The effectiveness of interventions to improve the welfare of those experiencing and at risk of homelessness: An updated evidence and gap map

Dr. Howard White, Dr. Ashrita Saran, Ashwani Verma, Kusha Verma

Global Evidence and Gap Map of Effectiveness
Third Edition
About this report

The mission of the Centre for Homelessness Impact is to improve the lives of those experiencing homelessness by ensuring that policy, practice and funding decisions are underpinned by reliable evidence.

To achieve this mission the Centre will contribute to the building of an evidence architecture for use by policy makers and practitioners. As first steps toward constructing this architecture, the Centre has been working with the Campbell Collaboration and Heriot-Watt University to produce and maintain with an annual update two evidence maps. These maps document the available evidence related to (1) the effectiveness of interventions to improve the welfare of individuals and families who are experiencing homeless or at risk of homelessness, and (2) issues arising in the implementation of programmes for anyone experiencing homelessness.

This report is the third edition of the report which presents the findings from the first of these maps, that is the evidence and gap map on effectiveness. This edition includes 134 additional studies, bringing the total number of studies included in the map to 394. It also includes a network analysis of study authors and their home institutions.

The categorisation of the interventions in the map has been revised in the light of user feedback on the first two editions of the map. Specifically, we have adopted a new set of intervention categories, each with several sub-categories. The map now contains 43 interventions as row headings, compared to just 16 in the previous versions. There have also been minor adjustments in the outcome classifications.

The second report in this series, on the process evaluations map, will also be updated to include critical appraisal and additional studies.

These studies included in this map underpin other digital tools created by the Centre—the Evidence Finder, a visual dashboard of all the studies included in the maps; and the Intervention Tool, which provides summaries for practitioners around the evidence for 20 of the most common interventions in homelessness. The Tool will be expanded as more evidence becomes available.

The Evidence and Gap Maps, the Evidence Finder and the Intervention Tool are available on the Centre for Homelessness Impact’s website:
https://www.homelessnessimpact.org/
About the Centre for Homelessness Impact

The Centre for Homelessness Impact champions the creation and use of better evidence for a world without homelessness. Our mission is to improve the lives of those experiencing homelessness by ensuring that policy, practice and funding decisions are underpinned by reliable evidence.

About the authors

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Foreword

In 2018 the Centre for Homelessness Impact joined forces with the Campbell Collaboration to create the first Evidence and Gap Maps for Homelessness in the world. At the time no reliable tools existed to guide decision-makers to high quality research, inform research priority setting, and help to identify key “gaps” where little or no evidence from impact evaluations and systematic reviews is available.

Our Evidence and Gap Maps were designed in response to this challenge, and provide an invaluable resource to inform a strategic approach to building the evidence base in homelessness.

This third edition of Effectiveness Studies Map includes now 394 studies – 173 more than two years ago. I am thrilled to see the marked increase in the number of rigorous studies. Although over 85% of all the studies included in the map are still from North America and less than 5% from the UK, the trend is moving in the right direction with a rise of over 50% since we created the map (28 vs 12).

These maps tell you what studies exist rather than what they say and the new edition highlights a higher concentration on areas where previous iterations of the map did not include that many studies; such areas include ‘substance misuse’, ‘education and skills’, and ‘case management’ rather than mostly focusing on ‘accommodation’ and ‘health services’.

I urge the homelessness field to reflect on the findings presented in the maps to act to continue improving the evidence architecture, but most importantly to embed reliable evidence and data in decision-making processes and structures.

The need for better use of reliable evidence in homelessness is abundantly clear, especially in light of the ongoing COVID-19 pandemic. I am looking forward to working side-by-side with leaders at all levels of government and across the field to move us closer to a society that leaves no one behind through the use of better evidence.

Dr Ligia Teixeira
Chief Executive, Centre for Homelessness Impact
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Part 3: Global Evidence and Gap Map of Effectiveness
Executive Summary

The Centre for Homelessness Impact is working with the Campbell Collaboration, Heriot-Watt University and Queen's University Belfast to create Evidence and Gap Maps on homelessness. Evidence and Gap Maps provide quick and efficient tools to highlight what evidence exists for specific interventions and outcomes.

This report presents the third edition of the Centre's first map, which focuses on effectiveness studies, in the form of systematic reviews and impact evaluations. It shows relevant evidence organized into an interactive online matrix capturing where there is evidence for different categories of intervention and how they affect a range of outcomes. This third edition of the effectiveness map includes 394 studies, including 134 new studies identified through an updated search conducted from March to June 2020.

The last twenty years have seen a growth of rigorous studies of effectiveness, measuring impact not inputs. More recently in the United Kingdom and the United States, the What Works movement prioritises making the evidence from existing reviews accessible through developing user-friendly evidence tools. While homelessness has been part of this evidence revolution, this report shows that it has been lagging behind other fields and that more local evidence is needed, as well as the evidence architecture to facilitate use of that evidence.

The Evidence and Gap Maps are a first step toward building the infrastructure necessary to end homelessness more effectively.

The first edition of this map contained 221 studies and the second 260 studies, and this third edition has 394 studies, i.e. including an additional 134 studies identified through a new search. As in previous versions of the map, this evidence is not evenly distributed, and the studies mostly do not allow us to have high confidence in study findings.

The evidence is most heavily concentrated in (1) services and outreach interventions, followed by (2) health and social care interventions and (3) accommodation and accommodation-based interventions, especially for health and accommodation outcomes. In this edition of the map the intervention category education and skills reaches a threshold of 50 studies in a cell (for health outcomes) to count as a well evidenced area.

Within these categories, evidence is focused on some types of intervention. Yet there can be vast discrepancies in the number of studies for different interventions. For instance, while there are many studies of Housing First, there are none on reconnection programmes and just one review which includes soup kitchens in its scope. Where there are such evidence gaps primary studies are needed. Where there are many studies a systematic review would be useful for guiding policy.

But even where there is evidence the critical appraisal finds that the majority of studies only allow low confidence in study findings. This low confidence largely results from the lack of any power calculation and high levels of attrition amongst study participants.

The most comprehensive systematic review of the sector to date, published by the Campbell Collaboration in 2018, reports that many interventions are effective in improving housing stability. But not everything works, and not everything is equally effective. The map shows that very few high-quality evaluations exist in the UK despite the significant number of resources devoted to evaluation each year. And most importantly, data on cost effectiveness is lacking.

The Centre for Homelessness Impact has carried out a consultation exercise to identify priority evidence needs for which evidence is lacking and then fill those gaps, either directly or indirectly. It is also working with key stakeholders to support them in undertaking rigorous evaluation of their programmes. The Centre believes an end to homelessness is an achievable goal, one it will help attain through its contribution to building the evidence architecture for homelessness.
Chapter 1

About Evidence and Gap Maps

Large numbers of people are affected by homelessness. Over half a million in the United States and some 178,000 households in Great Britain approached their local authority for statutory assistance last year. Although these numbers are contested, what is certain is that they only represent a fraction of the problem. There are many people living in unsafe or precarious situations. Crisis estimates there are 160,000 households experiencing the most acute forms of homelessness including rough sleeping, sofa surfing and sleeping in cars and tents. Added to this are people living in unstable housing or at risk of homelessness: precarious situations. These two categories are often not included in official statistics.

Crisis: cost of homelessness.

1

2

3

4

5

Such calculations assume that programmes to reduce homelessness are effective. Yet, to date, relatively few interventions have been rigorously evaluated and fewer still have shown positive results. This statement may come as a surprise to many, since there are numerous evaluations of programmes for the homeless.

But testing whether programmes are effective – that is the impact of these programmes – requires certain evaluation designs to be used - see Box 1 on evaluation approaches. Evidence from such studies are driving the emerging ‘What Works’ movement across the world.

Covid-19 has had a huge impact on the homelessness sector. Across the UK, local authorities moved to house people sleeping rough in temporary accommodation. This shows it can be done when there is political will and so may positively affect our approach to those living on the street. But the negative economic impact of covid-19, and the strain put on families under lockdown, puts many more people at risk of homelessness, so a substantial increase in homelessness must be expected.

The social costs and consequences of homelessness are substantial. People affected by homelessness die at a much younger age than the general population. Spending to reduce homelessness has been estimated to save the public purse close to £20,000 per homeless person.

As documented below and in the companion report on the implementation issues map, most evaluations of homelessness interventions in the UK have been process evaluations, not impact evaluations.

The Centre has brought the homelessness sector into the ‘What Works’ movement and is considered to be the most rigorous approach when feasible and ethical. The results of formative evaluations inform the decision whether to continue with a programme, and any changes which may be needed in design.

Box 1 Different types of evaluation studies

<table>
<thead>
<tr>
<th>Formative evaluations</th>
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<tr>
<td>Formative evaluations are used in the early stages of a new programme, or an existing programme in a new context, to test its feasibility. Common problems exposed by formative evaluations are that interventions: (1) have low acceptability amongst the target population, (2) are not implementable because of, for example, over-complex designs or unrealistic demands on available resources, e.g. the time of case workers, and (3) technical aspects that fail under field conditions. The results of formative evaluations inform the decision whether to continue with a programme, and any changes which may be needed in design.</td>
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<table>
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<tr>
<th>Process evaluations</th>
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<tr>
<td>Process evaluations may be conducted at any time during an intervention. They are mostly based on qualitative data from interviews with beneficiaries, implementers and other key stakeholders. Process evaluations document issues which may have arisen in the design and implementation of the programme, and so are useful for mid-course corrections or planning scale up.</td>
</tr>
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<tr>
<th>Impact evaluations</th>
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<tbody>
<tr>
<td>Impact evaluations are usually conducted at the end of an intervention, or some time after it has been completed. They measure what difference the programme made, usually focusing on higher-level outcomes, such as housing stability and health status. Impact evaluation designs usually include an explicit counterfactual measured using a comparison group. Random assignment into the intervention and a comparison group which receives an alternative intervention or ‘usual services’ is considered to be the most rigorous approach when feasible and ethical. The findings inform decisions whether to continue or scale up programmes, or to look for other, more effective, approaches.</td>
</tr>
</tbody>
</table>

As documented below and in the companion report on the implementation issues map, most evaluations of homelessness interventions in the UK have been process evaluations, not impact evaluations.

The Centre has brought the homelessness sector into the ‘What Works’ movement and so contribute to ending homelessness by identifying the most effective approaches to provide secure and stable housing for all. There is also a need for rigorous evidence of effective approaches to help address the problems many homeless people face which result in them falling back into homelessness.

Until the publication of the first edition of this map in 2018, there was no single resource which allowed policymakers, practitioners and researchers to access the available relevant evidence as to which programmes work.
The Centre for Homelessness Impact is a ‘one stop shop’ for evidence for policymakers and practitioners in the sector. To support this approach the Centre has been working with the Campbell Collaboration and Heriot-Watt University, to produce and maintain two evidence maps on homelessness. This report presents the third edition – that is the second annual update – of the map of effectiveness studies of what works to improve the welfare of those experiencing homelessness. We start with some background on evidence-based policy and practice.

**The rise of Evidence-Based Policy and Practice**

The language of evidence is now common across many sectors around the world. Its origins in social policy can be traced to the New Public Management agenda of the 1980s. This approach led to the adoption of ‘the results agenda’ and focussed on measuring success by outcomes instead of inputs such as how much of the programme budget has been spent. But to measure impact we cannot simply rely on measuring how outcomes have changed over time, since they are subject to change even in the absence of intervention. To deal with this challenge we require impact evaluations (see Box 1).

Most impact evaluations compare what happens to a group benefitting from a programme to that which happens to a similar group who do not participate. This group of non-participants is called the ‘comparison group’ or ‘control group’. The comparison group cannot just be any group of non-participants, they should have the same characteristics as those who benefit from the programme – similar employment histories or educational background, for example. A good way to ensure comparability between the groups is to identify those who are eligible for the programme and then assign them at random to the programme and control groups. This is called a randomised controlled trial (RCT).

Randomised controlled trials of social programmes have been undertaken since the 1940s but have seen a resurgence since the 1980s, especially in the last 15 years, with growing use in policy. A striking example of their use can be found in ‘hotspot policing’ that focuses police on high-crime hot spots. An RCT conducted in Minnesota in the late 1980s showed the approach reduced crime. Subsequent trials across the United States showed the approach reduced crime. Subsequent trials across the United States found similar results, as summarised in a Campbell Collaboration review published in 2008. Based on this evidence, hot spot policing has been widely adopted.

More importantly, a culture of evidence use is now commonplace in policing, and several countries now have Societies for Evidence based Policing, bringing together researchers and working police officers. Similarly, courses on evidence-based policing are offered in leading research institutions.

For example, in 2011 Stephen Williams, a police officer from Trinidad and Tobago, attended a course at the University of Cambridge delivered by Larry Sherman, the professor who conducted the 1980s Minnesota study. A year later, Williams became acting Commissioner of the Trinidad and Tobago police and invited Sherman to give a series of courses on evidence-based policing. Subsequently Sherman and Williams implemented an RCT of hot spot policing in the country, rolling the programme out based on its findings.

Impact evaluations have also played an important role in other sectors in developing countries. The best-known examples are studies of conditional cash transfers (CCT), which are grants made to poorer families on the condition that they fulfil certain pre-specified conditions – like sending their children to school. The first such study was an RCT of the Progresa programme in Mexico, which started in the mid-1990s. The study showed the positive impact of the CCT on poverty, and access to health and education. These findings convinced the new government – and successive governments – to maintain the programme. A similar story can be told about Colombia’s CCT, Familias en Acción. In Brazil, the president commissioned an impact evaluation of the Bolsa Familia programme to be able to address critics of the programme, especially those who argued it discouraged the poor from entering the labour market. The study showed it did not, and Bolsa Familia continued to expand, reaching over 12 million families by 2012.

The above examples are cases in which programmes have been widely tested.

Another study in Minnesota tested the impact of mandatory arrest of suspected perpetrators of domestic violence. Researching those subject to mandatory arrest was just 13 percent compared to 26 percent for those subject to existing practices of either counselling or temporary removal from the scene. The study attracted widespread attention. By the early 2000s, 75 percent of police districts had mandatory arrest programmes. But studies of the programme in five cities found mandatory arrest to be no better than the alternatives and in two cases it was worse. The authors of the original Minnesota study said they thought the evidence from their study did not warrant a scale up of the programme. Evidence-based policy is not a blueprint approach. What worked in one place has to be tested for adoption elsewhere.

For example, with Nurse Family Partnership, in which nurses make home visits to young mothers from disadvantaged backgrounds, three studies in the United States found positive impacts from the intervention. NFP was widely adopted on the basis of this evidence. But RCTs of NFP in the UK and the Netherlands found its effects to be weak or non-existent. The likely explanation is the difference in context. The control group in these studies get ‘usual services’, which in European countries includes good quality health services – including health visitors for young mothers. In other words, the control group gets services very similar to NFP so the programme has no impact in that context.

An evidence-based approach should not rely on single studies. In order to guide policymakers considering adopting new programmes or redesigning existing ones it is useful to pull together all existing evidence on programme effectiveness. This is true for homelessness just as much as it is for fields like policing and international development. This summarizing of the available body of evidence is done by systematic reviews. The
systematic approach of systematic reviews avoids possible sources of bias in traditional literature reviews.

A good systematic review does not just consider the average effect of a programme from all available studies, but analyses the reasons for variations in effect which may to do with programme design, implementation, population characteristics or contextual factors.

But systematic reviews are often long academic reports which are not likely to be read by policymakers and practitioners. Knowledge brokering is necessary to make this evidence available to intended users in an accessible form. In the last few years evidence platforms, or evidence portals, have become widely available, like those provided by the What Works Centres in the United Kingdom and the What Works Clearinghouses in the United States. The Education Endowment Foundation's Teacher and Learning Toolkit is a leading example. A survey by the UK National Audience Office found that 66 percent of school managers reported using the toolkit to help decide how to allocate school resources.

What is an Evidence and Gap Map?

An Evidence and Gap Map (EGM) is a presentation of the available, relevant evidence for a particular sector. We say ‘relevant evidence’ is because different types of evidence are needed to address different questions, so maps are made for particular research questions using different types of evidence. We have produced maps for both impact evaluations (the effectiveness map) and process evaluations (the implementation issues map).

The map is a table or matrix which provides a visual presentation of the evidence. In the homelessness map the rows are intervention categories and the columns are indicator categories. The indicators also have sub-categories. For example, the ‘employment and income’ indicator has four sub-categories: (1) access to welfare benefits, (2) earned income, (3) employment status (paid and unpaid work), and (4) forced labour and sex work.

Prior to the tools developed by the Centre in recent years, there was no such evidence architecture for the homelessness sector. The Centre for Homelessness started building this architecture by investing in the two Evidence and Gap Maps which were used to commission a series of systematic reviews and to inform the content of the intervention tool.
The map has additional dimensions which capture study or intervention characteristics, like study design, location and population sub-group. These characteristics can be applied as filters in the online versions so that only studies which apply to the specific groups chosen are shown in the map.

The online versions of the map are interactive so that users may click on entries to see a list of studies for any cell in the map. Clicking on study names shows the database record for the study which include the URL to link to the study itself.

**The use of evidence and gap maps**

Evidence and gap maps:

- **Guide users to available relevant evidence to inform strategy and programme development.** Using a map is an efficient and reliable way for policymakers and practitioners to find evidence of what works. The map structures the evidence to guide the user to the area they are interested in and the studies have been screened to ensure that only relevant studies are included. In a map of effectiveness studies like the homelessness map, only impact evaluations and systematic reviews of effects are included.

- **Tell users where there is no relevant evidence or where there is demand for evidence-based programmes.** If a map shows there is no evidence for a particular intervention/outcome combination then it is not possible to select or design programmes based on available evidence as it simply does not exist. There is also no point in conducting systematic reviews in these areas as they will be what are known as ‘empty reviews’. Rather, new primary studies are needed.

- **Identify areas with many primary studies and no reviews so that reviews are feasible and useful.** Areas with several existing reviews can be candidates for reviews of reviews which summarise the evidence for existing systematic reviews.

- **Provide the basis for evidence-based decision-making products.** Decision-makers may not read research reports. Evidence-based decision-making products enable them to make evidence-based decisions without reading the underlying research. The Centre's Intervention Tool is an example of such a product.

**Examples of the use of maps**

The Swedish Agency for Health Technology Assessment and Assessment of Social Services (SBU) uses mapping to identify ‘scientific uncertainties’ – that is areas in which evidence is lacking – and then runs an annual research competition to fill priority gaps. For example, in one year SBU identified gaps in the evidence base with respect to ADHD and then, through a consultation exercise, identified the top ten priority evidence needs for which evidence was lacking.

Evidence and Gap Maps of the sort published by the Campbell Collaboration were first developed in recent years in the field of international development by the International Initiative for Impact Evaluation (3ie). 3ie has used maps to shape grant programmes for research in areas like agricultural innovation, immunisation, and water supply and sanitation.

The International Rescue Committee (IRC), an international NGO focused on humanitarian and post-conflict interventions, has used maps as the basis for developing an evidence-based outcome framework. The outcome framework is used with evidence maps across a range of intervention categories, such as health and education, to guide IRC programme managers to relevant evidence as to which approaches to use to achieve specific outcomes.

And a map of interventions for people with disabilities has been used by DFID to shape a new £7 million research programme and to identify topics for rapid reviews for a planned global summit. The repaid reviews are being turned into full Campbell reviews in a follow on project. The decision to produce a map on disability was itself the result of gaps identified in a ‘map of maps’.  

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What evidence is included in the map?

The Evidence and Gap Map of the Effectiveness of Interventions for Homelessness shows the available evidence on the success of interventions in improving the lives of those who experience, or are at risk of experiencing, homelessness.

The map shows both impact evaluations and systematic reviews of impact evaluations. Impact evaluations are studies using quantitative approaches to measure what difference the programme made to outcomes like housing stability (see Box 1 above). Systematic reviews are studies which summarise all available relevant evidence for a particular issue or question, using a systematic approach to identify, codify, and summarise all relevant studies in a topic. Systematic reviews which summarise evidence from impact evaluations are called ‘effectiveness reviews’. See Box 2 for examples of studies included in the map.

The Campbell Collaboration is an international research network which publishes best practice standards for systematic reviews and evidence maps. Campbell Systematic Reviews are the global repository of policy-relevant reviews and maps. All reviews and maps produced by the Centre will be produced to Campbell standards and published in Campbell Systematic Reviews.

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**Box 2 Examples of studies included in the map**

**Impact evaluations**

‘Housing Placement and Subsequent Days Homeless Among Formerly Homeless Adults with Mental Illness’ (Goldfinger, 1999)

‘Randomized Trial of Intensive Housing Placement and Community Transition Services for Episodic and Recidivist Homeless Families’ (Levitt, 2013).

**Systematic reviews**

‘Effective Interventions for Homeless Youth: A Systematic Review’ (Altena et al., 2016)

‘Interventions to Improve the Health of the Homeless: A Systematic Review’ (Hwang et al., 2005).

An example of an RCT is a study of Housing First in five Canadian cities: ‘A Multiple-City RCT of Housing First with Assertive Community Treatment for Homeless Canadians With Serious Mental Illness’ (Aubry et al., 2015). Participants in the study were homeless or precariously housed people with serious mental illness and were referred to the study team by health and social service agencies. Of 950 referrals classified as high-need participants, 460 were randomly assigned to receive Housing First with Assertive
Community Treatment (ACT) with the remaining referrals receiving the usual services provided to this group.

Where randomisation is not feasible, there are non-experimental approaches which use statistical methods to try to ensure the comparability of the comparison group. These approaches have technical names like ‘propensity score matching’ and ‘regression discontinuity designs’. Our evidence standards classify these different methods by the quality of evidence they provide (see Box 3). Different standards will be applied to our map of process evaluations.

**How will the Centre for Homelessness Impact use Evidence and Gap Maps?**

The Centre will improve the welfare of people affected by homelessness by providing evidence-based resources for policymakers and practitioners. The evidence and gap maps are the first part of that evidence architecture. They have been a building block for the Centre's Intervention Tool.

The maps are informing the development of an outcomes and impact framework that takes a systems wide perspective towards ending homelessness. This will help guide the Centre's investments and strategic collaborations. It may also provide a resource to aid the improvement of local and national government, foundations, and organisations in the third and private sectors.

In addition, the maps identify the evidence to be used in the Centre's online evidence resources and inform the future policy-oriented research programme of the Centre. The Centre is also commissioning new studies to assess the effectiveness of programmes for those affected by homelessness. The maps, which will be updated annually, will inform the identification of priority areas where evidence is currently lacking.

The maps also show that there are considerable bodies of evidence in some areas, but comparatively few systematic reviews – and that the reviews are concentrated in health and supported accommodation interventions. The majority of reviews are of, at best, moderate quality. Most of the available evidence has not been synthesised sufficiently well to draw out available lessons for policy and practice. The Centre has already commissioned three new systematic reviews, which are based on studies contained in the maps, which will be published during 2020, and is in the process of commissioning a fourth.

**Chapter 2**

**What does the homelessness map show?**

**An introductory overview**

There is a substantial body of evidence. The latest version of the map contains 394 studies, compared to 221 studies in the first edition (2018) and 260 in the second edition (2019). The 394 studies comprise 45 systematic reviews and 349 primary studies, but this evidence is unevenly spread by intervention category and geography.

We categorise the studies in nine intervention categories (Legislation, Prevention, Services and Outreach, Accommodation and accommodation-based services, Employment, Health and social care, Education and skills, Communications and Financing) and 43 sub-categories. More details on the definitions of each of these categories can be found in Appendix 1.

The largest intervention categories are ‘services and outreach’ and access to ‘health and social care’ with 192 studies and 164 studies respectively. The third largest category is ‘accommodation and accommodation-based services’ with 145 studies (see Figure 1).

Other categories have only a few studies. For instance, Legislation has only three studies and Communication just two.

The coverage for sub-categories is also very uneven. While some interventions, notably Housing First, have 60 studies, other very common interventions such as hostels do not have more than one study - a systematic review - included in this map (for more detail on specific interventions and sub-categories see below).

Of the 349 primary studies, 210 are randomized controlled trials, which demonstrate the feasibility of this evaluation method in the sector (see Figure 2).
The number of studies has risen over time. The map contains an average of 3 studies a year before 2000, six a year from 2000-05, 13 a year from 2006-10, 20 a year in the years from 2011-14 and 35 a year from 2015-2019 (Table 1).

### Table 1 Number of studies by time period

<table>
<thead>
<tr>
<th>Period</th>
<th>No. of included studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-94</td>
<td>3</td>
</tr>
<tr>
<td>1995-99</td>
<td>25</td>
</tr>
<tr>
<td>2000-04</td>
<td>33</td>
</tr>
<tr>
<td>2005-09</td>
<td>60</td>
</tr>
<tr>
<td>2010-14</td>
<td>90</td>
</tr>
<tr>
<td>2015-20</td>
<td>182</td>
</tr>
</tbody>
</table>

How did we create the Centre’s evidence and gap map?

The Evidence and Gap Map is based on a review of the global evidence from a systematic search of electronic databases, selected websites and journals. In addition to updating the database search and screening the references in newly identified systematic reviews and other literature reviews (e.g. Evans, 2019), we used the results from the machine learning-based search functionality in EPPI Reviewer which is based on the Microsoft Academic database for over 2 billion studies. More details on the search strategy used can be found in the published protocol White et al. (2019).

This updated map contains the 260 studies from the previous map plus an additional 134 studies identified through a new search. This new search was conducted up until March 2020 and identified 3,234 potentially relevant new studies, this number reduced to 2,106 once duplicates were removed (see Figure 3).

These 2,106 studies were screened by two screeners for relevance against our inclusion criteria. That is the study had to be a study of the effectiveness of interventions to improve the wellbeing of people experiencing or at the risk of experiencing homelessness.

The screening is a two stage process. All 2,106 new records were screened by title and abstract, leaving 270 studies to be screened for full text. Of these 136 were excluded, and 134 new studies included, bringing the total count of included studies for this effectiveness map to be 394.

To minimise the risk of missing studies and to minimise the role of judgement, screening and coding is done by two researchers independently. Any discrepancies in their answers are discussed and referred to a third party if they cannot agree.

Each included study was double-coded, meaning that two people record the details of the study, including the intervention category it refers to, the indicators it measures, and data on the other filters described above.
In addition to updating the search we also revised the map framework, that is the intervention and outcome categories. The original categories were developed through a process of examining existing classification system and stakeholder consultation including two workshops convened specifically to develop the map categories. After publication of the second edition, the Centre reconsidered the framework, proposing a more elaborated set of intervention categories, with 43 named interventions as row headings compared to 16 in the earlier versions.

**EGM findings: further detail**

Table 2 shows the aggregate map, showing the intervention-outcome matrix. Areas with a high level of evidence (50 or more studies) are found under health and social services, services and outreach and accommodation and accommodation-based services, with the main outcomes being housing stability, health, and capabilities and well-being. Having 50 studies for education and skills shows the emergence of a new well-evidenced area in this edition of the map.
Table 2 Aggregate Evidence and Gap Map

<table>
<thead>
<tr>
<th></th>
<th>Legislation</th>
<th>Prevention</th>
<th>Services and outreach</th>
<th>Accommodation &amp; accommodation based services</th>
<th>Employment</th>
<th>Health and social services</th>
<th>Education and skills</th>
<th>Communication</th>
<th>Financing</th>
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<tbody>
<tr>
<td>Capabilities &amp; wellbeing</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>58</td>
<td>10</td>
<td>100</td>
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<tr>
<td>Crime &amp; justice</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>19</td>
<td>15</td>
<td>19</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Employment and income</td>
<td>1</td>
<td>31</td>
<td>21</td>
<td>32</td>
<td>3</td>
<td>32</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>51</td>
<td>51</td>
<td>100</td>
<td>23</td>
<td>100</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Housing stability</td>
<td>2</td>
<td>53</td>
<td>113</td>
<td>99</td>
<td>18</td>
<td>99</td>
<td>17</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public attitudes, engagement</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Other areas of the map, notably in legislation, communication and financing are largely empty.

The sub-categories for interventions and indicator sub-categories which are the most heavily populated cells on the map are the following:

- There are many studies on addiction support for people at risk of or experiencing homelessness especially on substance abuse (70 references), with a reasonable number of studies also exploring the impacts of these interventions on other outcomes such as mental health (36 studies) and accommodation status (30 studies).
- There is also a good deal of evidence for case management interventions across a range of outcome sub-domains, notably accommodation status (81 studies), most health sub-domains (notably mental health with 67 studies and substance abuse with 69, but also access to mainstream health care and physical health and nutrition with 37 and 32 studies respectively). There is also a reasonable amount of evidence regarding impact on overall wellbeing (30 studies) and employment status (27 studies), but less on the other areas of wellbeing, on employment and income, or on cost.
- A similar pattern is observed for Housing first with 44 studies on housing stability, 31 for mental health and 29 for substance abuse. There are also 20 studies for access to mainstream health and 15 for physical health and nutrition. However, there is not much evidence on employment status (6 studies).
- A similar pattern is identified for social housing with or without support for which there are 35 studies regarding housing stability, 21 on mental health and 21 on substance abuse. And 14 and 15 studying access to mainstream health and physical health and nutrition respectively.

Where is the evidence from?

The evidence comes largely from North America. Over 80 per cent of studies (352) refer to interventions in North America (Table 3), compared to just 11 from Australia, 49 for the whole of Europe. There are 28 studies from the UK included in this version of the map of which 13 are systematic reviews. So, there are 15 UK primary studies in the map.
Table 3 Number of studies for selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Primary study</th>
<th>Systematic review</th>
<th>Total</th>
<th>Share total studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>2.8</td>
</tr>
<tr>
<td>Canada</td>
<td>45</td>
<td>12</td>
<td>58</td>
<td>14.2</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8</td>
<td>1</td>
<td>9</td>
<td>2.2</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15</td>
<td>13</td>
<td>28</td>
<td>6.9</td>
</tr>
<tr>
<td>United States</td>
<td>265</td>
<td>38</td>
<td>302</td>
<td>74.0</td>
</tr>
</tbody>
</table>

Evidence-based policy and practice is not a blueprint approach. European countries, including the UK, should learn from the North American experience but not simply copy it. The map demonstrates the need for more primary studies of promising interventions in different contexts across Europe. The map also shows that rigorous impact evaluations of these programmes are possible, including RCTs.

Where are the gaps?

There are many blank cells in the map, which lay mainly in the less well populated intervention and indicator categories. The largest gaps are for legislation, financing and communication. There is also a lack of evidence on prevention and employment. There are few studies related to justice indicators, public attitude and perception and cost.

Another striking gap is the relative lack of systematic reviews. In health it is sometimes the case that there are more reviews on a subject than there are primary studies. But the homelessness map shows many areas in which there is a wealth of primary studies (though mainly of North American evidence) which have not been subject to detailed review.

More detailed analysis of gaps will require intervention and outcome-specific analysis. For example, there are several studies of Critical Time Interventions but nearly all these studies refer to transitions from mental health facilities or analyse mental health outcomes. There is a much smaller evidence base for those leaving prison or the military.

The quality of studies included in the map: confidence in study findings

How do we assess confidence in study findings?

Decision-making is preferably guided by high quality evidence. For this reason evidence synthesis often includes a process called critical appraisal. Critical appraisal is the assessment of study quality using explicit, transparent assessment criteria. This is done using a checklist, commonly referred to as a tool. The critical appraisal tool has to be appropriate for the study design. So, two separate critical appraisal tools are used to assess the quality of studies in evidence map: one for primary studies and one for systematic reviews.

The critical appraisal tool used for primary studies is one developed by the Campbell Collaboration for use with maps and reviews. The tool has been developed with the intention of being short, focused on some major issues related to the confidence we can have in the study findings. Indeed, it is more appropriate to speak about confidence in study findings rather than quality which implies a judgement on the research team: researchers may face many constraints in implementing studies so the best study possible under the circumstances may still be one in which we cannot have high confidence in study findings.

The tool for primary studies has seven items which relate to 1) study design, 2) blinding, 3) power calculations, 4) attrition, 5) description of the intervention, 6) outcome definition and 7) baseline balance. A fuller description of these items is given in the technical appendix. Each of these seven items is rated as implying high, medium or low confidence in study findings. Overall quality is assessed using the ‘weakest link in the chain’ principle: our confidence in study findings can only be as high as the lowest rating given to any of the critical items (which are numbers 1, 4, 6 and 7).

For systematic reviews we use AMSTAR 2 (‘Assessing the Methodological Quality of Systematic Reviews’). This checklist has 16 items which cover: (1) PICO in inclusion criteria, (2) ex ante protocol, (3) rationale for included study designs, (4) comprehensive literature search, (5) duplicate screening, (6) duplicate data extraction, (7) list of excluded studies with justification, (8) adequate description of included studies, (9) adequate risk of bias assessment, (10) report sources of funding, (11) appropriate use of meta-analysis, (12) risk of bias assessment for meta-analysis, (13) allowance for risk of bias in discussing findings, (14) analysis of heterogeneity, (15) analysis of publication bias, and (16) report conflicts of interest.
Confidence in study findings

Figure 4 shows the results of the critical appraisal of the 349 included primary studies. Over 50 per cent of all studies are rated as low confidence in study findings, with around one fourth being each of medium confidence and high confidence respectively.

This suggests that while the number of studies is relatively large, there are some existing challenges that limit the confidence that can be placed on some of these studies and underscore the need to invest in more, better studies of effectiveness.

The high number of studies for which we have low confidence is largely driven by two factors: attrition and absence of power calculations. Attrition is rarely reported in the studies, and differential attrition (the difference in the rate of attrition between the treatment and control groups) was reported in only a few studies. However, it is often possible to calculate attrition from the data presented in the tables and text. Where this can be done, high rates of attrition are common. Bond et al. (1990) report 34 per cent attrition at 12 month follow up for their study of Assertive Community Treatment. It is not surprising that attrition is high for many of these interventions since they target people with unstable lifestyles, many with histories of mental health issues and substance abuse. Differential attrition is also likely as there is less regular contact with the control group, and they are not receiving the intervention which, if successful, would stabilise their lifestyle.

However, high attrition is not necessarily a problem for all studies: the case, as shown by the fact that one-third of studies are rated as high confidence on this criterion. This success may depend on the intervention, e.g. targeted at prisoners who only attrite by refusal, but cannot disappear for follow up; but it may also reflect the methods used to track study participants, e.g. by offering some types of incentives. This would be a useful topic for a methods study to inform future research designs.
Sample size is important to be confident in study findings. Studies with small sample sizes may be underpowered which means that there is a risk that they will fail to find a significant effect for interventions which work. The required sample size depends on a number of factors. The research design for primary studies should use information on these factors for what is called a power calculation which gives the required sample size. Most studies fail to report any power calculation.

**Box 3 Assessing the quality of evidence: study design categorisation**

Each study in the map has a rating for the quality of evidence. The quality ratings refer to how confident we can be in the study findings.

One important factor which has an impact on the overall quality ratings is the study design. The categories are:

**High reliability**

- Randomised control trials: A study in which people are randomly assigned an intervention. One group receives the intervention being tested, and a second control group receives a dummy intervention, or no intervention at all. These groups are compared to assess how effective the experimental intervention was.

- Natural experiments: A study in which people are exposed to either experimental or control conditions by natural factors. While not controlled in the traditional sense, the assignment of interventions may still resemble randomised assignment. These groups are compared to assess how effective the experimental intervention was.

**Medium to high reliability**

- Regression discontinuity design: A study in which people are assigned to intervention or control groups based on a cut-off threshold before the start of the test. Comparing the results from either side of the threshold (those who have received an intervention and those who haven’t) provides an estimate of the intervention’s effect where randomisation isn’t possible.

- Interrupted time series: A study that measures a particular outcome at multiple points in time, both before and after the introduction of an intervention. This aims to show whether the effect of the intervention is greater than any pre-existing or underlying factors over time.

**Network Analysis**

An addition to this latest edition of the effectiveness map is a network analysis of authors and organizations. This analysis not only shows the authors and institutions which have the largest number of studies in the map but also clusters of authors and institutions which co-author papers together. The results of the network analysis are thus of interest to those wishing to identify active researchers and research institutions in the field. The results of the analysis will be used in the dissemination of the map and the Centre’s other evidence products.

**Network analysis of included studies by authors**

There are 61 studies in which one author had more than one study in the area. Vicky Stergiopoulos (Li Ka Shing Knowledge Institute of St. Michael's Hospital, Toronto, Canada), who has co-authored 16 papers, has the largest number of publications included in the map. She is followed by Robert Rosenheck (Yale School of Medicine) who has 15 publications, 3 as lead author and 12 as co-author, Joseph E Schumacher (University of Alabama at Birmingham, United States of America) who has 14 publications, four as lead author and ten as co-author and Julian M Somers (Simon Fraser University, Canada) who has 13 publications, two as lead author and eleven as co-author (see Table A.5).

Of the six organizations that have over 10 publications included in the map; two are from Canada and four from the United States of America (see Table A.6).

**Co-authorship network of included studies**

Figure 5 shows giant components’ i.e. the components in the network that include the largest number of authors. Smaller components are not shown. Each node represents individual authors with at least three publications. Links between the nodes (edges) represent a co-authored publication. The node size is scaled by betweenness centrality; high betweenness centrality indicates that an author is frequently identified if you want to connect other authors in the co-authorship network with one another, and he/she lies “between” them as an intermediary. So for example, an author who has co-authored five papers all with the same co-author has less betweenness centrality than one who has co-authored five papers, each with a different co-author, as that author is a node linking the other four co-author, i.e. she lies “between” them as an intermediary. Most influential co-authorship networks or the most co-occurrences are seen from Vicky Stergiopoulos and from Julian M Somers as depicted in Figure 5.
Analysis of included studies by organization

The largest number of publications in the map from a single institution is from the University of California (23) and followed by University of Toronto (22) and The Ohio State University (22) (see Table A.7).

Of the five organizations which have over 10 publications included in the map, two are from Canada and three from the United States of America.

Co-authorship network by research organization

Figure 6 shows giant components i.e. the components in the network that include the largest number of publications, and smaller components are not shown. Each node represents individual research organizations with more than two publications. Links between the nodes (edges) represent co-authored publications between organizations.
Chapter 3

Next Steps

The evidence map provides a valuable snapshot of the available evidence on the effectiveness of interventions for the homeless, but it does not tell us what that evidence says. It also assesses the quality of the evidence base. The maps have been used as a building block for the Centre to construct an evidence architecture for the field. As the maps are updated each year the growing evidence base allows the Centre to enrich and strengthen its other evidence products: from commissioning new systematic reviews where there is a substantial critical mass to updating the intervention tool to incorporate new insights from studies.

The Centre's work is based on co-creation of evidence products to support relevance and use of the Centre's work. This approach has underpinned the development of the evidence map framework and will be part of translating the evidence into evidence products.

The map also points to evidence gaps. The Centre for Homelessness Impact has carried out a consultation exercise to identify priority evidence needs for which evidence is lacking. The Centre is now working to fill those gaps, either directly or indirectly. It will also work with key stakeholders to support them in undertaking rigorous evaluation of their programmes.

To better populate the map, the Centre is working with the Campbell Collaboration and other teams to produce a series of systematic reviews for key interventions in the sector. The first set of reviews are on discharge programmes, improving access to health and social services and accommodation and accommodation-based interventions – these will be published later in 2020.

The Centre believes an end to homelessness is an achievable goal, one it will help attain through its contribution to building the evidence architecture for homelessness. Our work on the evidence maps to date has helped illustrate this. There is evidence available – much more than many people may have suspected. Whilst most of this evidence is from North America we can learn from it, and it shows the sorts of studies which can also be conducted in the UK. The maps will continue to be an important part of the Centre's work and guide the community's use of evidence.

### Appendix 1

<table>
<thead>
<tr>
<th>Intervention categories and description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>Legislation</td>
</tr>
<tr>
<td>Housing/Homelessness Legislation</td>
</tr>
<tr>
<td>Welfare Benefits</td>
</tr>
<tr>
<td>Health and social care legislation</td>
</tr>
<tr>
<td>Prevention</td>
</tr>
<tr>
<td>Welfare and Housing Support</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Housing supply</td>
</tr>
<tr>
<td>Family mediation and conciliation</td>
</tr>
<tr>
<td>Landlord-tenant mediation</td>
</tr>
<tr>
<td>Discharge interventions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Intervention sub-category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services and outreach</td>
<td></td>
<td>Marked if any sub-category in this category is marked</td>
</tr>
<tr>
<td>Direct feeding (e.g. soup runs)</td>
<td></td>
<td>Provision of food in street and day centre settings to people experiencing homelessness.</td>
</tr>
<tr>
<td>In-kind support (exc. food)</td>
<td></td>
<td>Provision of clothing, hygiene products, household items etc., but excluding food</td>
</tr>
<tr>
<td>Day centres</td>
<td></td>
<td>Centres open only during the day to provide food and services for people experiencing homelessness. This code is used if the day centre itself is being evaluated in the study rather than being the setting for the intervention.</td>
</tr>
<tr>
<td>Outreach</td>
<td></td>
<td>Outreach refers to work with people sleeping rough or in temporary or unstable accommodation. Outreach workers go out, including late at night and in the early hours of the morning, to locate people who are rough sleeping or work with day centres, shelters etc. The role of outreach teams varies but usually outreach workers seek to engage with people and check their immediate health and wellbeing, collect basic information about their situation, facilitate access to emergency accommodation or other accommodation (such as hostels or Housing First), and inform them about day centres and other services they might have available. Outreach models vary and may include enforcement (e.g. police officials) to remove people from the streets or enforce specific behaviours.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Intervention sub-category</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Reconnection of people experiencing street homelessness</td>
<td></td>
<td>Reconnecting people experiencing homelessness (rough sleepers) or at risk of homelessness (e.g. discharges) to their ‘home’ location (usually another city, state or country where they have networks, access to services, etc) by providing the cost of transport for relocation.</td>
</tr>
<tr>
<td>Psychologically informed environments</td>
<td></td>
<td>Psychologically informed environments are interventions designed to take into account the psychological profile of the client. Community Reinforcement Approach (CRA) is included here.</td>
</tr>
<tr>
<td>Case management (inc. Critical Time Intervention)</td>
<td></td>
<td>Individual-level approach to ensure coordination of services. The case worker (can be social worker or dedicated case worker from another agency) works directly with the client to ensure that the client has access to all applicable services e.g. health, training and social activities. A specific application of the case work approach is critical time intervention (CTI) which provides a person (or family) in transition between types of accommodation and at risk of homelessness with a period of intensive support from a caseworker. The caseworker will have established a relationship with the client before the transition – for example, before discharge from hospital or prison. Critical time intervention involves three stages: (1) direct support to the client and assessing what resources exist to support them, (2) trying out and adjusting the systems of support as necessary, and (3) completing the transfer of care to existing community resources.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Intervention sub-category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service coordination, co-location or embedded in mainstream services</td>
<td></td>
<td>System-based approaches to ensuring coordination of service delivery. Coordination may refer to ensuring communication between relevant services. Coordination also includes providing services in the same location or adjacent to mainstream services. Co-location refers to multiple services being available in the same physical location (e.g. housing and job search services in the same location). Embedded refers to services being integrated in the same place (e.g. housing and other services within a hospital context). A specific example is coordinated assessment. Refers to case workers making broad assessments of people at risk as homelessness on different factors that affect their risk. Try to ensure different services employ the same assessment tools to standardise practice.</td>
</tr>
<tr>
<td>Veterinary services</td>
<td></td>
<td>Access to veterinary services for pets of people experiencing homelessness</td>
</tr>
<tr>
<td>Legal advice</td>
<td></td>
<td>Legal assistance and advice delivered away from primary service/office to the homeless population.</td>
</tr>
<tr>
<td>Accommodation and accommodation-based services</td>
<td>Shelters</td>
<td>Homeless shelters are a basic form of temporary accommodation where a bed is provided in a shared space overnight. One of the key features of a homeless shelter is that it is transitional and an option for those homeless who are not yet eligible for more stable accommodation. Shelters are not usually seen as stable forms of accommodation as the individual must vacate the space during daytime hours with their belongings. One of the key differences with hostels is the need to vacate the premises during the day.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Intervention sub-category</td>
<td>Definition</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hostels</td>
<td></td>
<td>Hostels for homeless people are designed to provide short-term accommodation, usually for up to two years depending on available move-on accommodation. Typically shared accommodation projects with individual rooms and shared facilities including bathrooms and kitchens. Hostels have staff on site 24 hours a day and during the daytime provide support to residents on issues including welfare benefits and planning their move from the hostel into more medium to long-term accommodation.</td>
</tr>
<tr>
<td>Temporary accommodation</td>
<td></td>
<td>Temporary accommodation includes a range of housing options which are more stable than shelters or hostels, such as transitional housing and residential programmes.</td>
</tr>
<tr>
<td>Host homes</td>
<td></td>
<td>Emergency Host homes are emergency short-term placements in volunteers’ own homes in the community for people who are homeless or at risk of homelessness. Hosting services are often aimed at young people with low support needs, but exist for other groups too, such as people who have been refused asylum.</td>
</tr>
<tr>
<td>Rapid Rehousing</td>
<td></td>
<td>Rapid rehousing places those who experiencing homelessness into accommodation as soon as possible. The intervention provides assistance in finding accommodation, and limited duration case work to connect the client to other services.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Intervention sub-category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing First</td>
<td></td>
<td>Housing First offers accommodation to homeless people with multiple and complex needs with minimal obligations or conditions being placed upon the participant. Housing First provides safe and stable housing to all individuals, regardless of criminal background, mental instability, substance abuse, or income.</td>
</tr>
<tr>
<td>Social housing (with or without support)</td>
<td></td>
<td>Housing that is provided in the social sector. It may sometimes be provided alongside support services, this may be temporary or permanent. Examples of support that may be provided are health and money management (excluding Housing First and Rapid Rehousing). This is based on an institutional setting.</td>
</tr>
<tr>
<td>Private Rental Sector (with and without support)</td>
<td></td>
<td>Housing that is provided in the private rental market where the tenant is fully responsible. This may or not include additional support services as the focus is on the type of tenancy agreement (private).</td>
</tr>
<tr>
<td>Continuum of Care</td>
<td></td>
<td>An approach to accommodation whereby people experiencing homelessness move through different forms of transitional accommodation until they are deemed ‘housing ready’ (e.g. stopped substance abuse) and allocated independent settled housing.</td>
</tr>
<tr>
<td>Employment</td>
<td>Mentoring, coaching and in-work support</td>
<td>Mentoring and coaching to support job search including activities like practice interviews, review CVs, etc and on the job support for work performance.</td>
</tr>
<tr>
<td>Flexible employment</td>
<td></td>
<td>Employment which can accommodate needs for the person experiencing homelessness.</td>
</tr>
<tr>
<td>Intervention</td>
<td>Intervention sub-category</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Vocational training and unpaid work experiences</td>
<td>Vocational training and unpaid work experiences</td>
<td>Unpaid job placement or vocational training to provide work experience for people experiencing, or at risk of, homelessness.</td>
</tr>
<tr>
<td>Paid work experiences</td>
<td>Paid work experiences</td>
<td>Paid job placement to provide work experience for people experiencing, or at risk of, homelessness.</td>
</tr>
<tr>
<td>Health and social care</td>
<td>Health services (physical and mental)</td>
<td>Providing direct access to, or facilitating access to, physical and mental health services for people experiencing homelessness.</td>
</tr>
<tr>
<td>End of life care</td>
<td>End of life care</td>
<td>End of life care for people experiencing or at risk of homelessness.</td>
</tr>
<tr>
<td>Addiction support</td>
<td>Addiction support</td>
<td>Services for people experiencing, or at risk of, homelessness who have substance misuse problems (including alcohol and other substances).</td>
</tr>
<tr>
<td>Education and skills</td>
<td>Life and social skills training</td>
<td>Life and social skill training including socio-emotional skills, financial literacy (money management), tenancy management, and how to deal with ones home; for people experiencing or at risk of homelessness.</td>
</tr>
<tr>
<td>Mainstream education</td>
<td>Mainstream education</td>
<td>General education at all levels for people experiencing, or at risk of, homelessness including children in families at risk of or experiencing homelessness.</td>
</tr>
<tr>
<td>Homelessness awareness programmes in schools</td>
<td>Homelessness awareness programmes in schools</td>
<td>School-based programmes to raise awareness of homelessness [Not interventions to help school aged children attend school; these are under mainstream education].</td>
</tr>
<tr>
<td>Recreational and creative activities</td>
<td>Recreational and creative activities</td>
<td>Recreational, social (e.g. social clubs) and creative (e.g. theatre) activities for people experiencing homelessness.</td>
</tr>
<tr>
<td>Communication</td>
<td>Advocacy campaigns</td>
<td>Campaigns by 3rd sector organisations which aim to improve awareness of the general public of homelessness, its causes, and its solutions, and promote rights of the homeless.</td>
</tr>
<tr>
<td>Public information campaigns</td>
<td>Public information campaigns</td>
<td>Campaigns by government organisations which aim to improve awareness of the general public of homelessness, its causes, and its solutions, and promote rights of the homeless.</td>
</tr>
<tr>
<td>Service availability</td>
<td>Service availability</td>
<td>General communication activities to raise awareness amongst people experiencing homelessness, or at risk of homelessness, of the services available to them. Does not include case management, discharge etc which provides information or connects individuals to services.</td>
</tr>
<tr>
<td>Financing</td>
<td>Social Impact Bonds</td>
<td>Performance-based financing for organisations commissioned to provide services to people experiencing homelessness. Not these are not interventions in themselves, but payment mechanisms for service deliverers.</td>
</tr>
<tr>
<td>Direct financial support from public</td>
<td>Direct financial support from public</td>
<td>Money given directly by individuals to those experiencing or at risk of homelessness.</td>
</tr>
</tbody>
</table>
## Appendix 2

### Outcome categories and description

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Outcome sub-category</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capabilities and Wellbeing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social connectedness and social networks (including loneliness)</td>
<td>Community engagement and social connectedness e.g. social networks and loneliness.</td>
<td></td>
</tr>
<tr>
<td>Education, skills and self care</td>
<td>Improved skill and self care including all life skills.</td>
<td></td>
</tr>
<tr>
<td>Overall Wellbeing and Quality of Life</td>
<td>Overall wellbeing or quality of life including happiness.</td>
<td></td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>Cost related outcomes/indicators. This includes cost effectiveness, cost per participant and saving.</td>
<td></td>
</tr>
<tr>
<td>Cost Effectiveness</td>
<td>Cost effectiveness as cost per outcome in absolute or relative terms.</td>
<td></td>
</tr>
<tr>
<td>Cost per Participant</td>
<td>Cost per participant.</td>
<td></td>
</tr>
<tr>
<td>Saving</td>
<td>Cost savings from interventions (e.g. &quot;this policy would reduce the number of ambulance/ police incidents and save the government money&quot;).</td>
<td></td>
</tr>
<tr>
<td><strong>Crime and justice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime and justice outcomes/indicators</td>
<td>Crime and justice outcomes/indicators. This includes arrest and imprisonment, recidivism and victims of crime.</td>
<td></td>
</tr>
<tr>
<td>Offending, arrest and imprisonment</td>
<td>Any measure or record of any recognized crime (violent/non-violent/any other offence), arrest, conviction and imprisonment</td>
<td></td>
</tr>
<tr>
<td>Anti-social behaviour and delinquency</td>
<td>Non-criminal anti-social and disruptive behaviour, such as public drunkenness. Delinquency refers to non-criminal anti-social behaviour by youth.</td>
<td></td>
</tr>
<tr>
<td><strong>Employment and income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to Welfare Benefits</td>
<td>Access to welfare benefits as outcomes/indicators.</td>
<td></td>
</tr>
<tr>
<td>Earned Income</td>
<td>Earned income (e.g. salary or wages)</td>
<td></td>
</tr>
<tr>
<td>Employment Status</td>
<td>Employment status (e.g. employed full time, self-employed, unemployed, etc)</td>
<td></td>
</tr>
<tr>
<td>Forced Labour and Sex Work</td>
<td>Forced labour and sex work (e.g. slavery or prostitution)</td>
<td></td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>Abstinence from substance abuse including both alcohol and tobacco (e.g. 12 months without alcohol or drugs)</td>
<td></td>
</tr>
<tr>
<td>Access to Mainstream Health Care</td>
<td>Access to and utilization of mainstream health care as outcomes/indicators (e.g. registered with a local general practice doctor).</td>
<td></td>
</tr>
<tr>
<td>Mental Health Status</td>
<td>Mental health status (e.g. diagnosed with conditions such as depression, anxiety, psychosis, personality disorder, etc.)</td>
<td></td>
</tr>
<tr>
<td>Outcomes</td>
<td>Outcome sub-category</td>
<td>Definitions</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Physical Health and Nutrition</td>
<td>Health Status</td>
<td>Physical health or nutrition (e.g. life expectancy, dietary intake, anthropometric indicators).</td>
</tr>
<tr>
<td>Nutrition Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risky behaviour</td>
<td>Risky behaviour as outcomes/indicators</td>
<td>(e.g. early onset of sexual activity or unsafe sexual practices, risky driving, antisocial behaviour etc)</td>
</tr>
<tr>
<td>Housing Stability</td>
<td></td>
<td>Housing stability outcomes/indicators. This includes accommodation status and satisfaction with housing.</td>
</tr>
<tr>
<td>Accommodation Status</td>
<td></td>
<td>Accommodation status or quality of housing as outcomes/indicators (e.g. living independently, living in temporary accommodation, sleeping on the streets).</td>
</tr>
<tr>
<td>Satisfaction with Housing</td>
<td></td>
<td>Satisfaction with housing (subjective, objective measures are in accommodation status).</td>
</tr>
<tr>
<td>Public attitudes and engagement</td>
<td></td>
<td>Public attitudes and engagement. This includes fundraising, public understanding, support for intervention, and engagement in homelessness related activities.</td>
</tr>
<tr>
<td>Fundraising and direct giving</td>
<td></td>
<td>Charity fundraising</td>
</tr>
<tr>
<td>Public Understanding</td>
<td></td>
<td>Public understanding as outcomes/indicators (e.g. hostility or empathy towards homeless people).</td>
</tr>
<tr>
<td>Engagement in Homelessness Related Activities</td>
<td></td>
<td>Public engagement in homeless related activities as outcomes/indicators (e.g. number of volunteer applicants).</td>
</tr>
</tbody>
</table>

### Appendix 3

#### Data tables

**Table A.1 Number of studies by study design**

<table>
<thead>
<tr>
<th>Study design</th>
<th>Count: 394</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematic review</td>
<td>45</td>
</tr>
<tr>
<td>RCT</td>
<td>210</td>
</tr>
<tr>
<td>Non-experimental design with comparison group</td>
<td>58</td>
</tr>
<tr>
<td>Before versus after</td>
<td>81</td>
</tr>
</tbody>
</table>

**Table A.2 Geographical distribution of studies**

<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Europe</td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>28</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9</td>
</tr>
<tr>
<td>Spain</td>
<td>2</td>
</tr>
<tr>
<td>France</td>
<td>5</td>
</tr>
<tr>
<td>Denmark</td>
<td>3</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1</td>
</tr>
<tr>
<td>Ireland</td>
<td>2</td>
</tr>
<tr>
<td>Germany</td>
<td>1</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>15</td>
</tr>
<tr>
<td>South Korea</td>
<td>3</td>
</tr>
<tr>
<td>Australia</td>
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<tr>
<td>Japan</td>
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### Table A.3 Interventions

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Number of studies</th>
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<tbody>
<tr>
<td>Housing/homelessness legislation</td>
<td>0</td>
</tr>
<tr>
<td>Health and social care legislation</td>
<td>1</td>
</tr>
<tr>
<td>Welfare benefits</td>
<td>2</td>
</tr>
<tr>
<td>Prevention</td>
<td></td>
</tr>
<tr>
<td>Welfare and Housing support</td>
<td>51</td>
</tr>
<tr>
<td>Family Mediation and conciliation</td>
<td>7</td>
</tr>
<tr>
<td>Discharge interventions</td>
<td>28</td>
</tr>
<tr>
<td>Housing supply</td>
<td>0</td>
</tr>
<tr>
<td>Landlord-tenant mediation</td>
<td>3</td>
</tr>
<tr>
<td>Services and outreach</td>
<td></td>
</tr>
<tr>
<td>Direct feeding e.g. soup runs</td>
<td>1</td>
</tr>
<tr>
<td>In-kind support (exc. Food)</td>
<td>5</td>
</tr>
<tr>
<td>Outreach</td>
<td>64</td>
</tr>
<tr>
<td>Psychologically informed environments</td>
<td>6</td>
</tr>
<tr>
<td>Case management (inc. Critical Time Intervention)</td>
<td>137</td>
</tr>
<tr>
<td>Service coordination, co-location or embedded in mainstream services</td>
<td>6</td>
</tr>
</tbody>
</table>
### Table A.4 Outcomes

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capabilities and Wellbeing</td>
<td>138</td>
</tr>
<tr>
<td>Education, skills and self care</td>
<td>52</td>
</tr>
<tr>
<td>Overall well being and quality of life</td>
<td>79</td>
</tr>
<tr>
<td>Social connectedness and social networks (including loneliness)</td>
<td>35</td>
</tr>
<tr>
<td>Cost</td>
<td>59</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>29</td>
</tr>
<tr>
<td>Cost per participant</td>
<td>33</td>
</tr>
<tr>
<td>Saving</td>
<td>18</td>
</tr>
<tr>
<td>Crime and justice</td>
<td>44</td>
</tr>
<tr>
<td>Offending, arrest and imprisonment</td>
<td>23</td>
</tr>
<tr>
<td>Recidivism</td>
<td>8</td>
</tr>
<tr>
<td>Victims of crime</td>
<td>9</td>
</tr>
<tr>
<td>Antisocial behaviour and delinquency</td>
<td>8</td>
</tr>
<tr>
<td>Employment and income</td>
<td>69</td>
</tr>
<tr>
<td>Access to welfare benefits</td>
<td>3</td>
</tr>
<tr>
<td>Earned income</td>
<td>12</td>
</tr>
<tr>
<td>Forced labour and sex work</td>
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<tr>
<td>Employment status</td>
<td>62</td>
</tr>
<tr>
<td>Housing stability</td>
<td>187</td>
</tr>
<tr>
<td>Accommodation status</td>
<td>181</td>
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</table>
### Category Number of studies

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with housing</td>
<td>17</td>
</tr>
<tr>
<td>Health</td>
<td>296</td>
</tr>
<tr>
<td>Access to mainstream health care</td>
<td>84</td>
</tr>
<tr>
<td>Mental health status</td>
<td>165</td>
</tr>
<tr>
<td>Physical health and nutrition status</td>
<td>95</td>
</tr>
<tr>
<td>Risky behaviour</td>
<td>20</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>157</td>
</tr>
<tr>
<td>Public attitudes and engagement</td>
<td>0</td>
</tr>
<tr>
<td>Engagement in homelessness related activities</td>
<td>0</td>
</tr>
<tr>
<td>Fundraising and direct giving</td>
<td>0</td>
</tr>
<tr>
<td>Public understanding</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Table A.5 Authorship of included studies

(only authors with 4 or more publication are listed here)

<table>
<thead>
<tr>
<th>Author name</th>
<th>Author Country</th>
<th>Number of studies as First Author</th>
<th>Number of studies as Co-author</th>
<th>Total number of unique publications included in the map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vicky Stergiopoulos</td>
<td>Canada</td>
<td>6</td>
<td>10</td>
<td>16</td>
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<tr>
<td>Robert Rosenheck</td>
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<td>3</td>
<td>12</td>
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<tr>
<td>Joseph E Schumacher</td>
<td>United States of America</td>
<td>4</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Julian M Somers</td>
<td>Canada</td>
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<td>14</td>
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</table>

<table>
<thead>
<tr>
<th>Author name</th>
<th>Author Country</th>
<th>Number of studies as First Author</th>
<th>Number of studies as Co-author</th>
<th>Total number of unique publications included in the map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natasha Slesnick</td>
<td>United States of America</td>
<td>7</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Jesse B Milby</td>
<td>United States of America</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Adeline Nyamathi</td>
<td>United States of America</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Stephen W Hwang</td>
<td>Canada</td>
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<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Sam Tsemberis</td>
<td>United States of America</td>
<td>1</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Tim Aubry</td>
<td>Canada</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Robert J Calsyn</td>
<td>United States of America</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Gary A Morse</td>
<td>United States of America</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Dennis Wallace</td>
<td>United States of America</td>
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<td>8</td>
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<tr>
<td>Benissa E Salem</td>
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<td>0</td>
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<td>6</td>
</tr>
<tr>
<td>Carol E Adair</td>
<td>Canada</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>W Dean Klinkenberg</td>
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<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Travis P Baggett</td>
<td>United States of America</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Barbara Leake</td>
<td>United States of America</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Robert E Drake</td>
<td>United States of America</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### Table A.6 Authorship of included studies (only organization with 10 or more publications are listed here list of studies included in the Evidence Gap Map)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Country</th>
<th>Total number of unique publications included in map</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Toronto</td>
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<td>23</td>
</tr>
<tr>
<td>University of California</td>
<td>United States of America</td>
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</tr>
<tr>
<td>The Ohio State University</td>
<td>United States of America</td>
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</tr>
<tr>
<td>Simon Fraser University</td>
<td>Canada</td>
<td>15</td>
</tr>
<tr>
<td>University of Alabama at Birmingham</td>
<td>United States of America</td>
<td>15</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>United States of America</td>
<td>11</td>
</tr>
<tr>
<td>Calgary University</td>
<td>Canada</td>
<td>10</td>
</tr>
<tr>
<td>Columbia University</td>
<td>United States of America</td>
<td>10</td>
</tr>
<tr>
<td>University of South Florida</td>
<td>United States of America</td>
<td>10</td>
</tr>
<tr>
<td>Sue And Bill Gross School of Nursing</td>
<td>United States of America</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author name</th>
<th>Author Country</th>
<th>Number of studies as First Author</th>
<th>Number of studies as Co-author</th>
<th>Total number of unique publications included in the map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judith RLM Wolf</td>
<td>Netherlands</td>
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<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Yuchiao Chang</td>
<td>United States of America</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wesley J Kasprow</td>
<td>United States of America</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Vachan Misir</td>
<td>Canada</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Tejinder P Singh</td>
<td>United States of America</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Susan E Collins</td>
<td>United States of America</td>
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<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sungwoo Lim</td>
<td>United States of America</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Stefan G Kertesz</td>
<td>United States of America</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Seema L Clifasef</td>
<td>United States of America</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Nancy A Rigotti</td>
<td>United States of America</td>
<td>0</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Daniel K Malone</td>
<td>United States of America</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix 4 List of primary studies from UK


Dunn, R.J., 2019. Military veteran transition into employment and civilian engagement: a walking with the wounded evaluation (Doctoral dissertation, King's College London).


Appendix 5 List of included studies


Dunn R J. (2019). Military veteran transition into employment and civilian engagement: a walking with the wounded evaluation. : King's College London, pp.. Available at: https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.797782.


Greiner, D.J., Pattanyak, C.W. and Hennessy, J.P. 2012. How effective are limited legal assistance programs? A randomized experiment in a Massachusetts housing court. A Randomized Experiment in a Massachusetts Housing Court (September 1, 2012).


Poremski D, Rabouin D, and Latimer E. (2017). A randomised controlled trial of evidence based supported employment for people who have recently been homeless and have a mental illness. Administration and Policy in Mental Health and Mental Health Services Research, 44, pp.217-224.


Part 3: Global Evidence and Gap Map of Effectiveness


Transitioning Out of Homelessness: Protocol for a Mixed Methods, Community-Based Pilot Randomized Controlled Trial. JMIR Research Protocols, 8(12), pp.e15557.

Tinland, A., Loubiere, S., Boucekine, M., Boyer, L., Fond, G., Girard, V. and Auquier, P., 2019. Effectiveness of a Housing Support Team Intervention with a Recovery-Oriented Approach on Hospital and Emergency Department Use by Homeless People with Severe Mental Illness: A Randomized Controlled Trial. French Housing First Study, Effectiveness of a Housing Support Team Intervention with a Recovery-Oriented Approach on Hospital and Emergency Department Use by Homeless People with Severe Mental Illness: A Randomized Controlled Trial (July 11, 2019).


Additional reference