from different studies and represent different types of access interventions to those included in the meta-analysis reported above. As mentioned above, that is because the effectiveness EGM and the process and implementation EGM were (necessarily) constructed separately which meant that the qualitative process evaluations in this section are not aligned with the specific interventions reported in the meta-analyses in the preceding section.

The interventions in the process evaluations tend to try to improve access to a wide variety of services, not just those associated with health and social care. With this in mind, the Campbell UK & Ireland team, endeavoured to extract any available process data from the effectiveness studies included in the quantitative synthesis. The following section provides a brief synthesis of the relevant implementation and process data that it was possible to extract. Only four effectiveness studies reported relevant process information regarding factors that influenced the implementation of the intervention; these include Conrad (1998), McHugo (2004), Sacks (2004) and Samuels (2015). This section follows a much more thematic analytic process and is shorter due to the lack of available implementation information in the effectiveness studies. This section aims to act as a bridge between the studies included from the two EGMs.

Enhance existing services rather than reinventing the wheel

One factor for consideration is using key elements from interventions that have evidence to show that they work and adding these to services needed to improve access, rather than completely redesigning these services entirely and unnecessarily. Sacks (2004) suggests that the 'Therapeutic Community' intervention and addiction agencies can use core methods enhanced by expanded interventions to serve their special populations (in this case, mothers and children). In this intervention (Sacks, 2004) suggests that it is not necessary to invent entirely new programme models to address the variety of needs. Instead, it is more efficient to add elements to core services and train staff to handle these additional features. In particular, this study demonstrates that adding elements such as parenting classes, women and children's groups, and housing skills groups can benefit the mother and strengthen the applicability of the Therapeutic Community model. These additions are relatively easy to learn, for staff to be trained in and can increase capacity in comparison to an entirely new intervention.

Caseloads and case worker to client ratios

A factor that emerged as enhancing communication between caseworkers and clients is the implementation of lower caseloads, or staff- to-client ratios in the intervention. Case workers with reduced caseloads had much

greater capacity to deliver intensive interventions, particularly to families, and prevented large turnover rates of staff (Samuels, 2015). In the effectiveness study by Samuels (2015) there were issues in retaining caseworkers in the control condition and staff were often replaced slowly, therefore caseworker ratios in the control condition increased to as high as 50:1. This potentially created a significant barrier impacting the rate at which families were able to access services. Conrad (1998) reported similar findings in their effectiveness study. Infrequent contact between participants and case managers after discharge from the residential component of the programme was a direct result of large caseloads. Consequently, case managers were not able to provide intensive or timely case management, creating a significant barrier for participants trying to access services.

Multidisciplinary teams/interagency collaboration can achieve better outcomes.

The McHugo (2004) study aimed to both accommodate participants stably and improve their access to services through integrated housing services. They suggest that the straightforward conclusion from their study is that integrated housing services are superior to parallel housing services for consumers with severe mental illness who are at high risk for homelessness, and especially for males. However, the crux of the matter, as identified by McHugo (2004) is that housing and mental health services are linked. Close integration of mental health providers and housing providers ensures that services are consistent and not in conflict. For example, one repeated observation in non-integrated systems is that housing providers want to contract with consumers who do not cause problems, whereas mental health teams would like to find stable housing for the consumers who are most prone to behavioural problems, homelessness, and institutionalisation. Integration of housing and mental health teams ensures that the difficulties that arise when consumers who are housed experience clinical relapses, behavioural episodes, financial problems, and other threats to housing will be less likely to result in loss of housing. Private landlords or independent housing programs have no strong incentive to find a solution that is in the consumer's best interest when less problematic tenants are available,

whereas an integrated team bears long-term responsibility for the consumer, before and after disruptive episodes.

Discussion

Summary of main (quantitative) results

Forty-seven (47) studies containing 73 access intervention papers were identified from CHI's impact evidence and gap map and included in this review of the effectiveness of access programmes for improving outcomes for individuals experiencing, or at risk of experiencing homelessness. Most of the included studies (43/47) were carried out in the United States of America. Twenty-nine (29) were randomised controlled trials and 17 were quasi-experimental (non-randomised) studies.

The majority of studies evaluated varieties of Assertive Community Treatment (ACT) interventions - intended to be a comprehensive and seamless system of multidisciplinary services and treatment to support people living with severe and/or persistent mental illness in the community (e.g. Appel et al., 2011; Essock, 2006) - and case-management (Nyamathi et al., 2015; Malte, Cox and Saxon, 2017; Conrad et al., 1998) whereby a case-manager implements, coordinates, monitors and evaluates the options and services required to meet service users health and social care (and other) needs. Interventions are either offered alongside housing support (e.g. Goering et al., 2012; Srebnik, Connor and Sylla, 2013) or separately, without additional housing support.

Primarily, the main aim of the interventions included in this review was to improve the number of people accessing beneficial services. However, other holistic interventions, particularly those that also offered housing, and other types of support also aimed to achieve positive outcomes through mechanisms that are not necessarily related to improving the access to services. Given this holistic, multi-component approach , it is not possible to separate out the impacts of specific programme components on secondary outcomes. Thus, it is the impact of the intervention as a whole (including all its components working together) that is being discussed.

Given the focus of this review, we first discuss the impact of evaluated interventions on access to services and then the impacts on other outcomes. However, only around one third of the interventions included in this reviews (16/47) actually measured access to services as one of the key outcomes.

Primary outcome – Access to services

The primary aim of this review was to determine whether interventions aimed at improving access to health and social care services are effective in doing so. Only 16/47 studies directly measured access to services as an outcome in itself. Those studies that did not explicitly measure access to services as an outcome are still included in the discussion below, related to secondary outcomes. There was unfortunately insufficient studies and data to compare the relative effectiveness of different types of intervention.

Across the studies included in this analysis 'access' was defined, measured and reported in different ways and included: frequency of participants' contact with the programme, engagement with mental health services, attendance in substance use programmes and utilisation of other services (not always specified in the study report but could include, for example, vaccination uptake). The overall mean effect was ES=0.30 (95% CI [0.12, 0.48]; 67 effect sizes from 16 studies) which indicates a moderate increase in service utilisation for those receiving the intervention programme compared to standard care i.e. a positive outcome suggesting that access programmes can indeed be effective in increasing access to health and social care services. Specific examples of programmes represented in this analysis include (but are not limited to – see results section for more detail on included programme characteristics): Homeless Oriented Primary Care (O'Toole, 2010), Assertive Community Treatment (Bond, 1990) with integrated problematic substance use provision (Calsyn, 2005) and community workers ((Morse, 1997) as well as Hosuing First models of provision (Stefancic, 2007) and a Family Critical Time Intervention (Samuels, 2015).

Secondary outcomes

All other outcomes reported by the included studies were classified as secondary outcomes (n=9). Table 17 provides a summary of each secondary outcome and its associated effect.

The results show that the programmes included in the meta-analyses have the potential to improve other outcomes (see below), in addition to improving access to services, for individuals who are experiencing homelessness or at risk of homelessness. These other outcomes may be improved by increasing the accessibility and engagement with these services, but there are also other potential mechanisms: some of these interventions are holistic and have multiple components which might have separate, direct impacts on outcomes (e.g. those that include a housing component - such as the integrated housing services programme evaluated by O'Toole (2018) - may have an impact on health outcomes). It is not possible, however, to separate out the relative impact of the components of an intervention, which means we are unable to determine the precise contribution of increased access to services to changes in outcomes.

Nevertheless, for those receiving the included (multi-component) interventions there were measurable improvements in quality of life (ES=0.22) and (to a lesser extent) increased levels of social support (ES=0.09) as well as a reduction in visits to the emergency department (ES=-0.10).

The remaining secondary outcomes showed only extremely small changes as a result of programme participation, namely: hospitalisation, drug and alcohol use, mental health, arrests and incarcerations, and employment status.

Table 17: Summary of effects for each secondary outcome

Secondary Outcome	No. of effect sizes	Effect size	95% CI	Description
Hospitalisation	24	0.020	-0.10, 0.14	Extremely small increase in hospitalisations
Emergency Department visits	11	-0.100	-0.39, 0.19	Small decrease in ED visits
Physical health	10	0.001	-0.15, 0.15	Negligible change in physical health
Drug and alcohol use	81	0.030	-0.12, 0.17	Extremely small increase in drug and alcohol use
Mental health	62	-0.030	-0.12, 0.05	Extremely small decrease in mental health symptoms
Quality of life	19	0.220	0.09, 0.34	Moderate improvement in quality of life
Social support network	41	0.090	-0.03, 0.21	Small improvement in social support
Arrests and incarcerations	40	-0.012	-0.15, 0.12	Extremely small decrease in arrests and incarceration
Employment status	27	0.065	-0.13, 0.26	Extremely small improvement in employments status

Moderator analysis

We conducted a number of subgroup analyses to explore whether study, intervention or sample characteristics influenced the overall effect of the intervention on each outcome. The moderating variables we identified as important included the methodological quality of the study, the age of participants, whether the intervention was aimed at single people or families, and whether the intervention was classified (according to the framework discussed earlier) as aiming to increase access to services through improving the availability, acceptability or affordability of the programme. In addition, when examining the characteristics of each intervention, we identified that some interventions were delivered alongside housing provision and some were delivered without additional housing provision, so we also explored whether the effectiveness of the intervention was improved according to whether housing was also provided. It is important to note that the small sample sizes in each of these analyses meant that these analyses were underpowered and should be considered with caution.

It emerged that the effectiveness of the intervention did not vary significantly according to methodological quality of the study, age of the participants or whether housing was provided alongside the intervention. Any differences in effect sizes according to these variables were very small and extremely variable. There were two exceptions to this related to social support and arrests and incarcerations (see results section above). Given the overall number of analyses that were conducted and that these two results do not reflect a broader or consistent pattern of moderating effects, we would caution reading very much into these two exceptions.

For two moderating variables there was insufficient variation in the moderating variable to conduct a meaningful analysis. Firstly, only three studies focused on families making it infeasible to explore whether interventions aimed at families were more or less effective than interventions aimed at single people. Secondly, in the case of the framework classification of each intervention (i.e. did it aim to improve the availability, acceptability or affordability of the programme) there was similarly insufficient variation across the variable to conduct a meaningful analysis of the relative effectiveness of each category of intervention. The majority of interventions (85%, n=40) focused on increasing the availability of services for those experiencing homelessness. Six interventions (15%) aimed to increase both availability and acceptability. One intervention focused on improving the affordability of services, in addition to availability and acceptability.

Overall completeness and applicability of the evidence

Given that the vast majority of the studies (43/47) were conducted in the United States, translating these findings to a UK context requires serious

consideration. For the analyses reported above the intervention is compared to standard care, however it is important to understand what standard care is in the context of the evaluation in order to understand whether the intervention might be transferable to another context, where standard care differs considerable. For instance, in the UK context access to most health services is free at the point of use whilst in the US basic health coverage is not universal. These differences may impinge on the expected impacts. As with importing any intervention to a new context or setting, rigorous evaluation (of both effectiveness and implementation) is required as a programme is rolled out, in order to find out whether it is similarly, more or less effective. It cannot be assumed that the effects of an intervention will translate across countries, settings or time.

Of the studies that are included in this review, there are very few that either focus on families or report disaggregated data on families and individuals. Thus, it is not possible in this review to determine how families, and consequently children, are impacted by the intervention. There is also a lack of studies exploring whether a gendered approach that explicitly considers different barriers for men and women could be more effective at improving access to services and other related outcomes.

There are a number of studies which did not report useable data. We have contacted these study authors to request if they have the data we need, but as yet we have had no response to our enquiries.

Quality of the evidence

The quality of the evidence was generally low across the 47 included studies. Twenty-nine (29) were randomised controlled trials and 17 were quasi-experimental (non-randomised) studies. Of the 29 RCTs, nine were high risk of bias, 18 were moderate and two were low risk of bias. Of the 17 quasi-experimental (non-randomised) studies, three were high/critical risk of bias, seven were serious risk of bias, seven were moderate risk of bias and none were low risk of bias. Examination of the forest plots from the meta-analyses show occasionally wide confidence intervals, indicating the uncertainty with which the synthesised effects are estimated. More high-quality, rigorous

evaluation research is required, especially in countries and regions outside the USA.

Limitations and potential biases in the review process

This review was not based on searches conducted by the author team – instead we drew on the two evidence and gap maps already commissioned by CHI. These EGMs were conducted according to Campbell Collaboration standards and guidelines and this is a novel endeavour, for a separate author team to use the studies included in an EGM as the sole source of studies for a systematic review.

Summary of implementation and process (qualitative) findings

Increasing the capacity of case workers is key to providing an intense and individualised service for those wishing to access services. If case workers have a lower ratio of clients, this creates more time for the case workers to provide a service or access to a service that is specific to the needs of the individual. The case worker can meet with their clients more frequently and spend more time discussing potential plans, outcomes and compare various routes through the service. This focuses the service where it is needed most and prevents staff from spreading themselves too thinly, creating a detrimental impact upon those availing of the service.

Additionally, it is important to invest in staff with high quality training and to encourage the use of their emotional awareness and communication skills through, for example, a person centred, holistic approach. Their relationships with clients are crucial in building confidence and gaining trust for them to invest in the intervention or programme. This is where person centred, holistic approaches to service provision can be more successful and engaging for the clients; often small issues can be addressed quickly before escalating into a larger problem that adds strain to relationships already built up between the service provider and client. Investing in resources is also key to successful implementation. On a tangible level, this can be as simple as providing transport for those living in rural areas, who find it difficult to move around easily.

Multidisciplinary teams and collaboration both inside the organisation and with external partners can be beneficial if implemented well. Often specialist provision, such as mental health services can be lacking due to capacity issues, however building links with community services and improving the response at a strategic local government level are routes that can mitigate this issue. It is therefore important to nurture professional relationships between organisations and take into consideration different goals and contexts. This can be facilitated with sharing necessary data on clients quickly and to the most appropriate people.

Sharing vision and values across policymakers, service providers and recipients creates a shared culture and a coherent service that achieves buy-in from stakeholders and members of the community. This is usually illustrated in the commitment policymakers have towards the intervention and staff towards achieving better outcomes for their clients. For clients, the consistency of staff provision and their ability to provide practical and emotional advice created a caring atmosphere for groups who are often stigmatised, lacking in confidence and reluctant to engage.

The goals between clients and service providers can differ considerably depending on how long the individual has been homeless and what they actually want to achieve or receive from the intervention. For some clients, their short-term goals will develop into longer term goals and aspirations, however others accessing the service may not have this awareness or may not want to avail of the service beyond the short term. Nonetheless it is important for service providers to build sustainability into their programmes to facilitate continued engagement with services, even after the intervention is complete. Services with 'rolling access' will achieve this as they are flexible to complement the often fluid lives led by those experiencing homelessness.

Implications for practice and policy

We know that interventions which seek to increase access to services are wide ranging, consisting of a variety of component parts and targeting diverse groups of people; from those with long term experience of homelessness to households with dependent children. The quality of the

current quantitative evidence is low, and the majority of these studies are from the US. Nonetheless, there are important implications that can be drawn from both the quantitative and qualitative evidence.

From a policy and practice perspective it is important to know that there is quantitative evidence to suggest that programmes which aim to improve access to services have the potential to do so. Specific examples of programmes represented in this analysis include (but are not limited to – see results section for more detail on included programme characteristics): Homeless Oriented Primary Care (O'Toole, 2010), Assertive Community Treatment (Bond, 1990) with integrated substance abuse provision (Calsyn, 2005) and community workers ((Morse, 1997) as well as Hosuing First models of provision (Stefancic, 2007) and a Family Critical Time Intervention (Samuels, 2015).

We also know that other secondary outcomes can potentially improve. Whether this is due to improved access to services, or other programme components that directly target other relevant outcomes, is not yet known without further evaluation of impact, to better understand what programme components work best, for whom and under what circumstances This notwithstanding, there is a reasonable expectation that increasing access to services should translate into better outcomes

Whilst the availability, affordability and acceptability framework (set out in the background section) was not so easily applied to the quantitative studies, because they mostly focused on improving availability, the qualitative studies included in this review (which were mostly UK based) provide insight into some practical considerations that should be taken into account and these are discussed below.

Availability

Making services more readily available and accessible was a key component of many of the included programmes. This was achieved in a variety of ways including:

- Making use of flexible and extended operating hours by, for example, ensuring that service hours are also available outside working hours to allow employed individuals to avail of the services they require.
- Increasing the capacity of case workers is key to providing an intense and individualised service for those wishing to access services.
- Improving the timeliness of access to services to reduce the length of time that people have to wait in order to avail of the service they need.
- Improving collaboration between statutory, community and voluntary organisations offering HSC services in order to improve accessibility for people who are homeless or at risk of homelessness. For example, through strategic level responses to homelessness and/or partnerships between organisations using joint protocols to create a single route to access services.
- Providing high quality training for health and social care professionals to promote the use of their emotional awareness and communication skills to facilitate accessibility for clients.
- Physically locating services so that they are close to where clients are residing.
- Adapting methods of communication and how information is presented to service users (including information in multiple languages).

Affordability

There is insufficient quantitative and/or qualitative research to provide much insight into increasing the affordability of services. It applies less in a UK context because many services are publicly funded and free at the point of use. However publicly funded services are currently under severe resource constraints and the potential provision of services from other sectors may well mean that affordability (and certainly availability) becomes a more salient issue.

Some other elements might affect affordability which are not necessarily related to the costs of the services themselves. For instance, transport costs were identified as a barrier so providing (or paying for) transport to and from services may be necessary.

Acceptability

The points highlighted below reflect taking both a trauma informed and psychologically informed environments (PIE) approach. They speak largely to the acceptability component of the framework and focus on the importance of staff who are coordinating or implementing services understanding the needs of the people they are working with. Equally important is incorporating flexibility into client contact and service provision to facilitate both service access and engagement:

- Good, trusting relationships between clients and staff are identified as key to successful service uptake and implementation through, for example, working closely with the client, sharing information, joint decision making and establishing clear roles and responsibilities.
- Employing people with lived experience when implementing services.
- Taking a rapid, flexible response when people engage with services.
- Ensuring flexibility for direct service delivery staff to meet clients' needs, and varying the intensity of services over time, as required. For example, flexible start times of services or sessions, identifying and addressing small problems when they arise to prevent escalation or varying the duration and frequency of home visits depending on the clients' current level of service need.
- Ensuring clients have both choice and control when engaging with services, for example joint decision making when it comes to service utilisation and accommodation location.
- Maintaining contact with clients when they are in the process of exiting a

service.

Further considerations

Other issues, related to process and delivery of programmes, also emerged as important in addition to those listed above under the availability, affordability and acceptability framework. These include:

- The importance of local partnerships that build links across the services and local authorities increasing potential to influence access to services in the longer term
- Applying clear eligibility criteria and transparent referral (and self-referral) routes
- Implementing information collection and sharing protocols, both internally and in partnership with others

Future programme development and implementation research could extend our understanding and the formulation of this framework by specifically including (or enhancing) elements in the programme design that would aim to increase affordability and acceptability. It may be the case that the framework takes on different emphases depending on the context in which the programme is being implemented, for example in the UK, because services are publicly funded, there may be less need to focus on the affordability of programmes. These additional/enhanced programme components could then be tested and evaluated to further contribute to our knowledge of what is most effective for improving access of individuals at risk of or experiencing homelessness.

Implications for research

There is a clear and urgent need to fund and conduct rigorous experimental research in other regions, including Europe and the UK. It is evident from the available research that the majority of quantitative evaluation studies are conducted in the US. This is important in order to fully understand how the effectiveness of programmes varies by context. In addition, more methodologically robust studies are needed; currently the quality of the available evidence is variable and often low, which introduces uncertainty into our conclusions about programme effectiveness.

Whilst the quantitative studies included in this review aimed to improve access, not all of them measured access, meaning they were not included in the analysis of the primary outcome. This speaks to the importance of future research making efforts to understand and test both the mechanisms by which impact occurs, and the relevant outcomes that are expected to change as a result.

The programmes included in this review were (necessarily) complex and varied considerably, consisting of many moving parts. Currently the evidence does not allow us to understand or extract the key components of interventions (for example housing provision, case management, wraparound service provision, open access care, continuity of care approaches, peer coaching, specialist support, to name but a few) and map the pathway through which they change different, but important, outcomes. Further work is needed to design studies (for example, using factorial designs) that specifically test the effectiveness of discrete programme components, or foci, using a logic model approach to appropriately map the hypothesised change mechanism and identify (and measure) all relevant outcomes. This would allow us to better understand how multi-component access programmes are achieving their impacts, and which components of the programme are affecting which outcomes (and how).

Leading on from this, a better conceptual understanding of how access programmes work (and could thus be adapted and improved) across different contexts is needed. In this review we used the Availability, Affordability and Acceptability framework (described earlier) however it was limited in its usefulness because the majority of the programmes in the quantitative synthesis focused more on increasing availability and less on affordability and client acceptability.

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Appendix 1

Data collection form for homelessness reviews

1. Bibliographic information	
Article ID	FREETEXT
Linked articles	FREETEXT
Extracted by	FREETEXT
Checked by	FREETEXT
Year of publication	FREETEXT
Type of publication	1. Journal Article 2. Book/book chapter 3. Government report 4. Conference proceedings 5. Presentation 6. Thesis or Dissertation 7. Unpublished report 8. Other (please specify)
Location of study The location in which the study is set not where the study authors are based.	1. UK 2. ROI 3. Rest of Europe 4. USA 5. Canada 6. South America 7. Central America 8. Oceania 9. Middle-East 10. Asia 11. Africa 12. Other (Please Specify) Not Specified

1. Bibliographic information	
Study funding sources	1. Research council funding 2. University scholarships and bursaries 3. Salaried research assistantships from university departments 4. Grants or loans from trusts and charities 5. Local enterprise initiatives 6. Company sponsorship 7. Government loans 8. EU Scholarships 9. Industry sponsorship 10. Other (please specify)
Possible conflicts of interest	1. Yes, possible/definite conflict of interest 2. No, study appears to be free of CoI 3. Can't tell

2. Participant information	
Recruitment setting Where were participants recruited from?	1. Clinical setting 2. Accommodation for individuals experiencing homelessness 3. Family home 4. The street 5. Community setting 6. Referred by friends or family 7. Referred by medical health professional 8. Housing Agency 9. Other (Please specify)
Homelessness Status at intake Describe the housing status of the sample at intake and/or any information given about housing status prior to intake. Tick all that apply and try to extract numbers were available. Homelessness is defined as those individuals who are sleeping 'rough' (sometimes defined as street homeless), those in temporary accommodation (such as shelters and hostels), those in insecure accommodation (such as those facing eviction or in abusive or unsafe environments), and those in inadequate accommodation (environments which are unhygienic and/or overcrowded).	1. Sleeping 'Rough' (or rooflessness) 2. Temporary Accommodation 3. Insecure Accommodation 4. Inadequate Accommodation 5. Involuntary sharing e.g. domestic violence 6. Hidden/concealed homelessness 7. Other (please specify) Not Specified

2. Participant information	
Geographical context Where participants receive treatment?	1. Urban 2. Rural 3. Suburban 4. Mixed 5. Other (please specify) Not Specified
Gender % (actual number)	FREETEXT
Age Extract mean age, SD and range. Choose multiple options if the analysis is reported separately for different age groups.	1. Under 25 2. 25 and Over
Complexity of needs What other challenges does the individual face, if any, aside from the risk or experience of homelessness? High Risk of Harm and/or Exploitation - For example, women in shelters, newcomer families, refugee/asylum seeker, care leavers	1. Poor Physical Health 2. Poor Mental Health 3. Incarceration 4. Problematic substance use 5. Care leaver 6. Limited access to integrated support services 7. High Risk of Harm and/or Exploitation 8. Other (please specify) Not Relevant Not Specified
Mental health status	1. Receiving treatment 2. Not receiving treatment 3. Other (please specify) Not relevant Not Specified
Substance use status	1. Receiving treatment 2. Not receiving treatment 3. Other (please specify) Not relevant Not Specified

2. Participant information	
Homelessness status Homelessness is defined as those individuals who are sleeping 'rough' (sometimes defined as street homeless), those in temporary accommodation (such as shelters and hostels), those in insecure accommodation (such as those facing eviction or in abusive or unsafe environments), and those in inadequate accommodation (environments which are unhygienic and/or overcrowded).	1. Sleeping 'rough' 2. Temporary accommodation 3. Insecure accommodation 4. Inadequate accommodation 5. Other (please specify) Not Specified
Family vs. No Family Family = any child involved Non-family = single person or couple without children If mixed sample, select both and describe	1. Family 2. Non-Family Not Specified
Sample size of treatment group Number of people assigned to treatment. If more than one treatment group extract all and be clear which group is which.	FREETEXT
Sample size of control group Number of people assigned to control. If more than one control group extract all and be clear which group is which.	FREETEXT

3. Intervention information	
How many intervention arms in this trial? List how many study arms there are and given each a name. e.g. Intervention = Critical Time Intervention; Control = Treatment as usual If there is more than one intervention arm go to the "Study Arm" tab and add the RELEVANT study arms. You must then extract data for each relevant study arm.	FREETEXT
Name of intervention Write in the name of the programme, intervention, or treatment under study. This may be specific like 'critical time intervention' or it may be something more generic like 'supported housing'	FREETEXT

3. Intervention information	
Briefly Describe the intervention Briefly describe the intervention, what participants are offered and any important factors such as conditionality, nature of housing, case management, substance abuse treatment included etc.	FREETEXT
Theory of change How does the intervention aim to bring about change? What is the underlying theoretical rationale for why the intervention might work to improve outcomes? If not specified write "not specified"	FREETEXT
What is the size of accommodation/How many beds?	FREETEXT
Duration of treatment period from start to finish In the dosage items, we are interested in the amount of treatment received by the participants. If the treatment was delivered directly to participants, the authors will probably provide at least some information about dosage and you can code these items accordingly. If minimal information is provided, you should try to give estimates for these items if you can come up with a reasonable estimate.	FREETEXT
Timing Frequency of contact between participants and provider/ programme activity	1. Once a month 2. Less than weekly 3. Once a week 4. 1-2 times a week 5. 2 times a week 6. 2-3 times a week 7. 3 times a week 8. 3-4 times a week 9. 4 times a week 10. Daily contact Can't Estimate
Length of each individual session How long does each contact/session last?	FREETEXT

3. Intervention information	
Study Personnel The primary individual/s who have direct contact with the participants served by the programme. If the report is the author's dissertation (or based on the author's dissertation), then code as "Graduate Researcher". If the delivery is performed by graduate or undergraduate students assisting the author then select "Grad/ Undergrad Students". Code “Self-directed” for studies where electronic / computer programs are used. If the intervention is solely environmental i.e. community housing, then code “environmental change”	1. Graduate Researcher 2. Grad/Undergrad Students 3. Author 4. Homelessness professional Includes case manager, social worker, outreach worker 5. Peers 6. Interventionist (Not Hired by Researcher) 7. Interventionist (Hired by Researcher) 8. Self-Directed 9. Medical Professionals 10. Other (please specify) Not Specified
Did provider receive specialised training? This refers to whether or not the ‘interventionist’ received specialised training to equip them to deliver the intervention proficiently.	1. Yes 2. The interventionist IS programme developer 3. No Not specified
Resource requirements Time, staff, housing provision etc	FREETEXT
Cost	FREETEXT

4a. Study Design	
Design The studies included in all reviews must include an intervention group and at least one untrained control group. Control groups can include placebo, no treatment, waitlist, or treatments vs ‘treatment as usual’. Any study which includes one group pre-test/post-test or in which a treatment group is only compared to another treatment group will not be eligible for inclusion.	1. Randomised control trial Individual or cluster randomised 2. Non-randomised control trial
What do control subjects receive? 1. Placebo (or attention) treatment. Group gets some attention or a sham treatment 2. Treatment as usual. Group gets “usual” handling instead of some special treatment. 3. No treatment. Group gets no treatment at all.	1. Placebo 2. Treatment as usual 3. No treatment Not specified

4a. Study Design	
Unit of allocation Individual (i.e., some were assigned to treatment group, some to comparison group) Group (i.e., whole subsets assigned to treatment and comparison groups) Regions (i.e., region assigned as an intact unit)	1. Individual 2. Group 3. Regions 4. Other (Please Specify) Not Specified
Method of assignment Method of group assignment. How participants/units were assigned to groups. This item focuses on the initial method of assignment to groups, regardless of subsequent degradations due to attrition, refusal, etc. prior to treatment onset. 1. Randomly after matching, yoking, stratification, blocking, etc. The entire sample is matched or blocked first, then assigned to treatment and comparison groups within pairs or blocks. This does not refer to blocking after treatment for the data analysis. 2. Randomly without matching, etc. This also includes cases when every other person goes to the control group. 3. Regression discontinuity design: quantitative cutting point defines groups on some continuum (this is rare). 4. Cluster assigned, this is to be used in cluster assignment studies only, specify the number of clusters in the treatment group and the number of clusters in control. 5. Wait list control or other quasi-random procedure presumed to produce comparable groups (no obvious differences). This applies to groups which have individuals apparently randomly assigned by some naturally occurring process, e.g. first person to walk in the door. The key here is that the procedure used to select groups doesn’t involve individual characteristics of persons so that the groups generated should be essentially equivalent. 6. Non-random, but matched: Matching refers to the process by which comparison groups are generated by identifying individuals or groups that are comparable to the treatment group using various characteristics of the treatment group. Matching can be done individually, e.g., by selecting a control subject for each intervention subject who is the same age, gender, and so forth, or on a group basis.	1. Randomly after matching 2. Randomly without matching 3. Regression discontinuity design 4. Cluster assigned 5. Wait list control 6. Non-random, but matched 7. Other (Please Specify) Not Specified

4a. Study Design	
Was there >20% attrition in either/ both groups? Attrition occurs when participants are lost from an intervention over time or over a series of sequential processes. Studies may describe this as 'lost to follow-up', or 'drop outs'.	FREETEXT

4b. Non-random studies	
How were groups matched? If matching was used prior to assignment of condition, how were groups matched?	1. Matched on Pre-test measure 2. Matched on personal characteristics 3. Matched on demographics 4. Groups weren't matched 5. Other (please specify) Not specified
Was the equivalence of groups tested at pre-test?	FREETEXT
Results of statistical comparisons of pre-test differences	1. No statistically significant differences 2. Significant differences judged unimportant by coder 3. Significant differences judged of uncertain importance by coder 4. Significant differences judged important by coder 5. Other (please specify)
Were there pre-test adjustments?	FREETEXT

5. Qualitative information	
Qualitative methods used	FREETEXT
Data analysis technique and procedure	FREETEXT
Was the intervention implemented as intended?	1. Yes 2. No Not specified
How was this measured?	FREETEXT

5. Qualitative information	
What implementation and process factors impact intervention delivery?	1. Contextual factors 2. Policy makers / funders 3. Programme managers/ Implementing agency, 4. Staff / case workers 5. Recipients

6. Assessing quality in RCTs (Cochranes ROB2 tool)	
Domain 1: Risk of bias arising from the randomisation process	
1.1 Was the allocation sequence random?	1. Yes 2. Probably yes 3. Probably No 4. No
1.2 Was the allocation sequence concealed until participants were enrolled and assigned to interventions?	1. Yes 2. Probably yes 3. Probably No 4. No
1.3 Did baseline differences between intervention groups suggest a problem with the randomisation process?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. High 3. Some concerns
Optional: What is the predicted direction of bias arising from the randomisation process?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Domain 2: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	
2.1. Were participants aware of their assigned intervention during the trial?	1. Yes 2. Probably yes 3. Probably No 4. No

6. Assessing quality in RCTs (Cochranes ROB2 tool)	
2.2. Were carers and people delivering the interventions aware of participants' assigned intervention during the trial?	1. Yes 2. Probably yes 3. Probably No 4. No
2.3. If Y/PY/NI to 2.1 or 2.2: Were there deviations from the intended intervention that arose because of the experimental context?	1. Yes 2. Probably yes 3. Probably No 4. No
2.4. If Y/PY to 2.3: Were these deviations from intended intervention balanced between groups?	1. Yes 2. Probably yes 3. Probably No 4. No
2.5 If N/PN/NI to 2.4: Were these deviations likely to have affected the outcome?	1. Yes 2. Probably yes 3. Probably No 4. No
2.6 Was an appropriate analysis used to estimate the effect of assignment to intervention?	1. Yes 2. Probably yes 3. Probably No 4. No
2.7 If N/PN/NI to 2.6: Was there potential for a substantial impact (on the result) of the failure to analyse participants in the group to which they were randomized?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. High 3. Some concerns
Optional: What is the predicted direction of bias due to deviations from intended interventions?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Domain 3: Missing outcome data	
3.1 Were data for this outcome available for all, or nearly all, participants randomized?	1. Yes 2. Probably yes 3. Probably No 4. No

6. Assessing quality in RCTs (Cochranes ROB2 tool)	
3.2 If N/PN/NI to 3.1: Is there evidence that result was not biased by missing outcome data?	1. Yes 2. Probably yes 3. Probably No 4. No
3.3 If N/PN to 3.2: Could missingness in the outcome depend on its true value?	1. Yes 2. Probably yes 3. Probably No 4. No
3.4 If Y/PY/NI to 3.3: Do the proportions of missing outcome data differ between intervention groups?	1. Yes 2. Probably yes 3. Probably No 4. No
3.5 If Y/PY/NI to 3.3: Is it likely that missingness in the outcome depended on its true value?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. High 3. Some concerns
Optional: What is the predicted direction of bias due to missing outcome data?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Domain 4: Risk of bias in measurement of the outcome	
4.1 Was the method of measuring the outcome inappropriate?	1. Yes 2. Probably yes 3. Probably No 4. No
4.2 Could measurement or ascertainment of the outcome have differed between intervention groups ?	1. Yes 2. Probably yes 3. Probably No 4. No
4.3 If N/PN/NI to 4.1 and 4.2: Were outcome assessors aware of the intervention received by study participants ?	1. Yes 2. Probably yes 3. Probably No 4. No

6. Assessing quality in RCTs (Cochranes ROB2 tool)	
4.4 If Y/PY/NI to 4.3: Could assessment of the outcome have been influenced by knowledge of intervention received?	1. Yes 2. Probably yes 3. Probably No 4. No
4.5 If Y/PY/NI to 4.4: Is it likely that assessment of the outcome was influenced by knowledge of intervention received?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. High 3. Some concerns
Optional: What is the predicted direction of bias in measurement of the outcome?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Domain 5: Risk of bias in selection of the reported result	
5.1 Was the trial analysed in accordance with a pre-specified plan that was finalized before unblinded outcome data were available for analysis ?	1. Yes 2. Probably yes 3. Probably No 4. No
Is the numerical result being assessed likely to have been selected, on the basis of the results, from...	
5.2. ... multiple outcome measurements (e.g. scales, definitions, time points) within the outcome domain?	1. Yes 2. Probably yes 3. Probably No 4. No
5.3 ... multiple analyses of the data?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. High 3. Some concerns

6. Assessing quality in RCTs (Cochranes ROB2 tool)	
Optional: What is the predicted direction of bias due to selection of the reported result?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Overall risk of bias	
Risk-of-bias judgement	1. Low 2. High 3. Some concerns

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
Bias due to confounding	
1.1 Is there potential for confounding of the effect of intervention in this study? If N/PN to 1.1: the study can be considered to be at low risk of bias due to confounding and no further signalling questions need be considered	1. Yes 2. Probably yes 3. Probably No 4. No
If Y/PY to 1.1: determine whether there is a need to assess time-varying confounding:	1. Yes 2. Probably yes 3. Probably No 4. No
1.2. Was the analysis based on splitting participants' follow up time according to intervention received? If N/PN, answer questions relating to baseline confounding (1.4 to 1.6) If Y/PY, go to question 1.3.	1. Yes 2. Probably yes 3. Probably No 4. No
1.3. Were intervention discontinuations or switches likely to be related to factors that are prognostic for the outcome? If N/PN, answer questions relating to baseline confounding (1.4 to 1.6) If Y/PY, answer questions relating to both baseline and time-varying confounding (1.7 and 1.8)	1. Yes 2. Probably yes 3. Probably No 4. No
Questions relating to baseline confounding only	

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
1.4. Did the authors use an appropriate analysis method that controlled for all the important confounding domains?	1. Yes 2. Probably yes 3. Probably No 4. No
1.5. If Y/PY to 1.4: Were confounding domains that were controlled for measured validly and reliably by the variables available in this study?	1. Yes 2. Probably yes 3. Probably No 4. No
1.6. Did the authors control for any post-intervention variables that could have been affected by the intervention?	1. Yes 2. Probably yes 3. Probably No 4. No
Questions relating to baseline and time-varying confounding	
1.7. Did the authors use an appropriate analysis method that controlled for all the important confounding domains and for time-varying confounding?	1. Yes 2. Probably yes 3. Probably No 4. No
1.8. If Y/PY to 1.7: Were confounding domains that were controlled for measured validly and reliably by the variables available in this study?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to confounding?	1. Favours experimental 2. Favours comparator 3. Unpredictable
Bias in selection of participants into the study	
2.1. Was selection of participants into the study (or into the analysis) based on participant characteristics observed after the start of intervention? If N/PN to 2.1: go to 2.4	1. Yes 2. Probably yes 3. Probably No 4. No

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
2.2. If Y/PY to 2.1: Were the post-intervention variables that influenced selection likely to be associated with intervention?	1. Yes 2. Probably yes 3. Probably No 4. No
2.3 If Y/PY to 2.2: Were the post-intervention variables that influenced selection likely to be influenced by the outcome or a cause of the outcome?	1. Yes 2. Probably yes 3. Probably No 4. No
2.4. Do start of follow-up and start of intervention coincide for most participants?	1. Yes 2. Probably yes 3. Probably No 4. No
2.5. If Y/PY to 2.2 and 2.3, or N/PN to 2.4: Were adjustment techniques used that are likely to correct for the presence of selection biases?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to selection of participants into the study?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Bias in classification of interventions	
3.1 Were intervention groups clearly defined?	1. Yes 2. Probably yes 3. Probably No 4. No
3.2 Was the information used to define intervention groups recorded at the start of the intervention?	1. Yes 2. Probably yes 3. Probably No 4. No
3.3 Could classification of intervention status have been affected by knowledge of the outcome or risk of the outcome?	1. Yes 2. Probably yes 3. Probably No 4. No

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
Risk-of-bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to classification of interventions?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Bias due to deviations from intended interventions	
If your aim for this study is to assess the effect of assignment to intervention, answer questions 4.1 and 4.2	
4.1. Were there deviations from the intended intervention beyond what would be expected in usual practice?	1. Yes 2. Probably yes 3. Probably No 4. No
4.2. If Y/PY to 4.1: Were these deviations from intended intervention unbalanced between groups and likely to have affected the outcome?	1. Yes 2. Probably yes 3. Probably No 4. No
If your aim for this study is to assess the effect of starting and adhering to intervention, answer questions 4.3 to 4.6	
4.3. Were important co-interventions balanced across intervention groups?	1. Yes 2. Probably yes 3. Probably No 4. No
4.4. Was the intervention implemented successfully for most participants?	1. Yes 2. Probably yes 3. Probably No 4. No
4.5. Did study participants adhere to the assigned intervention regimen?	1. Yes 2. Probably yes 3. Probably No 4. No

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
4.6. If N/PN to 4.3, 4.4 or 4.5: Was an appropriate analysis used to estimate the effect of starting and adhering to the intervention?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk-of-bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to deviations from the intended interventions?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Bias due to missing data	
5.1 Were outcome data available for all, or nearly all, participants?	1. Yes 2. Probably yes 3. Probably No 4. No
5.2 Were participants excluded due to missing data on intervention status?	1. Yes 2. Probably yes 3. Probably No 4. No
5.3 Were participants excluded due to missing data on other variables needed for the analysis?	1. Yes 2. Probably yes 3. Probably No 4. No
5.4 If PN/N to 5.1, or Y/PY to 5.2 or 5.3: Are the proportion of participants and reasons for missing data similar across interventions?	1. Yes 2. Probably yes 3. Probably No 4. No
5.5 If PN/N to 5.1, or Y/PY to 5.2 or 5.3: Is there evidence that results were robust to the presence of missing data?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk of bias judgement	1. Low 2. Moderate 3. Serious 4. Critical

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
Optional: What is the predicted direction of bias due to missing data?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Bias in measurement of outcomes	
6.1 Could the outcome measure have been influenced by knowledge of the intervention received?	1. Yes 2. Probably yes 3. Probably No 4. No
6.2 Were outcome assessors aware of the intervention received by study participants?	1. Yes 2. Probably yes 3. Probably No 4. No
6.3 Were the methods of outcome assessment comparable across intervention groups?	1. Yes 2. Probably yes 3. Probably No 4. No
6.4 Were any systematic errors in measurement of the outcome related to intervention received?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk of bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to measurement of outcomes?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Bias in selection of the reported result	
Is the reported effect estimate likely to be selected, on the basis of the results, from...	

7. Assessing quality in Non-random control trials (ROBINS-I tool)	
7.1. ... multiple outcome measurements within the outcome domain?	1. Yes 2. Probably yes 3. Probably No 4. No
7.2 ... multiple analyses of the intervention-outcome relationship?	1. Yes 2. Probably yes 3. Probably No 4. No
7.3 ... different subgroups?	1. Yes 2. Probably yes 3. Probably No 4. No
Risk of bias judgement	1. Low 2. Moderate 3. Serious 4. Critical
Optional: What is the predicted direction of bias due to selection of the reported result?	1. Favours experimental 2. Favours comparator 3. Towards null 4. Away from null 5. Unpredictable
Overall risk of bias	
Risk-of-bias judgement	1. Low 2. Moderate 3. Serious 4. Critical

8. Assessing quality in Qualitative studies (White and Keenan tool)	
Are the evaluation questions clearly stated?	1. Yes 2. No
Is the qualitative methodology described?	1. Yes 2. No
Is the qualitative methodology appropriate to address the evaluation questions?	1. Yes 2. No 3. Insufficient detail

8. Assessing quality in Qualitative studies (White and Keenan tool)	
Is the recruitment or sampling strategy described?	1. Yes 2. No
Is the recruitment or sampling strategy appropriate to address the evaluation questions?	1. Yes 2. No 3. Insufficient detail
Are the researcher's own position, assumptions and possible biases outlined?	1. Yes 2. No
Have ethical considerations been sufficiently considered?	1. Yes 2. No 3. Insufficient detail
Is the data analysis approach adequately described?	1. Yes 2. No
Is the data analysis sufficiently rigorous?	1. Yes 2. No
Is there a clear statement of findings?	1. Yes 2. No
Are the research findings useful?	1. Yes 2. No

Appendix 2

Outcome Extraction for homelessness reviews

Study Identifier				Group descriptors					Outcome descriptors						Analysis info	
Study identifier	Accom review	Access review	Discharge review	Intervention name	Control group name	Subgroup name	Data provider	How ?	Outcome name	Outcome definition	Outcome in map	Time point measured	Upper/lower scales	Scale range	Type of analysis	Data adjustment

Outcome data - choose only one type per outcome														
Binary 2x2 table						Continuous data		Log odds ratio		Relative risk (RR)				
Treated group			Control group			Mean difference		Log odds ratio		Relative risk (RR)				
Sample size	Number of events	Prop w/ event	Sample size	Number of events	Prop w/ event	Mean	Variance of mean	Log OR	Variance of Log OR	RR	Log RR	Variance of Log RR		

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