what works wellbeing

Systematic review of the evidence on housing interventions for 'housing-vulnerable' adults and its relationship to wellbeing

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Executive summary

Background

Access to safe, good quality affordable housing is essential to wellbeing and housing related factors can have an important influence on neighbourliness and sense of community belonging. A recent scoping review on housing and wellbeing identified a lack of review-level evidence around the impact of housing interventions on wellbeing of people who are vulnerable to discrimination or exclusion in relation to housing (Preston *et al.*, 2016). This systematic review was commissioned to address that gap. We synthesise and consider the quality of evidence on how housing interventions can contribute to improving the lives of adults who are vulnerable in relation to the security of their housing tenure ('housing-vulnerable' adults).

Results

Literature search: 90 publications were included in the review, divided into clusters as follows:

- Housing First (47)
- Other interventions for homeless people with mental health problems (11)
- Recovery housing (10)
- Supported housing (12)
- Housing interventions for ex-prisoners (7)
- Housing intervention for vulnerable young people (3)

Summary of key findings: Housing First provides immediate access to housing without preconditions with support by either mobile teams or on-site services. Housing First has been evaluated in the UK, in a large Canadian randomised trial (AH/CS), in the USA and other settings. Based on our findings, there is strong evidence that Housing First can improve housing stability and measures of physical health in the short term. Evidence was classed as moderate for positive effects on personal wellbeing, mental health and locality-related wellbeing ('where we live') and for absence of effect on personal finance and community wellbeing. Strength of evidence for other outcomes was rated as low or very low. Research identified a range of factors that can affect the effectiveness of Housing First, including fidelity to core components and whether the service is delivered in one place or service users are dispersed in separate apartments.

What we classified as 'other interventions for people with mental/physical health problems' (11 papers) formed a heterogeneous group of complex interventions. A key finding was that these

interventions provide an opportunity for recovery but not everyone benefits. One study suggested that outcomes may be mediated by baseline health status rather than type of intervention. Only one UK study was included in this group.

Ten papers examined recovery housing, which is specifically for alcohol or substance use problems. The review found some randomised trial evidence but this was of limited applicability to UK settings. A key finding was that recovery houses can improve personal wellbeing through promoting abstinence from alcohol or illegal drugs. Supported housing (12 papers) is a related but broader concept, for which we included no evidence from the UK. Despite this we found moderate strength of evidence for a positive effect on housing stability. However, strength of evidence for wellbeing outcomes was low or very low.

Finally, we examined interventions for other specific groups of housing-vulnerable people. Of seven studies on ex-prisoners, five were from the UK (England), suggesting relatively high transferability/applicability to similar settings. The main outcome examined in the studies was reduction in offending, which could be linked to both community and individual wellbeing. Three UK studies of housing interventions for vulnerable young people showed generally positive outcomes for wellbeing but the studies were small, short-term and generally uncontrolled.

There was a general lack of evidence around measures related to community wellbeing and around cost-effectiveness of the interventions investigated. Only a small number of economic evaluations were included and their relevance to the UK varied (economic studies are sensitive to local context and the results are unlikely to be generalisable between different settings).

Conceptual pathway: We used the synthesised evidence to develop a conceptual pathway to illustrate the links between housing and wellbeing for housing-vulnerable people. The pathway proceeds from the initial offer of housing through to longer-term outcomes associated with different types of intervention (defined as 2 years or more). The pathway is structured as a 'logic model', highlighting key intermediate outcomes (central elements that may explain changes) and moderators (barriers and facilitators that may influence outcomes).

Conclusions

Implications for policy and practice: The findings of this systematic review highlight the complexity of the relationship between housing and wellbeing. Overall, we did not find sufficient evidence to demonstrate a linear relationship between housing interventions for vulnerable people, improved housing and improved wellbeing for the individual or community. This may reflect both limitations of the evidence base (relatively few high-quality studies reporting on core wellbeing outcomes) and the complexity of the relationship between housing and wellbeing for vulnerable people with complex needs. It follows that the findings may be difficult to translate into 'actionable messages' for policy and practice. Providing housing support for vulnerable people is clearly necessary but may not always be sufficient to improve their wellbeing and that of the community as a whole. The conceptual pathway presented in section 11.3 highlights some of the plausible mechanisms leading to improvements and the associated key moderating factors. In considering how to apply the evidence, decision-makers also need to take into account the wider context, including pressure on local authority budgets and changes in the political environment.

Evidence gaps and implications for research: This review has identified substantial evidence gaps. There is a need for further high quality evaluations of interventions that have been or may be implemented in the UK, particularly outside England. There is a particular requirement for well-designed economic evaluations and studies focusing on the wellbeing dimensions that have been relatively under-researched to date, for example links between vulnerable-housing interventions and education and skills and community wellbeing outcomes.

Accompanying cost-effectiveness model: Alongside the systematic review the research team also conducted a cost-effectiveness model of Housing First (Wright *et al*., 2018). This assessed the costs and benefits of Housing First versus a Staircase model over a two-year period and considered the uncertainty around costs and benefits for both approaches.

Methods

We searched six bibliographic databases, performed reference and citation checking and searched the websites of university departments and charities with expertise in housing. We also issued a call for evidence through the What Works Centre for Wellbeing (WWCW).

Inclusion criteria: Studies of housing-vulnerable adults, their families or carers and providers of housing services were included. Studies had to include an intervention designed to avoid homelessness or unstable housing and report outcomes related to wellbeing and/or housing stability. Our conceptualisation of wellbeing was based on 8 (of 10) dimensions of the Office for National Statistics (2015) definition of wellbeing (personal wellbeing, our relationships, health, what we do, where we live, personal finance, education and skills, governance). Housing-vulnerable people included (but were not limited to) those who were homeless or had a history of homelessness, people with a history of mental illness, people with a learning disability, refugees and recent immigrants, young people leaving care and ex-prisoners. We included quantitative (experimental and observational) and qualitative research from the UK and other OECD countries published between 2005 and 2016.

Study selection and data extraction: All titles and abstracts were screened by one reviewer with a subset (of 10%) of the titles and abstracts being screened by a second reviewer. A similar process was followed for final decisions on inclusion/exclusion based on full-text documents. Queries were resolved by discussion among the review team. Included studies were imported into specialist systematic review software (EPPI-Reviewer 4) for data extraction using a pre-designed template. Data were extracted by one reviewer with a 10% sample being checked by a second reviewer.

Study quality assessment: Quality of included studies was assessed using checklists for quantitative and qualitative studies recommended by the WWCW review methods group. Quality was assessed by one reviewer with a 10% sample being checked by a second reviewer.

Data synthesis: The database and grey literature searches identified 7907 and 45 records, respectively. After duplicates were removed, 4540 items were screened against the inclusion criteria. One additional report was identified from responses to the WWCW call for evidence. This resulted in 90 included studies. These were grouped into clusters based on the type of intervention they were addressing and/or the vulnerable group being served. A narrative synthesis of the findings was produced for each cluster, including summary tables and an assessment of the transferability/applicability of non-UK evidence to UK settings. The GRADE (Grading of Recommendations, Assessment, Development and Evaluation) approach was used to rate the overall strength of evidence for wellbeing outcomes in each cluster of studies.

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1. Introduction/background

As part of the What Works for Wellbeing Community Evidence Programme a scoping review of reviews on housing and wellbeing was conducted during 2016 {Preston, 2017 #16267}. This was in response to a stakeholder engagement exercise undertaken by the wider What Works: Wellbeing strand of work that identified priority topics to guide the evidence reviews to be undertaken. Universal access to safe, high quality affordable housing was frequently noted as essential to wellbeing and housing related factors were seen as a determinant of neighbourliness and sense of community belonging.

The scoping review of reviews identified existing reviews in the topic and the evidence gaps at review level {Preston, 2017 #16267}. Evidence gaps identified included:

- the impact of rough sleeping on health and wellbeing (including mental health, substance abuse);
- housing access and discrimination (e.g. in relation to young people, minority ethnic households, Gypsy and Travellers);
- and the housing situations and experiences of minority ethnic households, and recent immigrant households.

The review level evidence base suggested that housing is particularly important for vulnerable groups, and the scoping review found evidence of positive outcomes from 'Housing First' type approaches (rapid access to housing and support not subject to treatment adherence or being deemed ready to live independently; see section 5 below). Based on these findings and consultation with stakeholders, the authors recommended a future systematic review covering 'Housing First' type models, applicable to the UK, covering vulnerable groups {Preston, 2017 #16267}.

2. Questions, definitions and scope of the review

The aim of this systematic review is to synthesise the published evidence, and describe the quality of that evidence, in relation to how housing interventions can contribute to improving the lives of adults who are vulnerable in relation to the security of their housing tenure ('housing-vulnerable' adults).

2.1 Review question

The overall aim of this systematic review as outlined above was expressed as the following review question:
What evidence is there for housing interventions being effective at improving the wellbeing (both current and future, and community wellbeing) of housing- vulnerable adults? Where there is evidence of interventions' effectiveness, what evidence is there of their cost effectiveness?

We aim to find evidence on 'how' interventions operate and the conditions required for a particular intervention or mechanism to work effectively in the UK. To this end the review has sub-questions which relate to the impact on different sub-populations, and the nature and impact of outcomes. The sub-questions are:

- Which housing security and wellbeing outcomes are experienced by which groups of people including people from different socio-economic backgrounds, different demographics (such as ethnicity, age or gender) or with different circumstances (drawing upon UK anti-discrimination law categories where relevant to the studies identified e.g. disability, sexual orientation, religion etc.)?

- How do housing security and wellbeing outcomes achieved relate to particular circumstances, context and time periods of the delivery of the interventions?

The review also focuses on identifying evidence describing potential direct and indirect costs and savings (i.e. costs and cost-effectiveness) of housing interventions. It aims to include an examination of immediate and future resource implications, costs and savings both for the individuals/households and for public expenditure (particularly NHS and social care).

2.2 Wellbeing and wellbeing outcomes

At the outset of the review, we adopted the Office for National Statistics (2015) definition of wellbeing, as agreed by the What Works Centre for Wellbeing (https://www.whatworkswellbeing.org/about/what-is-wellbeing/ (accessed 9 November 2017):

‘Wellbeing, put simply, is about ‘how we are doing’ as individuals, communities and as a nation and how sustainable this is for the future. We define wellbeing as having 10 broad dimensions which have been shown to matter most to people in the UK as identified through a national debate. The dimensions are:

Dimensions	Explanation of the dimensions
1. Personal (subjective) wellbeing	A subjective assessment of how people feel about their own lives. How satisfied people are with their lives, their levels of happiness and anxiety, and whether or not they think the things they do are worthwhile.
2. Our relationships	Good social relationships and connections with people around us e.g. trust in others, satisfaction with our family life
3. Health	Life expectancy and good physical and mental health.
4. What we do	How people spend their time (e.g. employment, volunteering, arts, culture and exercise) and how satisfied they are with its use (e.g. job satisfaction, satisfaction with amount of leisure time)
5. Where we live	How people feel about where they live, including: crime, fear of crime, access to the natural environment, sense of belonging to the neighbourhood, access to transport, satisfaction with accommodation.
6. Personal finance	Whether people are coping financially, including: median income and wealth, feelings of satisfaction with income and whether getting by financially.
7. Education and skills	The level of skills: qualifications, human capital

8.	Governance	The level of political engagement: involvement in the democratic process (e.g. voting), trust in the government
9.	The economy	Strength of the economy: GDP/capita, inflation, government debt
10.	The natural environment	Environmental sustainability (protecting natural resources from depletion): greenhouse gas emissions, energy from renewables, domestic recycling, and protected areas.

The dimensions 1 to 8 were included within this review. Further details may be found online at https://www.whatworkswellbeing.org/about/what-is-wellbeing/

The dimension about 'the natural environment', whilst clearly important in terms of the long-term sustainability of a nation's wellbeing, is not directly relevant to the housing-related wellbeing of individual vulnerable people or communities; as such it was not taken forward in this review. Similarly, the dimension about 'the economy' was considered to be less relevant to our review as this relates to broader national and area economic performance, whereas individual level employment and income is covered within the personal finance domain.

The ONS definition was used as a framework for the extraction and synthesis of wellbeing data from the included studies. Outcomes that were related to aspects of any of the wellbeing dimensions listed above were classified as wellbeing outcomes for the purposes of the review. This means that we interpreted outcomes as being related to wellbeing regardless of whether they were reported as such in the included studies.

We also considered community wellbeing in terms of how improvements in individual wellbeing may contribute to the wellbeing of the broader community, for example by improving peoples' relationships with their neighbours and aspects of social capital. We adopt the definition of community wellbeing from Wiseman and Brasher (2008) in line with the What Works Wellbeing Community Evidence Programme:

> '*Community wellbeing is the combination of social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfil their potential.*' [Wiseman and Brasher, 2008: 358]

We seek to draw out aspects of the research that are relevant to community wellbeing, whilst acknowledging that most of current research in the area focuses on individual level outcomes.

2.3 Housing and housing outcomes

In this review, housing was defined as – "the usual residential home of an individual or family" (Taske et al, 2005, p.3). We include within this temporary accommodation, a traveller caravan or sheltered housing/warden assisted housing. Other types of accommodation, for example prisons, residential, nursing or care homes for the elderly, schools and universities were excluded.

Housing interventions are those which have a direct aim of supporting the housing related outcomes of the individual/family. For the purposes of this review, we defined housing-related outcomes to include any measure of housing stability (for example, percentage of time spent in different types of housing), housing quality or security of tenure, including affordability. Our definition of housing interventions did not include improvements to the physical state/safety of the housing or interventions, such as assistive technology or health care, which are delivered in the home unless housing related outcomes are a key objective for the intervention.

2.4 Vulnerable groups

In this review we define housing-vulnerable as adults who are at risk of homelessness, unstable housing or loss of their home. Specific vulnerable groups are listed below.

We are particularly interested in this review in adults who are housing-vulnerable where an existing vulnerability risks worsening their housing outcomes. This includes the groups listed below.

- Homeless people, rough sleepers, roofless people, living in temporary accommodation, past experience of homelessness/rough sleeping. Including homeless people in rural areas.
- People with experience of poor mental health
- People with a learning disability

- Domestic violence victims
- Asylum seekers, refugees
- Recent immigrants
- Substance users
- Travellers, Gypsies
- Troubled families
- Ex-offenders
- Veterans
- Teenage parents
- Care leavers
- Those with a long term illness or disability, including sensory impairments
- Those with complex needs and multiple disadvantage
- People living in severe overcrowding or with short term tenancies

3. Review methods

The review team attempted to search for all relevant information whilst also ensuring the timescale for the completed review was met; any conflicts in these objectives were resolved in a pragmatic manner such that the overall purpose and usefulness of the review was prioritised and any key decisions were agreed across the review team and advisory group (see section 3.7). The review team were guided by the recommendations of the What Works Wellbeing guide to evidence review methods {Snape, 2017 #16268}.

The data extraction focused on the most critical information for evidence synthesis. The quality assessment process used the quality assessment from the What Works Wellbeing guide to evidence review methods.

3.1 Identification of evidence

Searches were developed and run by highly experienced information specialists. The aim of the searches was to identify all evidence on housing interventions for housing-vulnerable people that relate to the eight dimensions of wellbeing under consideration. Concepts underpinning these

dimensions are not always clear and there is overlap between terminologies. An initial scoping search focusing on terms relating to the wellbeing dimensions found very few relevant records, suggesting that key evidence which did not use these terms explicitly might be missed. A broader search followed, this time combining housing and interventions with vulnerable populations with the intention of identifying at the sifting stage those papers with relevance to the dimensions of wellbeing.

The full search had a number of stages:

1. Targeted searches of databases. Databases searched were Medline, EMBASE, EconLit and PsycINFO via OVID, ASSIA via ProQuest and Social Sciences Citation Index via Web of Science. The search strategy for Medline is provided in Appendix 1

2. Scrutiny of the introduction/background/reference list of papers retrieved to identify additional papers.

3. Citation searching of particularly relevant papers retrieved though Stages 1-2

4. Identification of grey literature, likely to be mostly through topic experts, the Review Advisors and contacts through the What Works Centre for Wellbeing

5. Search of selected topic relevant UK websites based on known research activity and recommendations from review advisory board members (charities, think tanks and other organisations with an interest in housing for vulnerable people)

    - Housing Associations' Charitable Trust (HACT)
    - Joseph Rowntree Foundation
    - Sitra
    - Housing LIN
    - King's Fund
    - NHS Alliance 'Housing for Health'
    - National Housing Federation
    - Homeless link
    - Mencap
    - Rethink Mental Illness
    - Local Government Association (including Homes and Communities Agency)
    - Development for Communities and Local Government
    - Shelter

- National Development Team for Inclusion (NDTi)
- Chartered Institute of Housing (CIH)
- Mayday Trust
- Family Mosaic
- Young Foundation
- Crisis
- The Bromford Deal
- Lankelly Chase
- Housing Diversity Network
- Friends, Families and Travellers
- The Foyer Federation
- The Housing Plus Academy

6. Search discussion papers, publications and activities of UK university research centres and groups focused on housing research –

    - Centre for Housing Policy (York)
    - Cambridge Centre for Housing and Planning Research
    - Centre for Housing Research (St Andrews)
    - Housing and Communities Research Group (Birmingham)
    - Institute for Social Policy, Housing, Equalities Research (I-SHERE), Heriot Watt, Edinburgh
    - Urban Studies, Glasgow
    - Centre for Regional Economic and Social Research (CRESR), Sheffield Hallam

Details of search 5 and 6 are provided in Appendix 2.

7. Targeted call for evidence through the What Works Centre for Wellbeing to identify missing evidence, further details provided in Appendix 3.

Management of search results

An audit table of the search processes was kept, with date of searches, search terms/strategy, database searched, number of hits, keywords and other comments included, in order that searches are transparent, systematic and replicable as per PRISMA guidelines. The results of the search were downloaded into Endnote X7.

3.2 Study selection

The inclusion of studies in this review was according to Table 1. Evidence from before 2005 was excluded for practical reasons and because of its perceived lesser relevance to current policy. In particular, policies adopted in many countries since the financial crisis of 2008 have significantly affected services for housing-vulnerable people and the wider climate of housing policy. As specified in the protocol, we were prepared to consider key publications from before this date (for example, papers extensively cited by included studies) but none were identified. Evidence in languages other than English was excluded for similar reasons.

All titles and abstracts were screened by one reviewer with a subset (about 10%) of the titles and abstracts being screened by a second reviewer. A calculation of inter-rater agreement was made. A Kappa coefficient was calculated demonstrating good agreement between reviewers: – K = 0.707, 95% CI, 0.607-0.808. Any queries were resolved by discussion. A similar process was followed for final decisions on inclusion/exclusion based on full-text documents.

Table 1: Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Population	Housing vulnerable adults Studies that collect data from users of housing support services, their family or carers, or staff who provide services	Adults that are not housing vulnerable
Intervention	Housing interventions designed to avoid homelessness or unstable housing This includes: • supported housing / accommodation / living • independent living • specialist housing • service-enriched housing • sheltered accommodation • community supportive/ supported housing / accommodation • extra care • housing-led and housing first	Improvements to physical state of housing; health care or assistive technology delivered in the home

	models • re-housing • transitional living program • recovery housing/re-housing • managed alcohol program and housing/re-housing • homeless and housing/re-housing • shelter • temporary housing support • floating support • foyers • housing-plus • community investment (from a housing provider)	
Comparator	Quantitative studies that compare different interventions including those using a before and after design and comparing new versus current practice. For interventions implemented in UK settings, studies which draw comparisons to UK population norms are also eligible. Qualitative studies without a comparator will be included where they are linked to a particular housing intervention.	Quantitative studies which do not have any comparator will not be included.
Outcome	Outcomes relating to any of the eight wellbeing domains (personal wellbeing; relationships; health; what we do; where we live; personal finance; education and skills; and governance). This encompasses outcomes relating to people using housing interventions and/or their family and carers. It includes quantitative (measured) outcomes, and qualitative (views and perceptions) outcomes, together with direct and indirect cost effectiveness outcomes (including housing, health and social care resource use).	Studies that do not report any outcomes relating to any of the eight wellbeing domains

	Studies that report only intermediate housing outcomes which may indirectly be linked to wellbeing outcomes through separate modelling work. Studies that report outcomes that can be linked to community wellbeing.	
Study Type	Quantitative studies – Experimental and Observational design Qualitative research studies and surveys UK Grey literature Systematic reviews Papers published in English language Publication Date 2005-2016. Interventions researched in OECD countries	Qualitative and quantitative studies that do not provide data relating to one or more identifiable interventions. Non-English-language papers. Evidence published prior to 2005. Interventions researched in Non-OECD countries. Conference Abstracts Dissertations Studies that provide only descriptive information or opinions, rather than quantitative or qualitative data

Content exclusion

- prisons, residential, nursing or care homes for the elderly, schools, universities
- housing interventions for the elderly unless they relate to security of housing status
- housing interventions for the elderly related to physical adaptations to the home
- housing interventions for those with a disability related to physical adaptations to the home

3.3 Data extraction

Following the selection of papers for inclusion, data extraction of each full paper into a pre-agreed evidence table on EPPI Reviewer 4 (see Appendix 4) was undertaken by one reviewer. Individual reviewers led on data extraction for particular clusters of papers and subsequently drafted the relevant section(s) of the report. Periodically, throughout the process of data extraction, a random selection will be considered independently by two people (that is, double assessed). At least 10% of the studies were double-assessed with any differences resolved by discussion or recourse to a third reviewer. A sample data extraction form is presented in Appendix 4.

3.4 Quality assessment

Quality assessment was conducted of all studies (or individual aspects of studies) using the appropriate checklist following the methodology recommended by the What Works: Wellbeing Methods Guide {Snape, 2017 #16268}. Systematic reviews were included in the synthesis without quality assessment or data extraction of their individual included studies.

Each full paper was assessed by one reviewer. Periodically a random selection was considered independently by 2 people with at least 10% of the studies being double-assessed. Any differences in quality grading were resolved by discussion or recourse to a third reviewer. Quality assessment data was extracted and recorded and are available from the authors on request.

Specific features of the body of evidence, namely type of evidence, quality of the evidence, consistency of the findings, and consistency between unanswered research questions were examined.

3.5 Transferability/Applicability Assessment

Through examination of each study we assessed how transferable the findings are to current policy and in to the UK context. This includes an assessment of relevant international evidence.

3.6 Data synthesis

The included studies were scrutinised at title and abstract level and were then organised into clusters based on the topic and research questions that they were addressing. Narrative syntheses of examining the studies and their findings were undertaken organised by the different clusters.

Results for each cluster of studies are reported in a separate chapter. We have adopted a similar structure for each chapter for ease of reading and comparison. We first describe the characteristics of the included studies and then summarise the results of the quality assessment. We summarize the findings of the studies, treating UK and international evidence separately. Finally, we assess the applicability of the evidence as a whole to the UK setting and the strength of the overall evidence base (see below), focusing primarily on the evidence linking housing interventions and wellbeing outcomes (broadly defined as explained in section 2.2). Qualitative studies are treated separately from quantitative studies because of differences in their research questions, data collection methods and analytical approach.

The principles of GRADE (Grading of Recommendations, Assessment, Development and Evaluation) were used for the assessment of the overall strength of quantitative evidence provided by each cluster of studies. We followed the process for rating certainty of evidence in the absence of a single estimate of effect as described by Murad et al.(Murad et al., 2017). The ratings reflect our degree of confidence that the effect observed in the included studies reflects a true effect of the intervention. A brief description of the GRADE process is provided in Figure 1 and more details are available in the cited paper (Murad et al., 2017).

Figure 1: Brief outline of GRADE process

GRADE has four levels of certainty: high. moderate, low and very low

Initial level based on study design: high for randomised evidence, low for observational

↓

Initial level decreased by one if any of the following are considered serious:

↓

- *Risk of bias:* methodological limitations of the included studies
- *Indirectness*: how dissimilar is the evidence to the question at hand in terms of population, interventions and outcomes across studies
- *Imprecision*: Are there sufficient studies/participants to provide reliable estimates of effect
- *Inconsistency*: Are there differences in the direction and magnitude of effect across studies
- *Likelihood of publication bias*

↓

Initial level for observational evidence can be increased if certain conditions are met

- *Large magnitude of effect*
- *Dose-response gradient:* positive outcomes associated both with presence and intensity of an intervention
- *Effect of plausible confounding in observational studies:* Potentially unobserved confounders may suggest an underestimate of the observed effect

↓

Final level of certainty

Figure 2: Outcomes from the GRADE process

HIGH QUALITY: Further research is very unlikely to change our confidence in the estimate of effect. **We have strong evidence** and we can be confident that the evidence can be used to inform decisions.

MODERATE QUALITY: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. **We have moderate**

confidence and decision makers may wish to incorporate further information to inform decisions.

LOW QUALITY: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. **We have initial evidence** low confidence such that decision makers may wish to incorporate further information to inform decisions.

VERY LOW QUALITY: Any estimate of effect is very uncertain. **We have poor quality evidence** and low or no confidence in this evidence. It may be low quality or not relevant to the UK.

We have provided a narrative summary of the main findings of the review as a whole, its strengths and limitations and implications for practice and further research in section 11 of this report.

Key outputs of the synthesis were:

- a conceptual pathway of how wellbeing is related to housing for vulnerable people, based on the evidence retrieved (section 11.3);
- an evidence map, which tabulates the identified evidence in terms of which dimensions of wellbeing for vulnerable people they address (section 11.4).

Meta-analysis was not performed because of heterogeneity of populations, interventions and outcomes within each group of included studies.

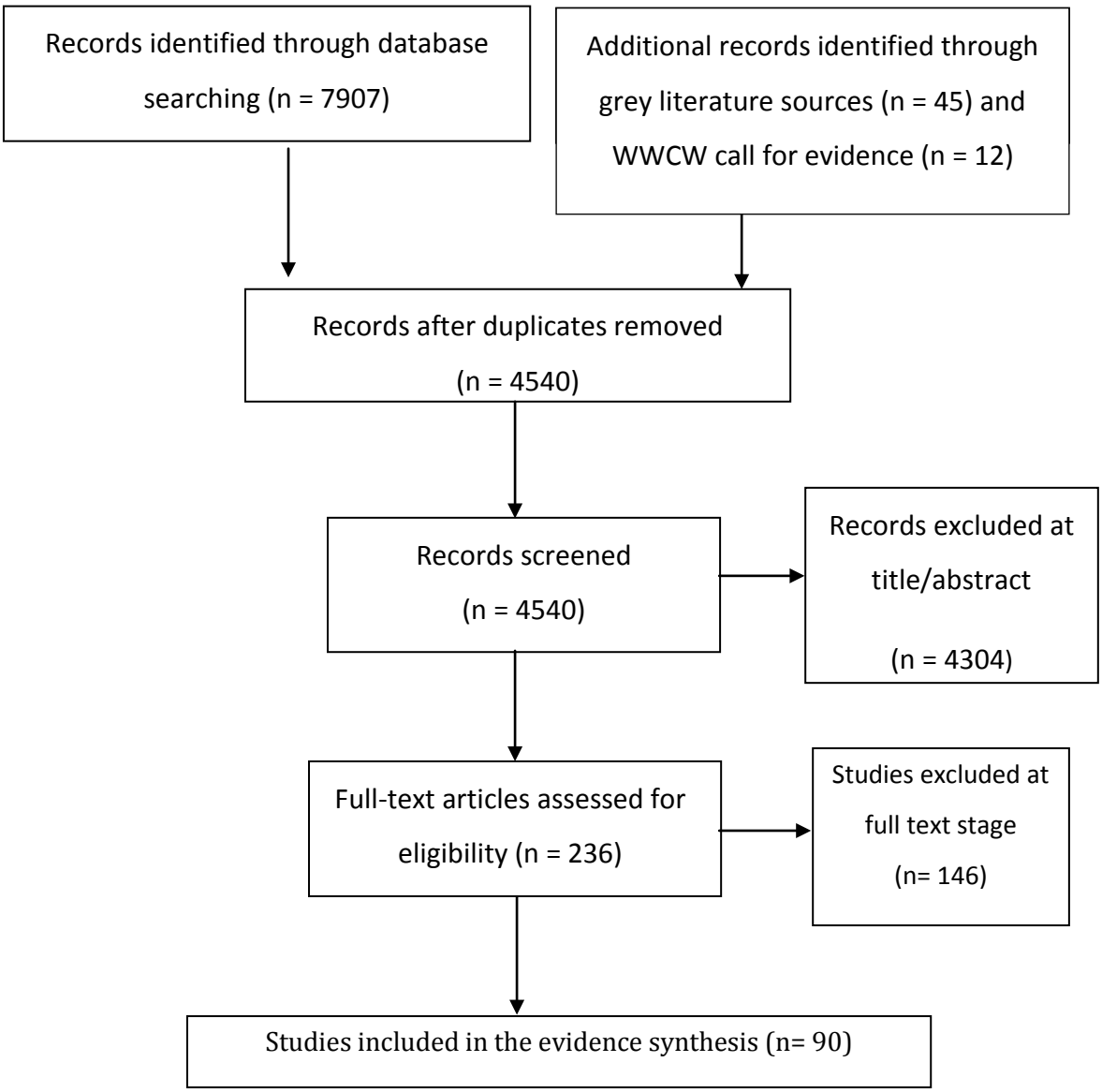
3.7 Review advisory group

An advisory group of independent experts was formed to support the review process. The main roles of the advisory group members were to comment on the protocol, to be a potential source of evidence for inclusion (particularly from the grey literature) and to peer review the draft final report.

4. Results of the literature search

The results of the literature search presents the studies identified in the searches, the screening process and the final list of included studies, with a clear description of the decisions made about the evidence to include and exclude from the review. The process can be summarized in the below modified PRISMA diagram (Figure 3).

Figure 3: PRISMA flow diagram



4.1 Screening of the database

The database and grey literature searches identified a total of 4540 unique records which were sifted for inclusion in the review according to the predefined inclusion and exclusion criteria at title and abstract level. The WWCW call for evidence produced 12 items (Appendix 3), of which one was included in the review {Bowpitt, 2014 #16262}. All titles and abstracts were screened by one reviewer with a subset (about 10%) of the titles and abstracts being screened by a second reviewer. This resulted in 236 papers which met our inclusion criteria and the full-text of these papers were screened. Any queries were resolved by discussion. A similar process was followed for final decisions on inclusion/exclusion based on full-text documents, resulting in the inclusion of 90 papers.

4.2 Full paper exclusions

This section outlines specific evidence areas in which full papers were excluded in the review, to give some context and scope to the evidence that was included. Common reasons for exclusion were that the study did not focus on a housing intervention (e.g. main focus was on support or clinical aspects); absence of a control group or comparison data (e.g. cross-sectional studies or surveys); and absence of data on wellbeing outcomes. Details of full-text exclusions are provided in Appendix 5.

4.3 Development of evidence review clusters

Of the 90 papers that met our initial inclusion criteria, evidence clusters were developed into which the papers were arranged using information from the title and abstract. The evidence clusters are as follows (Table 2):

Table 2: Evidence clusters

Evidence Cluster	Number of papers
Housing First (rapid unconditional access to housing)	47
Other interventions for homeless people with mental health problems	11
Recovery housing (specifically for people with alcohol or illicit drug abuse problems)	10
Supported housing (other than studies based explicitly on the Housing first model)	12
Housing interventions for ex-prisoners	7
Housing intervention for vulnerable young people	3

5. Housing First

5.1 Definition of Housing First

Housing First is an intervention that was originally developed by the Pathways to Housing programme in New York in the early 1990s. The intervention aimed to help people with a history of homelessness combined with severe mental illness. The key features of Housing First are immediate access to housing without preconditions and provision of support in the form of mobile teams providing assertive community treatment or intensive case management. The absence of preconditions differentiates Housing First from treatment first or 'staircase' programmes (also referred to as a 'Continuum of Care' approach) which require people with mental health or substance abuse problems to undergo treatment and demonstrate the capacity to live independently before being offered access to permanent housing.

Since its origin in the USA, Housing First has been adopted in many other countries and the intervention has been adapted in line with national and local policies and to meet the needs of a broader range of homeless people(Bretherton and Pleace, 2015). Bretherton and Pleace have defined the core principles of Housing First as follows (Bretherton and Pleace, 2015):

- Programmes offer permanent housing with security of tenure
- Support for service users to exercise real choice over all aspects of their lives
- Focus on long-term and chronically homeless people with high support needs
- Use of a harm reduction framework
- Provision of open-ended access to intensive support
- Separation of housing and care (access to and retention of housing does not require undergoing treatment or abstention from substance use.

We made a pragmatic decision to include studies that described the intervention as Housing First in the Housing First group of studies. Studies of interventions based on Housing First principles were allocated to the group that seemed most appropriate based on the emphasis of the paper.

We included one systematic review (section 5.2) and 47 primary study publications (sections 5.3 to 5.7) in the Housing First group. Of the primary publications, 18 were outputs from one large randomised trial in Canada and 16 were classified as qualitative.

5.2 Summary of systematic review of outcomes associated with Housing First

We used the systematic review by Woodhall-Melnik and Dunn (WM&D)(Woodhall-Melnik and Dunn, 2016) to summarise the earlier research on Housing First (HF). As specified in the inclusion criteria (see Table 1), we did not assess quality or extract data from the individual studies included in this review. The review was published in 2016 and the searches covered the period from January 2000 to January 2013. Studies included in the WM&D review have not been included in our review; instead we have summarised the main findings of the review here and concentrated our review on the more recent literature, particularly studies aiming to fill gaps identified by WM&D.

Objectives and methods

WM&D stated that the objective of their review was to 'synthesise and describe the evidence that assesses impacts of HF on outcomes for persons who are or were recently homeless' (p290). They searched the databases Web of Science, PubMed and Scholars' Portal using a basic search strategy. Peer reviewed articles that quantitatively measured client outcomes associated with HF were included, which meant that all qualitative research was excluded. Articles describing study methodology and those that addressed programme fidelity to HF concepts were also excluded. Study quality was assessed using a scale developed by Kyle and Dunn (2003) which placed papers in five categories ranging from very weak (e.g. cross-sectional studies with no adjustment for confounding) to strong (prospective studies with a control group and >80% follow-up for at least 6 months).

The review included 31 studies, all of which appear to have been conducted in the USA or Canada. The total number of participants and details of study designs were not reported. A narrative synthesis of the evidence was provided. Wellbeing outcomes (For our definition of wellbeing outcomes, see section 2.2) reported in the review were substance use and psychiatric symptoms and quality of life. Effects of HF on housing outcomes and service use and costs were also reported.

Wellbeing outcomes

WM&D reported mixed results (some beneficial, some adverse and some showing no difference) for substance use and psychiatric symptoms from a range of observational studies and randomised trials, most comparing HF with treatment first (TF) approaches.

Two studies included in the review reported an association between HF and improvements in perceived quality of life. Findings for social integration and community adjustment were described as inconclusive, with one study reporting an increase in perceived choice associated with HF which was subsequently found to be a predictor of increased psychosocial integration. However, another study found no difference in community adjustment between HF and TF participants.

Housing outcomes

WM&D reported that all included studies that measured housing outcomes found that HF was associated with increased housing stability or retention in housing (seven studies). HF was also associated with reductions in homelessness and obtaining housing more rapidly than a TF group. HF was associated with increased retention in housing programmes, although one study suggested that this effect varied between subgroups.

Service use and costs

There was consistent evidence from six studies that HF was associated with reductions in contact with the criminal justice system (measured by several different methods). Shelter use was also reduced in one study, although this was an expected finding.

Compared with TF participants, HF participants were found to make less use of emergency and criminal justice services; substance use treatment services; and detox or sobering centres. One study found higher rates of retention in a methadone treatment programme for HF participants compared with a control group.

Finally, WM&D reported that HF participants' reduced use of emergency departments, in-patient hospitalisation and criminal justice contact was associated with reduced costs, although only one study was cited in support of this. Another study found that higher case management costs for HF participants offset other cost reductions, resulting in no overall cost difference at two years between HF and abstinence-based housing.

Assessment of the evidence

This systematic review had some methodological limitations but it provides a useful overview of the early research on HF. The main conclusion was that there was already strong and consistent evidence that HF improves housing stability for people with histories of chronic homelessness and associated problems such as mental illness and/or substance use problems. However, the evidence was considered insufficient to argue for the widespread implementation of HF because of uncertainty about long-term outcomes (the longest period of time for data reporting across the studies was 2 years), outcomes other than housing stability, effects on different population subgroups and generalisability of the findings outside North America. There was thus a substantial need for further research on the effectiveness of HF programmes. WM&D also noted a need for policy-makers to ensure that programmes meet the needs of local populations and fit well with broader policies and welfare systems.

5.3 Description of included primary studies

We included 47 publications in the Housing First group of studies. Of these, 18 were publications from the Canadian At Home/Chez Soi (AH/CS) trial. This randomised controlled trial (RCT) of Housing First compared with treatment as usual for homeless or precariously housed adults took place in five Canadian cities between 2009 and 2013. A total of 2255 participants were randomised to the two groups (Poremski et al., 2016). Participants randomised to Housing First received housing plus support according to their level of need: assertive community treatment for those with high needs and intensive case management for those with moderate needs. Some participants were housed in single-site settings (also known as congregate-site), while others were placed in independent (scattered-site) apartments. In addition to publications reporting the overall results of the trial, the researchers reported various subgroup and secondary analyses as well as qualitative studies. Publications from the AH/CS trial are briefly summarised in Table 3.

Table 3: Summary of publications from the Canadian AH/CS trial

Publication reference	Subgroup	Setting	Main outcome(s)
Adair(Adair et al., 2016)			Housing quality
Alaazi(Alaazi et al., 2015)	Indigenous people		Qualitative outcomes
Aquin(Aquin et al., 2017)			Suicidal thoughts and intentions
Aubry(Aubry et al., 2016)	High needs group		2-year housing stability and quality of life outcomes
Kirst(Kirst et al., 2014)		Toronto	Qualitative outcomes
Kozloff(Kozloff et al., 2016)	Young people		Housing stability

Macnaughton(Macnaughton et al., 2016)			Qualitative outcomes
O'Campo(O'Campo et al., 2016)		Toronto	2-year health and social outcomes
Patterson(Patterson et al., 2013b)			Qualitative: trajectories of recovery
Patterson(Patterson et al., 2013a)		Vancouver	Quality of life
Polvere(Polvere et al., 2013)			Qualitative early findings
Poremski(Poremski et al., 2016)			Employment and income
Rezansoff(Rezansoff et al., 2016)	People with schizophrenia		Medication adherence
Russolillo(Russolillo et al., 2014)		Vancouver	Emergency service use
Stergiopoulos(Stergiopoulos et al., 2016)	Ethnic minorities		Housing, community integration
Stergiopoulos(Stergiopoulos et al., 2014)	Early participants		Quality of life and qualitative outcomes
Stergiopoulos(Stergiopoulos et al., 2015)	Moderate needs group		2-year housing and quality of life outcomes
Zerger(Zerger et al., 2014)	People needing interim housing prior to starting HF		Qualitative outcomes

HF, Housing First

Sixteen studies used a wholly or predominantly qualitative methodology and are discussed separately (see section 5.7). Twenty-one studies were conducted in the USA. Many of these studies were evaluations of the outcomes of particular HF programmes. Both single site and scattered site versions of HF were evaluated. In single-site HF, service users are accommodated in one place, generally with access to on-site support services. In scattered site HF, the original model of the intervention, service users are distributed throughout the community and receive support in the community from mobile teams. Outside North America, studies were conducted in Germany (one study), Australia (two studies) and the UK (three studies). The three UK evaluations (Bretherton and Pleace, 2015, Pleace and Bretherton, 2013, Boyle et al., 2016) were published as reports rather than peer reviewed journal articles.

5.4 Quality of included studies

UK evidence: The three UK evaluations (Bretherton and Pleace, 2015, Pleace and Bretherton, 2013, Boyle et al., 2016) were service evaluations using a mixture of quantitative and qualitative data. This made them difficult to evaluate using the WWCW checklist, as many of the questions were not applicable. Unlike formally published research articles, these reports are unlikely to have undergone

independent peer review. The evaluation of nine Housing First services by Bretherton and Pleace (Bretherton and Pleace, 2015) appears to be a well-designed evaluation given that the available time and resources for the evaluation were clearly limited. The authors had extensive experience of conducting similar evaluations and they provided a thorough background to the topic and an explanation of Housing First. They also related their findings to the international evidence. The limitations of the evaluation, particularly lack of controlled evidence and limited data to inform cost-effectiveness, were acknowledged. Similar comments apply to the evaluation of Camden Housing First by the same team from the University of York. (Pleace and Bretherton, 2013) The source of funding for these two reports was not explicitly stated. The evaluation of Housing First in Belfast(Boyle et al., 2016) was produced by an independent consultancy rather than an academic team but used many of the same methods and can also be considered as a balanced assessment of limited evidence. It should be borne in mind that the report was commissioned by the Northern Ireland Housing Executive, which funded the DePaul charity to provide the Housing First service.

AH/CS trial and associated publications: The AH/CS trial appears to be a well-designed and conducted randomised trial. The published protocol (Goering et al., 2011) describes methods to minimise bias in terms of randomisation, allocation concealment, sample size calculation and dealing with drop-outs and missing data. Evaluation of trial publications using the WWCW checklist generally confirmed that the studies were well-designed and conduct and analysis were appropriate, although details of what was reported varied between publications. The main potential source of bias is the obvious lack of blinding of participants and outcome assessors. It should also be borne in mind that the large number of publications represents the results of a single (albeit relatively large) trial, with data from individual participants appearing in multiple analyses and publications.

US studies: The group of Housing First studies from the US is characterised by a wide range of study designs and methodological approaches. However, the majority of studies were observational or cross-sectional and many did not have a parallel control group. This means that overall this group of studies should be considered to be at high risk of bias.

Other studies: The three other studies included in the Housing First group were generally well-conducted and reported but only one had a controlled design (comparing scattered and congregate site models of HF). Overall this group of studies had a fairly high risk of bias.

5.5 UK evidence

Housing outcomes

The three UK evaluations provided some evidence of positive housing outcomes. In Belfast, 19 out of 24 service users (79%) maintained their tenancy throughout the year 2014(Boyle et al., 2016). Data from five English Housing First services operational for a year or more showed that 59/80 service users (74%) had been housed for a year or more(Bretherton and Pleace, 2015). An evaluation of the Camden Housing First service in London found that 7/13 service users had been successfully housed between March 2012 and May 2013 (Pleace and Bretherton, 2013). The evidence should be interpreted cautiously because of the generally short periods of operation of the respective services and the absence of a control group.

Wellbeing outcomes

The three UK evaluations all reported improvements in some wellbeing outcomes for the majority of service users compared with baseline or before using the service. The main dimensions assessed were personal wellbeing and physical and mental health (Table 4). The findings were based on self-reported information from service users and in one case(Boyle et al., 2016) from staff as well. None of the studies had a comparison group for wellbeing outcomes. All three evaluations identified the fact that some service users had not benefitted from engagement with Housing First. Social isolation for service users living alone in self-contained accommodation was identified as a possible explanation for this.

Table 4: Summary of wellbeing outcomes from UK evaluations of Housing First

Setting	Wellbeing dimensions assessed	Key findings
Belfast(Boyle et al., 2016)	Personal wellbeing; Relationships; Physical health; Mental health; Personal finance; Education and skills; Community wellbeing	During the intervention period, information from staff and service users indicated improvements for the majority in outcomes including self-confidence; relationships with family; overall physical and mental health; reduced alcohol and drug use and associated A&E visits; ability to manage money; and self-care and living skills. However, some service

		users showed no improvement or a deterioration in self-confidence and mental health.
Nine Housing First services in England(Bretherton and Pleace, 2015)	Personal wellbeing; Relationships; Physical health; Mental health	Twenty-six out of 60 service users (43%) reported very bad or bad physical health a year before using Housing First, falling to 17 (28%) for current health. Corresponding figures for mental health were 31 (52%) and 11 (18%). Among the same sample, drunkenness fell from 71% to 66% and illegal drug use from 66 to 53%. Contact with family rose from 21 (35%) to 30 (50%). Anti-social behaviour fell from 78 to 53%. Improvements reported were not uniform.
London (Camden)(Pleace and Bretherton, 2013)	Personal wellbeing; Physical health; Mental health; Where we live	There was some evidence of increased engagement with medical treatment and mental health services and also some reductions in drug and alcohol use among people who were using CAMHF. However, some service users were not reported as engaging. There was a marked reduction in anti-social behaviour among CAMHF service users. Service users reported that CAMHF improved their sense of security but boredom and isolation were sometimes a problem.

Qualitative evidence

Qualitative evidence from the three UK evaluations consisted of interviews with service users and staff. Findings were summarised narratively without the methods used for any formal qualitative analysis being reported. HF participants had a high opinion of the programme they were involved with and the support given to them by staff. A key finding from the evaluation of nine HF services across England was the perception that HF was able to engage successfully with people with a long

history of homelessness and often succeeded in ending their homelessness when other programmes had failed.

5.6 International evidence

Housing outcomes

The international evidence confirmed the findings of the earlier systematic review that Housing First has a beneficial effect on housing stability compared with treatment as usual or other housing interventions. Seven studies used a before/after design comparing outcomes after exposure to Housing First with baseline or pre-intervention data.

Canadian AH/CS study

The primary outcome of the AH/CS study was housing stability, defined as the percentage of days spent in stable housing. The most important publications from the study reported the 2-year outcomes for people with moderate and high mental health support needs across the five cities involved in the trial. These groups were reported separately because of the different types of mental health support they received as noted above. Housing First participants with high support needs spent more time in stable housing compared with the control group (71% vs. 29%), entered stable housing more quickly (73 vs. 220 days) and had longer average tenure at the end of the study (281 vs. 115 days) (Aubry et al., 2016). Self-rated housing quality was higher in the Housing First group (adjusted standardised mean difference (ASMD) 0.17, $p<0.01$). For those with moderate mental health needs, the adjusted percentage of days stably housed was again higher among the intervention group than the control group, although adjusted mean differences varied across sites (highest 49.5% (41.1 to 58.0); lowest 33.0% (26.2 to 39.8) (Stergiopoulos et al., 2015). These two papers from a large RCT confirm that Housing First as delivered in the trial had a large positive effect on housing stability for homeless people with moderate or severe mental health support needs.

Other publications from the AH/CS trial reported on housing outcomes for young people (aged 18–24 years) (Kozloff et al., 2016) and members of ethnic minorities (Stergiopoulos et al., 2016). In the study of young people, those randomised to HF were stably housed a mean of 437 of 645 (65%) days for which data were available compared with 189 out of 582 (31%) days for the control group ($P < .001$). The study of ethnic minority participants used an adapted form of HF involving anti-racism and anti-oppression practices. This study also found a significant difference in days stably housed favouring the HF group (75% vs. 41%) (Stergiopoulos et al., 2016). Finally, the AH/CS investigators looked at the quality of housing obtained by the two groups in the trial when they were stably

housed (Adair et al., 2016). Using a housing quality scale developed for the study, the authors found that unit/building quality was significantly higher and less variable in the HF group compared with controls. Housing quality was positively and significantly correlated with housing stability.

In summary, the AH/CS findings confirm the findings of the earlier systematic review and strengthen the case for a positive effect of HF on housing stability for diverse groups of homeless people with mental health problems (including specific subgroups such as young people and members of ethnic minority groups). The findings may be relevant to other homeless people (e.g. those with complex needs but without a diagnosed mental disorder) given appropriate support. The reported better housing quality associated with HF, and its link with housing stability, may be relevant to linking HF with improved wellbeing. However, it is important to remember that these publications all represent the output of a single trial and to consider transferability/applicability issues as discussed further below.

US studies

A number of studies from the USA reported housing outcomes associated with HF programmes (Table 5). These studies represent relatively weak evidence because of limitations based on their study design and/or applicability.

Table 5: US studies reporting housing outcomes for HF programmes

Publication reference	Details	Subgroup	Setting	Main outcome(s)
Brown (2015)(Brown et al., 2015)	Qualitative/mixed methods HF		US single site	Housing satisfaction
Brown (2016)(Brown et al., 2016)	HF		US single site	Community integration
Davidson (2014)(Davidson et al., 2014)	HF US	Homeless people with substance use problems	US various	Substance use
Gilmer (2014)(Gilmer et al., 2014a)	HF US		US	Housing only
Robbins (2009) (Robbins et al., 2009)	Coercion and housing satisfaction compares HF and supportive housing		US various	Housing satisfaction
Stefancic (2012)(Stefancic et al., 2012)	Qualitative HF	People with mental illness and criminal justice involvement	US	Qualitative

Two studies from a group evaluating single-site HF projects reported some data on housing outcomes(Brown et al., 2015, Brown et al., 2016). In one study (Brown et al., 2016), HF participants were compared with age-matched controls (91 in each group) receiving standard services (i.e. treatment as usual). After 12 months, 78% of Housing First participants remained in the programme and 12.1% had transferred to other residential arrangements, i.e. 90.1% had not returned to homelessness. Among the comparison group, 35.2% of participants were housed at 12 months ($p<0.001$). Housing First participants experienced significantly fewer days of homelessness ($p<0.001$). Another study of the same single-site HF programme reported that 61% of participants (n=33) wanted to remain in the programme (Brown et al., 2015).

Three other studies examined a range of HF programmes. Two of these looked at the relationship between fidelity to HF principles and housing outcomes. In a 12-month study of participants in nine scattered site HF programmes, participants in programmes with greater fidelity to consumer participation components of HF were more likely to be retained in housing (hazard ratio for discharge 0.35, 95% CI 0.14 to 0.87, $p = 0.02$) compared with participants in lower fidelity programmes(Davidson et al., 2014). A large (n=6584) 12-month study in California found that days spent homeless after enrolment declined more sharply for high-fidelity than low-fidelity programmes (compared with the pre-enrolment period) (Gilmer et al., 2014a). The number of days spent living independently in an apartment or single room increased by 33 at the high-fidelity FSPs but declined by 30 at the low-fidelity programmes ($p<0.001$). Finally, Robbins et al.(Robbins et al., 2009) interviewed participants (n=136) in five HF and supported housing programmes. Participants were asked about their satisfaction with their housing and perceived coercion to undergo treatment. The authors concluded that HF programmes produced levels of satisfaction comparable to those of other supported housing programmes without compromising their policy of avoiding coercion.

One other study with data on housing outcomes was a primarily qualitative study involving people receiving both HF and mandatory treatment under an alternative to incarceration programme (Stefancic et al., 2012). The majority of the 20 participants remained in the HF programme after four years and reported positive outcomes, which many attributed to having a home of their own.

Other studies

Two other studies of HF interventions reported on housing outcomes. In an early study from Germany of supplying homeless people with permanent housing, 86% of participants (n=129) were

able to maintain or improve housing stability over 3 years compared with baseline (Fichter and Quadflieg, 2006). Holmes et al. reported a marked increase in housing stability for homeless people with psychosis in the 2 years following admission to a purpose-built HF unit in Melbourne, Australia compared with the previous 2 years (Holmes et al., 2016). However, detailed figures were not provided.

Overall, the international literature supports the effectiveness of Housing First in improving housing outcomes for homeless people with mental health problems. People with associated substance abuse issues seem to benefit as much as those without. There is some indication that fidelity to core Housing First principles may be associated with better outcomes. There is limited evidence to compare different ways of delivering HF programmes (single-site vs. scattered site).

Wellbeing outcomes

Housing First studies reporting wellbeing outcomes are summarised in Tables 6 and 7 below. Thirteen publications from the AH/CS trial and eleven from US settings provided at least some quantitative data on wellbeing outcomes. In both groups of studies, the dimensions most commonly evaluated were personal wellbeing (e.g. quality of life) and physical and mental health. The dimension 'where we live' was more commonly evaluated in US studies.

Interpretation of the AH/CS trial is complicated by the division of the trial into subgroups based on level of support needs and by publications reporting results for different specific outcomes, subgroups and settings. The publications reporting the two-year outcomes for the high needs group (receiving HF with ACT (Aubry et al., 2016)) and the moderate needs group (receiving HF with ICM (Stergiopoulos et al., 2015)) reported slightly different wellbeing outcomes. For the high needs participants, Aubry et al. reported higher quality of life (assessed with the Quality of Life Interview) and better community functioning over the two-year period in the HF group. However, differences were greatest in the first year and were reported to be attenuated by the end of the second year (Aubry et al., 2016). In the study of participants with moderate mental health needs, generic quality of life was assessed using the EQ-5D health questionnaire. There was no significant difference between the HF plus ICM and control groups in change in EQ-5D from baseline to 24 months (Stergiopoulos et al., 2015). However, condition-specific quality of life, measured by the Quality of Life Interview-20 total score, showed a statistically significant difference in mean change from baseline to 6 months (5.91 [95%CI, 3.41 to 8.41]) and remained significant through to 24 months (4.37 [95% CI, 1.60 to 7.14]); hence the HF group showed greater improvement over time

than the control group. Both publications reported few significant differences between groups for other secondary and exploratory outcomes related to wellbeing, for example severity of mental health symptoms, substance use problems and number of arrests.

There were clear differences between settings in the AH/CS trial which could have been masked when results were combined across all five cities. An analysis of two-year outcomes from the Toronto arm of the trial (for participants receiving support via ACT) found significant differences favouring the HF group for community functioning, some quality of life subscales and arrests at some time points (O'Campo et al., 2016). This was attributed to Toronto being a city with particularly good access to support services. Similarly, 12-month data from Vancouver revealed significantly higher self-reported quality of life among HF participants at 6 and 12 months regardless of level of need and the type of support they received (Patterson et al., 2013a). The authors noted that efforts had been made to improve services for chronically homeless people following the 2010 Winter Olympics. In both of these analyses, the control (treatment as usual) group also showed improvements in wellbeing over baseline, supporting the availability of good services for homeless people in these two cities.

An adapted HF intervention designed to support homeless people from ethnic minorities also formed part of the Toronto AH/CS trial. This intervention was delivered to participants with moderate mental health needs and was associated with significantly better community functioning (measured on the Multnomah Community Ability Scale (MCAS)) compared with TAU. The intervention group also had significantly better housing stability but most other outcomes did not differ significantly between groups. An analysis of young people (aged 18–24 years) taking part in the AH/CS trial showed that while HF plus support (ACT or ICM) improved housing stability in this group, there was no significant difference for quality of life, community functioning or other wellbeing outcomes.

Publications from the AH/CS trial have also examined other specific outcomes related to health or wellbeing. People with schizophrenia enrolled in the Vancouver arm of the trial showed superior adherence to antipsychotic medication relative to TAU participants only when they received scattered site HF with ACT support. People in single-site HF accommodation with on-site support did not show superior adherence compared with TAU participants. In a study of the whole trial population, HF did not decrease suicidal thoughts (ideation) or suicide attempts over TAU.

One publication from the trial evaluated the effect of HF on employment and income (Poremski et al., 2016). Again, data from all trial participants were analysed (n = 2148). Participants with moderate support needs receiving ICM support had lower odds of obtaining competitive employment compared with moderate needs control participants. There was no significant difference between HF plus ACT and TAU for people with greater support needs. HF also did not appear to increase income although the authors noted that participants may not have declared some sources of income.

US studies

Three included studies from the USA provided some data on personal wellbeing. These were all relatively weak studies that compared outcomes over time or at one point in time (cross-sectional) rather than having a control group. Two studies looked at HF in a scattered-site arrangement. Henwood et al. (Henwood et al., 2014) interviewed participants at entry into housing and 1 year later. Several domains of quality of life improved over time. Community participation was not significantly associated with quality of life. The authors concluded that despite concerns about loneliness and social isolation, measures of quality of life appear to improve with time in independent housing. In a primarily qualitative study by Stefancic et al., (Stefancic et al., 2012) participants (n=20) overwhelmingly reported positive changes since enrolling on a programme that combined HF with mandatory treatment as part of an alternative to custody programme. Yanos et al. (Yanos et al., 2007) reported that residence in independent apartments was significantly associated with greater independence and greater occupational functioning compared with living in congregate settings. It was also significantly associated with a greater subjective sense of choice.

A group of studies conducted by US single-site HF programmes primarily examined health-related wellbeing outcomes. Brown et al. reported that 20/33 (61%) tenants of a single-site HF programme wished to remain in the programme and desire to remain was associated with perceived physical quality of the building and the neighbourhood (Brown et al., 2015). Another study by the same group compared 91 HF participants with 91 matched controls receiving usual care. Participants had serious mental illness and either a history of homelessness or high support needs. In addition to positive housing outcomes, the HF group experienced significantly fewer days of psychiatric hospitalisation over 12 months (Brown et al., 2016). Two studies from a single-site HF programme in the US Pacific Northwest examined alcohol use and suicidality. Alcohol use tended to decline with time spent in the HF programme and the effect was more strongly associated with the individual's motivation to change than their treatment attendance (Collins et al., 2012b). In the second study,

suicidal thoughts were present at baseline in 43% of homeless people with alcohol problems joining the HF programme (n = 134). During 2 years of follow-up there was a significant 43% decrease in suicidal thoughts (p = 0.03) as well as clinically significant suicidal thoughts and intention to die by suicide (Collins et al., 2016). A further study from the same HF programme (n = 91) found that emergency medical service contacts declined during a 2-year follow-up at a rate equivalent to 3% per month of residence in HF (Mackelprang et al., 2014).

Two studies reported wellbeing outcomes from single-site compared with scattered-site HF. A randomised trial examined neurocognitive outcomes in 112 homeless people with serious mental illness who were assigned to group homes or independent apartments with case management (Caplan et al., 2006). A key finding was that for people without a history of substance abuse, executive function improved with group living and declined for those living in independent apartments. Substance abuse blocked the beneficial environmental influence of group living. In another early study (2007), Yanos et al. interviewed 44 previously homeless people with mental illness who had been stably housed for at least a year (Yanos et al., 2007). Quantitative findings indicated that residence in independent apartments was significantly associated with greater independence and greater occupational functioning. It was also significantly associated with a greater subjective sense of choice.

Two studies of fidelity to HF discussed above reported wellbeing outcomes as well as housing outcomes. Davidson et al. found that participants in programmes with greater fidelity to consumer participation components of HF were less likely to report using stimulants or opiates at follow-up (odds ratio 0.17, 95% CI 0.07 to 0.57, p = 0.002). Differences in fidelity to supportive housing components were not significantly associated with differences in outcomes. In a large study of supported housing programmes in California, Gilmer et al. found that only clients of high-fidelity programmes reported being helped to find housing that met their individual needs or helped them work toward their personal goals (Gilmer et al., 2014a). Thus, programmes with high fidelity to HF principles were more likely to improve the 'where we live' dimension of wellbeing.

Other studies

One study from Germany and two from Australia also reported on wellbeing outcomes. Fichter et al. found that placing homeless people with mental illness in permanent housing led to only minor changes in mental health and global functioning over up to 3 years of follow-up (Fichter and Quadflieg, 2006). In a single-site HF programme in Melbourne, Australia, Holmes et al. reported that

participants with psychosis (n = 42) had fewer mental health admissions during the first 2 years of HF compared with 2-year periods before entering and after leaving the programme (Holmes et al., 2016).

Finally, Whittaker et al. compared single-site and scattered site HF programmes in Sydney, Australia. Participants (n = 63) were followed for 12 months. Outcomes were mixed: scattered site participants were more likely to disengage from case management than the single-site participants, however, their contacts with the criminal justice system decreased over time whereas they increased for single-site participants.

In summary, studies of Housing First have investigated wellbeing using a range of different outcome measures but largely focused on personal wellbeing and physical and mental health. Results have been mixed, with the stronger evidence from controlled studies often failing to show a difference between the intervention and control groups. However, evidence from the UK evaluations shows that many service users perceived that their wellbeing had improved following the intervention. Some quantitative data were supplied in support of this conclusion. All the UK evaluations noted that a minority of service users had difficulty engaging with Housing First and their wellbeing showed no improvement or got worse following enrolment into the programme.

5.7 Qualitative evidence

UK qualitative and quantitative evidence are summarised together above. Table 8 (below) summarises the included studies from the Canadian AH/CS trial and various US programmes. The most relevant studies provide a clear insight into how HF may support recovery from the service user's perspective. Studies suggest that the offer of housing may in itself be seen as an opportunity for a fresh start (Henwood et al., 2013). Being housed is associated with hopes of recovery and rebuilding one's identity (Kirst et al., 2014, Polvere et al., 2013). The 'ontological security' associated with being housed (Padgett, 2007) allows many service users to make positive transitions (Macnaughton et al., 2016) and start on a positive trajectory leading to improved health and wellbeing (Patterson et al., 2013b).

Qualitative studies also identify some service users expressing concern about coping when living independently, particularly related to social isolation and loneliness (Polvere et al., 2013). Some service users receiving Housing First have experienced negative trajectories of decline rather than

improvement (Patterson et al., 2013b), while others have expressed a need for additional support (Stergiopoulos et al., 2014). A pilot study suggested that extra peer support can help some service users who were having difficulty attain housing stability (Yamin et al., 2014). A qualitative study in a US single-site HF programme identified some tensions specific to such programmes (Stahl et al., 2016).

Qualitative studies have also addressed HF's role in improving wellbeing for subgroups such as young adults (Holtschneider, 2016). A study of indigenous people taking part in the AH/CS trial found that the intervention met their practical needs but there were cultural barriers to feeling truly 'at home' (Alaazi et al., 2015).

This brief descriptive summary of the qualitative evidence relating to Housing First does not constitute a formal synthesis but it indicates how qualitative evidence complements the quantitative evidence base by going beyond 'what works' to provide information on how and why interventions may work. Insights from qualitative research were incorporated into the conceptual pathway (see section11.3) alongside quantitative evidence.

Table 6: Summary of reporting of wellbeing outcomes from the Canadian AH/CS study

Publication reference	Personal wellbeing	Relationships	Health (physical)	Health (mental)	What we do	Where we live	Personal finance	Education and skills	Governance	Community wellbeing
Adair(Adair et al., 2016)						√				
Aquin (Aquin et al., 2017)				√						
Aubry (Aubry et al., 2016)	√		√	√						
Kozloff (Kozloff et al., 2016)	√		√	√	√					
O'Campo (O'Campo et al., 2016)	√		√	√						
Patterson (Patterson et al., 2013a)	√									
Polvere (Polvere et al., 2013)	√									
Poremski (Poremski et al., 2016)					√		√			
Rezansoff (Rezansoff et al., 2016)				√						
Russolillo (Russolillo et al., 2014)			√							
Stergiopoulos (Stergiopoulos et al., 2016)	√		√	√						
Stergiopoulos (Stergiopoulos et al., 2014)	√			√		√				

Stergiopoulos (Stergiopoulos et al., 2015)	√		√	√						√

Table 7: Summary of reporting of wellbeing outcomes from US studies of Housing First

Publication reference	Personal wellbeing	Relationships	Health (physical)	Health (mental)	What we do	Where we live	Personal finance	Education and skills	Governance	Community wellbeing
Brown (2015)(Brown et al., 2015)						√				
Brown (2016)(Brown et al., 2016)				√						
Caplan (2006)(Caplan et al., 2006)				√	√					
Collins (2012)(Collins et al., 2012b)			√							
Collins (2016)(Collins et al., 2016)				√						
Davidson (2014)(Davidson et al., 2014)			√							
Gilmer (2014)(Gilmer et al., 2014a)						√				
Henwood (2014)(Henwood et al., 2014)	√	√	√							
Mackelprang (2014)(Mackelprang et			√							

al., 2014)										
Stefancic (2012)(Stefancic et al., 2012)	√					√				
Yanos (2007)(Yanos et al., 2007)	√	√				√				

Table 8: Summary of qualitative studies of HF

Publication reference	Participants	Setting	Aim	Authors' key findings
Canadian AH/CS trial				
Alaazi (Alaazi et al., 2015)	Indigenous people	Scattered-site HF; Winnipeg	To explore Indigenous participants' experiences of HF	HF met practical needs. Barriers to feeling 'at home' in terms of connections with land, community and family.
Kirst (Kirst et al., 2014)	Purposive sample of study participants	Scattered-site HF; Toronto	To explore perspectives on hopes for recovery and the role of housing in these hopes	Key themes were: hopes for recovery (including making a new start); hope and personal goal setting; housing as a condition for realisation of hope for future recovery – anticipated and experienced benefits (housing as the first step; anticipated independence and control; anticipated benefits for health and wellbeing; housing as a precursor for relationship rebuilding); and concerns about housing (e.g. risk of social isolation).
MacNaughton (Macnaughton et al., 2016)	Purposive sample of study participants	Scattered-site HF; five cities	To understand the relationship between HF and recovery processes through qualitative narrative interviews	HF participants showed superior housing stability that led to three important transitions in their recovery journeys: (1) the transition from street to home, (2) the transition from home to community and (3) the transition from the present to the future. There was a subgroup of HF participants and many

				more TAU participants who experienced considerable difficulty making positive transitions.
Patterson (Patterson et al., 2013b)	Study participants	Scattered-site HD; Vancouver	To identify trajectories of recovery among homeless adults with mental illness and factors that contribute to positive, negative, mixed or neutral trajectories over time	Participants assigned to HF (n=28) were generally classified as positive or mixed trajectories; those assigned to TAU (n=15) were generally classified as neutral or negative trajectories. Positive trajectories were characterised by a range of benefits associated with good-quality, stable housing (e.g., reduced substance use, greater social support), positive expressions of identity and the willingness to self-reflect. Negative, neutral and mixed trajectories were characterised by hopelessness related to continued hardship, perceived failures and loss.
Polvere (Polvere et al., 2013)	Study participants who had received housing through HF in the previous month	Scattered-site HF; five cities	To better understand how receiving housing prior to treatment impacts engagement and envisaged recovery	Two major themes were identified. Most participants reported that housing represented an early step in rebuilding identity, which enabled them to foresee a different future. However, some respondents experienced demoralisation related to personal challenges, and expressed concerns about adjustment issues and social isolation.
Stergiopoulos (Stergiopoulos et al., 2014)	People randomised to the Housing First (HF) group of the At Home/Chez Soi study	Scattered site HF in Toronto, Canada	To examine participant changes in selected domains 6 months after enrolment	The majority (60 to 72%) of participants followed the expected trajectory of improvement, with the remainder experiencing difficulties. Qualitative data identified loneliness and isolation experienced by HF participants as well as problems of substance abuse and a need for life skills training and support.
Yamin (Yamin et al., 2014)	Participants were (1) current and former tenants of a supported housing programme for people who had had difficulty retaining housing stability while receiving HF services and (2) programme staff	Pilot supported housing programme in Moncton, Canada (urban setting)	To describe a supportive housing pilot programme (peer supported housing) for HF participants who have experienced difficulty achieving housing stability while receiving HF services	Most tenants had a positive view of the programme but also felt that the rules were too restrictive. A key theme for both service users and staff was that the programme allowed some service users to achieve housing stability.

Zerger (Zerger et al., 2014)	People randomised to HF in the At Home/Chez Soi study who experienced delays in housing placement or relocated to different housing (or asked to do so).	Scattered site HF in Toronto, Canada	To provide a better understanding of the use of interim housing in HF programmes	Key themes were related to the volatility of the situation of being in interim housing and the effects of this on therapeutic relationships and engagement with services. Study participants experienced frustration as a result of their situation, resulting in inconsistent attention to recovery goals. HF service providers experienced increased difficulty in integrating housing support with case management.
US studies				
Collins (Collins et al., 2012a)	Chronically homeless individuals with alcohol problems	Single-site HF	To generate a conceptual/thematic description of alcohol's role in residents' lives with a view to developing improved harm reduction interventions	Service users perceived alcohol as having both positive and negative effects on their wellbeing. HF removed barriers to them obtaining housing. HF staff favoured harm reduction over trying to achieve abstinence. The harm reduction approach was seen as respecting service users' autonomy and enabling them to set their own goals.
Henwood (Henwood et al., 2013)	Homeless people who had been accepted into a HF programme but not yet housed	Downtown 'Skid Row' area of Los Angeles, USA	To assess the expectations of homeless people beginning the transition to permanent supportive housing through HF	Three themes emerged from the data: nowhere to go but up, some things stay the same and neighbourhood matters. Participants saw being housed as a fresh start, anticipated greater safety and security and were happy to be remaining in a familiar environment.
Henwood (Henwood et al., 2011)	HF and treatment first service providers	New York, USA	To investigate providers' perspectives on the implementation of Housing First and Treatment First programmes	Three housing-related themes emerged from provider interviews: the centrality of housing; engaging participants through housing; and the right or otherwise to be housed. HF providers saw housing as a basic right rather than something to be earned, although some questioned whether the right was absolute.
Holtschneider (Holtschneider, 2016)	Purposive sample of young people who participated in a TLP between 2003 and 2013	Transitional Living Program (TLP) in Chicago, USA	To understand the impact over time of the housing and support services provided by a TLP directly from the perspectives of formerly homeless young people	Four key themes emerged from the analysis of interview data: family, individual connections, community and preparedness Participants valued TLPs as an appropriate model for young people in housing crisis and believed them to be an essential part of the solution to address youth

				homelessness.
Padgett (Padgett, 2007)	Homeless mentally ill adults who had taken part in the New York Housing Study	New York, USA	To answer the following research questions: 1) How do study participants who obtained independent housing experience, enact and describe having a home'? 2) To what extent do these experiences reflect markers of ontological security?	Themes that emerged from the interviews: Housing gave participants control and self-determination. Housing gave people a sense of pride in undertaking the routines of daily life. Participants valued privacy and freedom from supervision (as compared to transitional housing). Housing allowed participants to construct or repair their sense of identity. Having a home allowed them to think about what was next in their lives. Transitional housing was seen as acceptable rather than optimal.
Stahl (Stahl et al., 2016)	Housing First residents with severe alcohol problems and history of chronic homelessness	Single-site Housing First programme in Washington State, USA	To explore factors that may enhance or endanger housing stability in single-site HF	Three main themes were identified: sense of community (with tension between seeking connection and seeking space); stability (seeking stability while having concerns about stagnation); and control (with tension between gaining autonomy and relinquishing control).
Stanhope (Stanhope, 2012)	Service users enrolled in HF programme within the last 12 months and case managers from two assertive community treatment (ACT) teams	HF programme in a medium-sized city on the east coast of the USA	To explore service engagement within HF, focusing on how social processes contribute to program effectiveness	Structural aspects of the programme promoted engagement by enabling service users and case managers to create a shared narrative of their common experiences. Quality of social interactions was also vital for engagement and was influenced by how the case managers perceived the service users as well as how the service users understood themselves to be perceived.
Stefancic (Stefancic et al., 2012)	People involved in both Housing First (HF) and an Alternatives to Incarceration (ATI) programme.	Housing First programme in New York City, USA	To understand how people experienced participating in two programmes (HF and ATI) whose underlying principles appeared to be in tension	Participants recognised the constraints of the ATI programme but most felt that the programme was working in their own interests. Participants generally described the HF programme as functioning in the ways in which the providers intended. Participants overwhelmingly reported positive changes since being in the programmes, with particular focus on how having a home enabled them to make changes in their lives or envisage a more positive future.

Watson (Watson et al., 2013)	Programme staff and service users	Four HF programmes in a large Midwestern city	To describe the critical ingredients of the HF model	Based on focus groups and interviews with service users and staff, the essential ingredients for a successful HF programme were: (1) a low-threshold admissions policy, (2) harm reduction, (3) eviction prevention, (4) reduced service requirements, (5) separation of housing and services, and (6) consumer education.

5.8 Transferability/Applicability of the evidence to UK settings

UK evidence: UK evidence is by definition of high applicability but still needs to be interpreted in relation to the local context. The services evaluated by Bretherton and Pleace (Bretherton and Pleace, 2015) covered several different areas of England with different socio-economic characteristics. In particular, London differs from most other areas of the country in having particularly high housing costs and a severe shortage of affordable accommodation. Against this background the ability of local authorities to provide Housing First services in London (Bretherton and Pleace, 2015, Pleace and Bretherton, 2013) is encouraging but the opportunities and challenges may be different in other areas. The service in Belfast reflected the distinctive conditions of Northern Ireland, the service being provided by a religious charity rather than by a local authority directly (Boyle et al., 2016). Overall, different services followed the same principles but there were differences in detail between them. Differences in outcomes may be related to the way the intervention was implemented, other contextual factors or a mixture of the two.

AH/CS study: The AH/CS trial participants appear to be broadly similar to Housing First service users in the UK, with most participants having health problems including serious mental illness and high rates of substance use. There were some ethnic and cultural differences between the Canadian and UK populations. AH/CS was carried out in a number of Canadian cities against a background of funding pressures and housing shortages similar to that seen in the UK. As in the UK, there were differences in the context of the programme in different cities and for different groups (for example minority ethnic and Indigenous populations). However, a number of factors limit the validity of applying the evidence from AH/CS to the UK. Although not always reported in detail, there seem to be differences in the delivery of mental health support, with generally higher levels of support in Canada relative to the UK service evaluations. The level of support available to people in the 'treatment as usual' group may have been higher than would be offered in many places in the UK (although this is difficult to evaluate as there was no comparison group receiving standard housing services in the UK evaluations).

Another relevant factor which varies between countries (including within the UK as well as between the UK and Canada) is the legal and policy framework within which housing support is provided. Finally, it is generally wise to be cautious in extrapolating from research studies to routine practice unless the study has been carefully designed to mimic the conditions of everyday practice.

US studies: Study participants had similar health problems to UK service users, but there are marked differences between the UK and USA in their health and social services systems. This means that outcomes could vary widely between the USA and UK, as well as between different settings in the USA. A particular consideration in evaluating Housing First is that the service began in the USA and staff delivering the service there could be expected to have more experience than their counterparts in the UK, which in turn could influence the outcomes achieved.

In a report for Crisis by Johnsen and Teizeira in 2010 they noted, "*The implementation of Housing First in the UK would not represent anything akin to the paradigm shift in either practice or philosophy that its inception in the US did. The UK already has experience of placing rough sleepers directly into independent tenancies (albeit usually those with low/medium support needs), floating support provision is mainstream, harm minimisation approaches are well ingrained, and client-centred approaches are strongly endorsed by central government and local providers alike."* (Johnsen and Teizeira; 2010: p21). Consequently, any comparison 'usual treatment' within the UK is likely to be less distinctly different to the Housing First approach, as such, it would be expected that both cost and outcomes also be more similar between a Housing First and a treatment as usual approach than in the North American context.

Other studies: Among the remaining studies, applicability of the study from Germany (Fichter and Quadflieg, 2006) is limited by lack of clarity about the intervention's fidelity to Housing First. The findings from the two Australian studies appear to have moderate applicability to the UK, with similar caveats to those mentioned above under AH/CS.

5.9 Overall strength of the evidence

The overall strength of evidence for an effect of Housing First on housing stability and dimensions of wellbeing evaluated in the review is summarised in Table 9 below. The principles of GRADE (Grading of Recommendations, Assessment, Development and Evaluation) were used for the assessment (see section 3.6). The ratings reflect our degree of confidence that the effect observed in the included studies reflects a true effect of the intervention.

Based on this analysis, there is a high level of certainty that Housing First can improve housing stability and measures of physical health. Evidence was classed as moderate for positive effects on

personal wellbeing, mental health and locality-related wellbeing ('where we live') and for absence of effect on personal finance and community wellbeing. Certainty of evidence for other outcomes was rated as low or very low.

The most common reason for downgrading the level of certainty in the evidence was serious inconsistency between studies, i.e. differences in the magnitude and/or direction of effect. The evidence base is highly dependent on publications from the AH/CS trial but in many cases this evidence was supported by the methodologically weaker but more directly applicable UK evaluations, increasing our confidence in our estimates of the strength of the evidence.

The review found little evidence on community wellbeing from the perspective of existing residents who become new neighbours to Housing First clients.

Table 9: Evidence profile based on GRADE principles: level of certainty for effect of Housing First on housing stability and wellbeing

Outcome	Type of evidence	Effect	Initial level of certainty	Concerns about certainty domains	Final level of certainty
Housing stability	3 UK evaluations AH/CS trial (primary outcome) 6 US studies 2 studies from other settings	Increased housing stability	High (based on AH/CS)	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Not serious (Includes UK and non-UK evidence) Imprecision: Not serious Inconsistency: Not serious Publication bias: Not suspected	High
Wellbeing dimensions					
Personal wellbeing	3 UK evaluations AH/CS: 8 publications 3 US studies	Improved personal wellbeing	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Not serious (Includes UK and non-UK evidence) Imprecision: Not serious Inconsistency: Serious (studies vary between showing no effect and significant positive effect; subgroup with negative outcomes identified) Publication bias: Not serious	Moderate
Relationships	2 UK evaluations 2 US studies	Improved relationships	Low	Methodological limitations: Serious Indirectness: Not serious (Includes UK and non-UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Very low
Health (physical)	3 UK evaluations AH/CS: 6 publications 4 US studies	Improved measures of physical health	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Not serious (Includes UK and non-UK	High

				evidence) Imprecision: Not serious Inconsistency: Borderline, not serious Publication bias: Not suspected	
Health (mental)	3 UK evaluations AH/CS: 8 publications 3 US studies 2 studies from other settings	Improved measures of mental health	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Not serious (Includes UK and non-UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Moderate
What we do	AH/CS: 2 publications 1 US study	Improved work-related wellbeing	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Serious (only non-UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Low
Where we live	1 UK evaluation (Pleace and Bretherton, 2013) AH/CS: 2 publications 4 US studies	Improved locality-related wellbeing	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Borderline, not serious (limited UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Moderate
Personal finance	1 UK evaluation (Boyle et al., 2016) AH/CS: 1 publication	No effect on personal finances	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Borderline, not serious (limited UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Moderate
Education and skills	1 UK evaluation (Boyle et al., 2016)	Improved education and/or skills	Low	Methodological limitations: Serious Indirectness: Not serious	Very low

				Imprecision: Serious Inconsistency: Not serious Publication bias: Not suspected	
Governance	No evidence				
Community wellbeing	1 UK evaluation (Boyle et al., 2016) AH/CS: 1 publication	No effect on community wellbeing	High	Methodological limitations: Not serious (includes high quality randomised trial) Indirectness: Borderline, not serious (limited UK evidence) Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Moderate

5.10 Accompanying cost-effectiveness model

Alongside this systematic review the research team also developed a cost-effectiveness model on Housing First compared to floating support and a staircase approach. Details of this are reported separately (Wright et al, 2018). The aim of this sister cost-effectiveness model were twofold. Firstly, to develop a case study of the use of decision analytic modelling (using commonly used technics in the evaluation of health care) relating to wellbeing within the housing sector. Secondly, given the prominence of Housing First arising within this systematic review and the strength of evidence supporting its positive impact upon health and wellbeing, apply these techniques to assess whether Housing First is cost-effective. This cost effectiveness model (Wright et al, 2018) found that based a two-year period each additional day of being stably housed using a Housing First approach, on average, costs an additional £9, and each addition point on a 0-10 life satisfaction scale achieved costs an additional £4,000. However, there is lots of uncertainty around these estimates, particularly around the cost of Housing First and the appropriate case load for Intensive Case Management.

6. Supportive housing and other interventions for homeless people with physical or mental health problems

6.1 Overview

This section of the results presents the evidence for interventions for homeless people who also have either physical or mental health problems. Clearly both the incidence and prevalence of poor physical and mental health are higher within the homeless population, therefore many of the other interventions presented in this report also consider participants mental and physical health. The interventions presented in this section have been identified as differing from Housing First, so Housing First interventions for people with mental health problems are considered with Housing First. However, we have considered Supportive Housing (i.e. housing support generally with other supporting elements) for people with mental health problems in this section.

6.2 Description of included primary studies

A total of 11 studies (including two qualitative studies) were identified through the literature search. In terms of the setting of the interventions, seven were undertaken in the USA (Basu et al., 2011, Sadowski et al., 2009, Burt, 2012, Gilmer et al., 2014b, Padgett et al., 2016, Rich and Clark, 2005, Siegel et al., 2006), one in Australia (Siskind et al., 2014), one in Sweden (Bengtsson-Tops et al., 2014), one in Israel (Weiner et al., 2010) and one in the UK (Killaspy et al., 2016). Nine of the eleven studies had a population of adults with mental health problems. The other two articles (from one study (Basu et al., 2011, Sadowski et al., 2009) reported an intervention for adults with chronic medical illnesses (fifteen physical illnesses that pose an increased mortality risk for homeless individuals). In terms of how mental health problems were diagnosed, the most frequently used was having a DSM IV axis 1 diagnosis, i.e. common clinical disorders (Burt, 2012, Padgett et al., 2016, Rich and Clark, 2005). Other diagnostic (and therefore inclusion) criteria (which were not specifically called an AXIS 1 diagnosis)) are included in Table 10.

Table 10: Diagnoses of study participants (section 6)

Diagnosis	Study

Primary diagnosis of dementia, learning disability, personality disorder, substance misuse, eating disorder or physical disability	(Killaspy et al., 2016)
Diagnosed with a serious(mental) illness for which they have received recognition of at least 40% disability (Setting of Israel)	(Weiner et al., 2010)
Diagnosis of serious mental illness (schizophrenia/schizoaffective disorder, bipolar disorder, major depressive disorder)	(Gilmer et al., 2014b, Siegel et al., 2006)
Psychosis diagnosis and low level of psychosocial functioning (DSM IV)	(Bengtsson-Tops et al., 2014)
ICD 10 codes for psychosis, affective disorders and other disorders including anxiety, personality disorders, pervasive developmental disorders and substance use disorders	(Siskind et al., 2014)

In terms of study size, the two qualitative studies included 29 people and 38 participants. For the quantitative studies, there was a range from 97 (intervention and control group) to 20462 (intervention and control group).

Interventions were aimed at populations who were homeless, or unstably/tenuously housed.

What form did the interventions take?

The interventions reported were all complex and tended to combine housing support with other supportive elements, including employment (Table 11). Some of the interventions were contingent on treatment first or required abstinence throughout time housed as part of the intervention. None of the interventions had a specific treatment element – there were interventions reported which combined case management with housing or compared housing and case management with other types of housing interventions. The largest cluster of evidence was around supportive housing which has been described in Section 10.

Table 11: Interventions and comparators (section 6)

	Intervention	Comparator
(Killaspy et al., 2016)	See section on UK evidence	
(Weiner et al., 2010)	Supportive community housing	Group Homes

	Intervention	Comparator
(Sadowski et al., 2009)	Housing and case management program based on the Housing First model with interim housing at a respite centre following discharge, stable housing after recovery from hospitalisation and case management in hospital, respite and housing sites.	Usual care – discharge planning, no intervention following discharge.
(Burt, 2012)	Permanent housing on a 'housing first' model (including long term rental assistance), support services and targeted employment assistance.	AB2034 – housing on a 'housing ready' model. General employment advice.
(Gilmer et al., 2014b)	Full Service Partnerships – Subsidised permanent housing and multidisciplinary team based services with a focus on rehabilitation and recovery – either through intensive case management or modified assertive community treatment model.	Usual care (identified as receiving outpatient mental health services)
(Padgett et al., 2016)	Supportive housing program	N/A
(Rich and Clark, 2005)	Comprehensive housing program	Specialised case management program
(Siegel et al., 2006)	Supported Housing	Community residences
(Bengtsson-Tops et al., 2014)	Supportive housing for people with severe mental illness	N/A
(Siskind et al., 2014)	The 'Place-Train' model. Transitional Housing following hospital discharge of patients tenuously housed with mental health problems. Six months duration. Housing in a shared apartment with	Matched controls receiving same hospital services.

	Intervention	Comparator
	assistance to identify permanent housing at the end of the intervention. In addition to housing there was also training in independent living skills for up to 12 hours per week	
(Basu et al., 2011)	Housing and case management program based on the Housing First model with interim housing at a respite centre following discharge, stable housing after recovery from hospitalisation and case management in hospital, respite and housing sites.	Usual care – discharge planning, no intervention following discharge.

What outcomes were measured?

The outcomes of interest that were measured in these studies were highly heterogonous both within and between studies. Broadly, outcomes measured were mostly in the areas of housing and mental health. Other outcomes measured included employment, service use and self-reported wellbeing type outcomes (which had clear links to mental health outcomes).

Housing outcomes measured included: permanent tenancy in housing, time taken to achieve stable housing, days in respite, days in shelters, use of housing vouchers).

Table 1212: Housing outcomes (section 6)

Housing Outcome	Paper
Days spent in supportive housing	(Burt, 2012)
Tenancy in permanent supportive housing	(Burt, 2012)
Time taken to housing placement	(Burt, 2012)
Housing satisfaction	(Padgett et al., 2016)

(Mental) health outcomes that were measured included: validated measures such as DSM IV and self-reported mental health related items (loneliness, isolation, quality of life).

Other outcomes that were measured included: employment outcomes, use of health service outcomes, days spent in the justice system, use of case management, recovery trajectories, relationships between professionals and clients, substance use, community integration and self-reported autonomy/choice/empowerment.

There were also a number of studies that measured the costs of interventions and the cost savings as a result of the intervention.

6.3 Quality of included studies

It is important when considering the quality of evidence to consider the choice of study design as well as the quality of the studies (Table 13). Only one of the studies here employed an RCT design and this study was adding an additional bolt on intervention to usual care, so supplementing current best practice.

Table 13: Designs of included studies (section 6)

Study design	Studies
Qualitative	(Padgett et al., 2016, Bengtsson-Tops et al., 2014)
Economic evaluation	(Basu et al., 2011, Killaspy et al., 2016, Gilmer et al., 2014b)
Cross sectional	(Weiner et al., 2010)
RCT	(Sadowski et al., 2009)
Uncontrolled before and after	(Burt, 2012, Siegel et al., 2006)
Controlled before and after	(Rich and Clark, 2005, Siskind et al., 2014)

In addition to examining the overall evidence base, individual study level assessments were made of each of the papers included in this evidence cluster. According to the quality assessment criteria used in this review, the quality of the evidence included was low overall. Not all of the included studies were experimental studies. Of those that were experimental studies, a number did not include a comparator group and for those that did, it was often unclear whether they were

comparing an intervention with usual care or two interventions. The data that was used in a number of studies was administrative data, which can be problematic as it does not always provide complete data to address the research questions. A number of statistical techniques were employed in order to ensure the comparability of intervention and comparator groups, such as propensity score matching which strengthened the studies in which this was used. Due to the nature of the population groups included in the studies, drop out was low, however this was anticipated and measures adopted to ensure that this did not adversely affect the results of the studies.

6.4 UK evidence

There was one paper from the UK which is reported here in detail (Killaspy et al., 2016). This paper looked at three types of supported accommodation for people with mental health problems – namely residential care, supported housing and floating outreach. These are all services which vary in their intensity and therefore in their cost.

Using survey methods, 619 service users were recruited (from 22 residential care services, 35 supported housing services and 30 floating outreach services). The mean age of participants was 46, 66% were male and 81% were White. They all had a mental health diagnosis - a primary diagnosis of dementia, learning disability, personality disorder, substance misuse, eating disorder or physical disability. Data was collected on service quality and costs and service users' quality of life, autonomy and satisfaction with care. Validated tools were used for measurement and the service types were compared using multilevel modelling.

The study found that the intensity of the intervention was closely linked to costs and also closely linked to severity of mental health condition, with the most intensive intervention (residential care) meeting the needs of those with the greatest mental health problems, but also being the most expensive. Self-reported quality of life was higher for those in accommodation with greater support and intensity – the authors hypothesise that with lesser support comes increased reported autonomy (0.145, CI 0.01-0.279, p=0.035) which increases risks for this population. Service quality was the highest for supported housing and satisfaction with care was similar across the three interventions. After adjustment for service quality and sociodemographic and clinical factors, quality of life was similar for service users in residential care and supported housing and lower for those in floating outreach. In terms of costs, the mean cost per resident per week were £640 (£325-£1260)

for residential care, £317 (£16-980) for supported housing and £107 (£23-£160) for floating outreach.

The authors conclude that supported housing is cost effective but that it needs to be balanced against the fact that it is not a long term solution. The quality of life reported by participants seemed to be a balance between promotion of autonomy and provision of support.

6.5 International evidence

Table 14 presents the main results from each of the studies. The bulk of the evidence comes from the USA. Four studies (Sadowski et al., Basu et al., Gilmer et al. and Siegel et al.) looked primarily at costs and healthcare resource use (a possible proxy for the health dimension of wellbeing). Findings were inconsistent, reflecting differences in intervention and study design between the three studies. One study found unsurprisingly that adding additional support to provision of supportive housing improved housing and employment (another indirect measure of wellbeing) outcomes (Burt, 2012). Gender effects were investigated in one study, which found that women's housing outcomes were better with case management than with a comprehensive housing programme, possibly due to the participants feeling better supported (Rich and Clark, 2005). A qualitative study (Padgett et al., 2016) found that supportive housing for people with mental health problems was associated with a variety of different recovery trajectories, comparable to findings from the Canadian AH/CS study (see section 5.7).

Other international studies found no difference in loneliness, quality of life and social support between supportive community housing and group home settings in Israel (Weiner et al., 2010); and a reduction in hospital bed-days associated with a Transitional Housing Team intervention (Siskind et al., 2014). Finally, a qualitative study in Sweden (Bengtsson-Tops et al., 2014) identified a mixture of positive and negative themes, reflecting the complexity of participants' experiences of living in supportive housing.

An overall summary of the key findings and themes from this group of studies is presented in section 6.8.

Table 14: Main results of included international studies (section 6)

Article	Headline message
(Sadowski et al., 2009) USA	A housing and case management program for chronically ill homeless adults (compared with usual care) resulted in fewer hospital days and emergency department visits.
(Basu et al., 2011) USA	A comparative cost analysis of data collected in an RCT demonstrated non-significant cost savings for a housing and case management program for chronically ill homeless adults when looking at costs for medical/health, legal , housing and social service costs compared with usual care.
(Burt, 2012) USA	Housing and special employment supports, when added to permanent supportive housing led to better housing and employment outcomes.
(Gilmer et al., 2014b) USA	Participating in full service partnerships led to an increase in outpatient visits (and therefore costs). Design of supportive housing programmes will need to consider a potential increase in health service costs.
(Padgett et al., 2016) USA	Participation in a supportive housing programme for homeless individuals with mental health problems led to a variety of different recovery trajectories which were influenced by housing, employment and other wellbeing factors.
(Rich and Clark, 2005) USA	An assessment of the influence of gender on the effectiveness of two interventions (comprehensive housing program or specialised case management program) for homeless adults with severe mental illness found that there were short term differential effects. Men experienced improved housing outcomes in the comprehensive housing program compared to case management. Women did better in case management than in comprehensive housing in terms of housing outcomes. This seemingly anomalous result may be explained by the increased interaction with a case worker as part of the case management program case manager may have led to women being better supported and therefore requiring less inpatient hospital treatment (which skewed the housing outcome results) than in the comprehensive housing program.
(Siegel et al., 2006) USA	Comparing housing, clinical and wellbeing outcomes for people in supportive housing with those in community residences, there was no difference in tenure outcomes between housing types. Supportive housing was less costly. The strongest modifier of outcome was self-reported depression/anxiety at baseline.
(Bengtsson-Tops et al.,	Qualitative analysis of user experiences of living in supportive housing led to the development of three themes, demonstrating the complexity of experiences.

Article	Headline message
2014) Sweden	These were: having a nest (a place to rest and someone to attach to), being part of a group (being brought together/community spirit) and leading an oppressive life (questioning identity, sense of inequality and a life of gloom).
(Siskind et al., 2014) Australia	Patients who received the Transitional Housing Team intervention had significantly fewer bed days than the control group. They also reported better living conditions. The intervention cost less per participant than the bed days averted.
(Weiner et al., 2010) Israel	A study comparing degree of loneliness, quality of life and social support in adults living in supportive community housing compared to adults living in a group home found no significant difference between the two models, but a strong relationship between loneliness and quality of life.

6.6 Transferability/Applicability of the evidence

The applicability of the evidence included in this section is largely related to the population and setting of the interventions and the mental health treatment of the individuals that were included in the studies. The majority of studies reported here were from the USA and there are clear differences in the black and minority ethnic homeless population when compared with the UK. The availability of housing may also be a mediating factor, as well as the treatment protocols for people with mental illness and how soon and for how long they would be treated and whether it would be before or alongside having a housing intervention delivered. There was only one UK study identified as belonging to this cluster of evidence and whilst directly applicable to the setting, findings from only one study must be treated with caution.

6.7 Overall strength of the evidence

The wellbeing domains that were addressed in each of the individual studies are described in the table below (Table 15). Due to the nature of this population, interventions tended to report both housing and wellbeing related outcomes – both in terms of health but also personal wellbeing and what we do. The relationship between mental health and housing is incredibly complex and interventions have the potential to improve wellbeing outcomes for this specific group in a number of different areas.

Table 15: Wellbeing domains assessed in included studies (section 6)

Wellbeing domain	Yes / no	Outcomes reported
Personal wellbeing (subjective wellbeing)	✓	Quality of Life measures (Weiner et al., 2010) Self-rated quality of life (Rich and Clark, 2005) General (Bengtsson-Tops et al., 2014) Aggregated from community integration, isolation, choice and empowerment and global quality of life (Siegel et al., 2006)
Our relationships	✓	Social support measures (Weiner et al., 2010) Social and emotional loneliness scale (Weiner et al., 2010) Relationship with staff delivering intervention (Rich and Clark, 2005) General (Bengtsson-Tops et al., 2014)
Health	✓	ED presentations (Siskind et al., 2014, Siegel et al., 2006, Sadowski et al., 2009) Inpatient bed days (Gilmer et al., 2014b, Siskind et al., 2014) Validated mental health measures (Siskind et al., 2014, Weiner et al., 2010, Rich and Clark, 2005, Sadowski et al., 2009) Physical health measures (Sadowski et al., 2009) Substance use (Rich and Clark, 2005) Crisis service use (Siegel et al., 2006) Number of hospitalisations (Sadowski et al., 2009)
What we do	✓	Employment (Burt, 2012) Days spent in the justice system (Gilmer et al., 2014b)
Where we live (housing outcomes are in the table above)	✓	General (Bengtsson-Tops et al., 2014)
Personal finance	✗	
The economy	✗	
Education and skills	✗	

Governance	✗	Not applicable

One paper considered recovery trajectories and identified wellbeing issues that were related to recovery – these included, in order of importance, significant other relationships, meaningful activities, mental health, family relationships, medical health, housing satisfaction, employment and substance use.

In terms of GRADE principles (see Figure 1 in section 3.6), some papers could not be evaluated because they did not directly evaluate effectiveness of an intervention (e.g. qualitative and cost studies). The strength of evidence for all outcomes was very low based on mainly non-randomised trial designs and concerns about methodological limitations, indirectness and/or inconsistency.

6.8 Summary

The studies reported here were interventions for homeless adults with either mental or physical health problems – therefore the outcomes that were measured varied between housing outcomes, health related outcomes or wider wellbeing outcomes. It is very difficult to draw firm conclusions across the evidence base about the effectiveness of interventions due to the heterogeneity of the populations and interventions. It is also variable whether the outcomes of an intervention were favourable if it only led to improvements in either housing or health outcomes, not both.

Bringing the evidence base together, the following themes emerge. Wellbeing is improved by individuals moving from being homeless to being housed in outcomes such as loneliness and quality of life. Whilst housing offered the opportunity of 'recovery' from mental health problems, recovery trajectories were variable and the experiences of people with mental health problems moving from being homeless to being housed were complex and contradictory. The importance of social support was reported in this evidence base.

Housing interventions were found to have a variable impact on use of other services. In two studies, housing interventions were found to have a positive impact in decreasing use (and also costs) of hospitals. These studies were of a Transitional Housing Team and Housing First intervention. However, a study which looked at a Supportive Housing intervention, using a Full Service Partnership, found that hospital service use and costs increased as a result of the intervention. A

similar finding was reported by Rich et al (2005). The outcomes that were measured in these studies tended to be more focused on wider service use and impact than on housing outcomes – this is most likely to be due to the nature of the population and the burden that they place on health and other services.

The types of interventions that were delivered to this population were highly variable – whilst five of the papers in this cluster were reported as supportive housing it was still hard to draw many commonalities out about how the intervention was delivered and to who it was delivered. An intervention which reported adding employment support to an existing housing support intervention found that this improved both housing and employment outcomes.

Due to the nature of the population group, interventions were necessarily complex: because of the health problems that were faced by this population, outcomes were often mediated by the mental or physical health problems that individuals had. One study found that the strongest predictor of the outcome of a housing intervention was the mental health of participants at baseline, rather than the type of housing intervention they participated in.

7. Recovery housing

Recovery housing provides housing for homeless or vulnerably housed people recovering from alcohol and substance use disorders usually following a period of in-patient substance abuse treatment. The housing is provided on a temporary basis and can be dependent on them staying abstinent and paying an equal share of the household expenses, for homeless people this can be from their benefits.

7.1 Description of included primary studies

This section presents the evidence on recovery housing for homeless or vulnerably housed people suffering from alcohol disorders or substance misuse problems by examining five studies, reported in ten papers, (Groh et al., 2009, Jason et al., 2006, Jason et al., 2007, Kertesz et al., 2007, Lo Sasso et al., 2012, Mueller and Jason, 2014, Schinka et al., 2011, Tsai et al., 2012, Tuten et al., 2017, Tuten et al., 2012). All of the included research studies were conducted in the USA. Further details for each study are provided in Table 16.

Table 16: Study details of recovery house studies

	Study								
	Oxford House Studies					(Kertesz et al., 2007)	(Schinka et al., 2011)	(Tsai et al., 2012)	*Tuten studies*	
	(Groh et al., 2009)	(Jason et al., 2006)	(Jason et al., 2007)	(Lo Sasso et al., 2012)	(Mueller and Jason, 2014)				(Tuten et al., 2012)	(Tuten et al., 2017)
Study Participants	People discharged from substance abuse treatment facilities					Cocaine-using people with significant psychological distress who were homeless or at imminent risk of becoming homeless	Homeless veterans with substance abuse problems	Homeless veterans with substance abuse problems	Patients who had completed medication –assisted opioid detoxification	
Geographical location	Illinois, USA					Birmingham, USA	Transitional housing	Transitional housing	Baltimore City, Maryland, USA	

							across USA	across USA		
Sample size	150 75 Oxford House 75 Usual aftercare condition	150 75 Oxford House 75 aftercare condition	150 75 Oxford House (46 women, 29 men) 75 Usual aftercare condition (47 women, 28 men)	Analysis was based on 129 68 Oxford House 61 Usual Care	150 75 Oxford House 75 Usual care	Total study participants = 195 Abstinence- Contingent Housing (N=63) Non- abstinence- contingent Housing (N=66) No Housing (N=66) Participants analysed for paper were those available for follow-up 12 months after	3188 veterans' records 1250 from programs requiring sobriety at admission 1938 from programs without a sobriety requirement	1271 participants 525 transitional house with no sobriety requirement 746 transitional house with sobriety requirement	243 participants 80 usual care 83 recovery housing alone 80 recovery housing and reinforcement- based treatment	135 participants 55 reinforcement- based treatment with housing case management 80 reinforcement- based treatment plus paid recovery housing

						trial entry. Analysis cohort (N=138)				

Outcomes reported in the included studies are summarised in Tables 17 and 18 below. One of the included studies a randomised controlled trial of Oxford House recovery homes in the USA, was reported in five papers (Groh et al., 2009, Jason et al., 2006, Jason et al., 2007, Lo Sasso et al., 2012, Mueller and Jason, 2014). Oxford House recovery homes are peer-led, rented ordinary family houses. They have between six to 15 residents, often with shared bedrooms. To use the title 'Oxford House' they must be democratically self-run, financially self-supporting, and the residents must immediately expel any resident who returns to using alcohol or illicit drugs. Residents are usually required, or at least strongly encouraged, to engage with the 12 step Alcoholics Anonymous recovery programme.

Participants joined in the RCT of Oxford House following residential substance abuse treatment. The two papers by Jason and colleagues (Jason et al., 2006, Jason et al., 2007) report on the outcomes of substance use, employment, monthly income, criminal activity, self-regulation and length of stay in Oxford House. Mueller (Mueller and Jason, 2014) investigated the effect of living in an Oxford Home on residents personal networks. Another paper considers the effect of resident's different levels of involvement in alcoholics anonymous (AA) on their abstinence (Groh et al., 2009) and the final paper (Lo Sasso et al., 2012) used data from the RCT to conduct a cost-benefit analysis.

The effect of providing recovery housing for homeless veterans' was investigated in two studies (Schinka et al., 2011, Tsai et al., 2012). Both studies considered whether sobriety was a necessary requirement for entry to transitional housing. Outcomes assessed by these studies were drug use, alcohol use, general health, general quality of life, quality of social life, mental health, employment status, employment income, disability income and number of days housed. Additionally, another study (Kertesz et al., 2007) that investigated cocaine users who were homeless or imminently to be homeless considered the impact of recovery housing having abstinent contingent requirements on the outcomes of attainment of stable housing and employment.

Two of the papers examined the results for patients who had completed medication-assisted opioid detoxification (Tuten et al., 2017, Tuten et al., 2012). These two papers are linked with participant data from the RCT being compared with data from an earlier longitudinal research study in the later paper. The RCT had three-arms, recovery housing alone, recovery housing and reinforcement-based intensive outpatient treatment and usual care. Outcomes assessed in these papers were drug abstinence, days in recovery housing, days employed, employment earnings and housing status.

Table 17: Housing and wellbeing outcomes assessed in Oxford House studies

	(Groh et al., 2009)	(Jason et al., 2006)	(Jason et al., 2007)	(Lo Sasso et al., 2012)	(Mueller and Jason, 2014)
Housing outcomes	No specific housing outcomes	Length of stay in Oxford House	Length of stay in Oxford House	No specific housing outcomes	Length of stay in Oxford House
Wellbeing outcomes	1. Abstinence 2. AA 12-step involvement	1. Substance use 2. Rate of employment 3. Monthly income 4. Criminal activity	1. Substance use 2. Self-regulation 3. Employment	1. Alcohol and drug use 2. Treatment enrolment 3. Inpatient and outpatient treatment utilisation 4. Employment 5. Monthly income 6. Days in illegal activity 7. Incarceration	1. Social network size and heterogeneity assessed using Important People Inventory

Table 18: Housing and wellbeing outcomes assessed in non-Oxford House recovery housing studies

				Tuten studies	
Study	(Kertesz et al., 2007)	(Schinka et al., 2011)	(Tsai et al., 2012)	(Tuten et al., 2012)	(Tuten et al., 2017)
Housing outcomes	Days housed in last 60	1. Number of days housed 2. Housing status	1. Days housed, past month 2. Days in institution, past month 3. Days homeless, past month	Days in recovery housing	Housing status
Wellbeing outcomes	1. Days employed in last 60	1. Drug use 2. Alcohol use 3. Number of medical problems 4. Serious medical problems 5. Use of VA services 6. Psychiatric medication in past 30 days 7. Current psychiatric problem 8. Receiving VA financial support	1. General quality of life 2. ASI-Drugs 3. ASI-Alcohol 4. Days used drugs, past month 5. Quality of social life 6. SF-12 Physical 7. SF-12 Mental 8. ASI-Psychiatric 9. Number of days worked for pay 10. Employment income 11. Disability/Public	1. Drug abstinence in previous 30 days 2. Drug abstinence at all time-points 3. Self-reported engagement in non-drug related recreational activity in the past 30 days 4. Employment days of employment 5. Days of illegal	1. Abstinence 2. Employment rate 3. Days employed 4. Employment earnings

		9. Receiving non-VA financial support 10. Any work in past 30 days	assistance income	activity 6. Employment earnings - any and average	

Table 19: Study designs of recovery housing studies

	Study									
	Oxford House Studies					(Kertesz et al., 2007)	(Schinka et al., 2011)	(Tsai et al., 2012)	*Tuten studies*	
	(Groh et al., 2009)	(Jason et al., 2006)	(Jason et al., 2007)	(Lo Sasso et al., 2012)	(Mueller and Jason, 2014)				(Tuten et al., 2012)	(Tuten et al., 2017)
Study design	RCT	RCT	RCT	Cost-benefit analysis using data from an RCT	RCT	RCT	Controlled before/after study	Controlled before/after study	RCT	Secondary analysis of RCT data with data from longitudinal trial

7.2 Quality of included studies

Of the five studies, three (eight publications) had a randomised controlled trial (RCT) (Groh et al., 2009, Tuten et al., 2017, Tuten et al., 2012, Kertesz et al., 2007, Jason et al., 2006, Jason et al., 2007, Lo Sasso et al., 2012, Mueller and Jason, 2014) study design and two were controlled before/after studies (Schinka et al., 2011, Tsai et al., 2012). **Table 19** (above) provides detail of the study design of each paper.

The five Oxford House papers were based on an RCT (Groh et al., 2009, Jason et al., 2006, Jason et al., 2007, Lo Sasso et al., 2012, Mueller and Jason, 2014) with one using data from the RCT to conduct a cost-benefit analysis (Lo Sasso et al., 2012). The study investigating cocaine users was a three-arm RCT (Kertesz et al., 2007) and the linked papers on opioid dependence had the study design of RCT (Tuten et al., 2012) which was then compared with findings from an earlier longitudinal study (Tuten et al., 2017). The studies on homeless veterans' were both controlled before/after studies (Schinka et al., 2011, Tsai et al., 2012).

The Oxford House study appears to have been a reasonably well-conducted RCT. However, no information was provided in the papers about how the randomisation process was conducted. Participants in the Oxford House group were taken to an Oxford House and introduced, ensuring that they joined the Oxford house, while participants in the usual care group were only provided with information about services available. It is important that all participants in a trial are treated the same regardless of the group that they have been allocated to. Participants in the usual care group might not access all of the services available to them which could lead to less favourable outcomes however; the trial is most likely following what would happen in real life. The abstinence and social network outcomes of the trial were self-reported and for abstinence there was no biological confirmation incorporated. The number of participants was small reducing the generalisability despite the randomised design. Additionally, the cost benefit analysis was based on a smaller study sample and the analysis had to estimate a number of important values due to the limited data collected by the trial on detailed cost measures (Lo Sasso et al., 2012). Outcomes in the Oxford House studies were assessed at 24 months. This is a relatively long period of time for an outcome study but it is still unclear if the effects of the Oxford House experience continue over a life-time (Jason et al., 2007).

The RCT on cocaine users (Kertesz et al., 2007) study appears to have been a reasonably well-conducted RCT. The study again had a small size though limiting its generalisability and no details of the randomisation process. The study outcomes were self-report which is open to bias. They were assessed at 1 year which is considered acceptable for this type of study but again longer-term outcomes would be useful.

Only one of the RCT studies (Tuten et al., 2012) provided details of how participants were randomly assigned to groups. Participants were assigned to one of three conditions but the participant sample was self-selected which could have made the intervention appear more effective. Participants were taken to the recovery home while usual care participants were just provided with information about the services available to them. The urine-testing for abstinence also treated the groups differently as there was no systematic urine testing for participants in the usual care group. Urine testing does have the advantage of not being self-reported and therefore less open to bias although there was a fixed schedule of urine testing instead of random meaning that participants knew when to expect the tests which could be open to bias. The later paper (Tuten et al., 2017) analysed data from an RCT and longitudinal study which is an observational design and unable to prove true causality. The follow-up of participants in both studies was limited to 6 months meaning that long-term effects of the intervention were not assessed. The outcome of employment was measured by rate, days of employment and earnings but there was no consideration of the quality or suitability of the employment for the group (Tuten et al., 2017, Tuten et al., 2012).

The two before/after controlled studies (Schinka et al., 2011, Tsai et al., 2012) lacked randomisation and the observational design means that causality can't be inferred. The studies would need to be replicated with a stronger design to demonstrate their true effect. However, both of these studies were based on large samples although the Tsai (Tsai et al., 2012) study was weakened by significant participant attrition. Additionally, the Tsai (Tsai et al., 2012) study analysed data on veterans living in a number of different transitional houses with no data available for the individual houses and the Schinka study (Schinka et al., 2011) analysed data from a number of programs again with no individual data for each program. Features unique to the houses or programs could have influenced the outcomes and more information would be useful to enable a fuller evaluation of why they were or were not successful. Both of the studies relied on client self-report for the outcomes which is open to bias.

7.3 UK evidence

There was no UK evidence on recovery homes.

7.4 International evidence

The group of papers from the Oxford House study discuss findings of different outcomes or aspects of the intervention. The earlier paper by Jason and colleagues (Jason et al., 2006) found that participants in the Oxford House group showed significantly greater positive outcomes for the outcomes of substance abuse, criminal activity and employment than those assigned to the usual-care condition. The later paper by (Jason et al., 2007) found that at 24-months residents that had lived in an Oxford House for 6 months or more had less substance abuse compared to residents of less than 6 months or participants in the usual care group.

The paper reporting on the effect of AA involvement on abstinence (Groh et al., 2009) found that high AA 12-step involvement significantly increased the odds of abstinence for Oxford House residents. Low AA 12-step involvement was not found to have an effect on the rates of abstinence. Another of the papers (Mueller and Jason, 2014) considered the role of Oxford Houses in changing the personal networks of people in recovery. Beneficial changes were found to the personal networks of Oxford House residents including an increase in the number of recovering alcoholics and overall network size particularly for participants residing in the houses for more than 6 months.

A cost-benefit analysis (Lo Sasso et al., 2012) using data from the trial found that treatment costs were roughly $3000 higher in the Oxford House group compared with usual care over a 24 month period. However, Oxford House participants exhibited a net benefit of $29,022 per person suggesting that the additional costs associated with Oxford House treatment were returned nearly tenfold in the form of reduced criminal activity, incarceration and drug and alcohol use as well as increased employment earnings.

The two studies (Schinka et al., 2011, Tsai et al., 2012) researching homeless veterans both found that any differences in outcomes between the abstinent contingent and non-abstinent contingent groups were small or insignificant indicating that sobriety might not be a critical variable in determining outcomes for homeless veterans entering transitional housing.

The effect of abstinent contingent housing was also assessed as part of a three-arm RCT (Kertesz et al., 2007). The trial investigated cocaine-using homeless people receiving intensive behavioural data treatment with housing contingent on abstinence for 6 months, housing not contingent on abstinence for 6 months or no housing. The study included 138 participants and at 12 months 34.1% had stable housing and 33.3% were employed. The local housing programs had limited capacity to house people that had not achieved total abstinence which partly explains the low percentage achieving stable housing and employment. The percentages achieving stable housing were highest for participants assigned to abstinent-contingent housing 42.2%, lowest for participants assigned to no housing 25.6% and intermediate for participants in the non-abstinent-contingent group 33.3% (p = 0.11) The results were distributed similar for stable employment, abstinent-contingent housing 40%, no housing 25.6% and non-abstinent-contingent group 33.3% (p = 0.17). The study authors concluded that their study demonstrates addiction treatment can have a helpful role and suggest that there is a need for services to support people who have reduced but have not stopped all substance use.

Two linked studies investigated participants that had completed medication-assisted opioid detoxification (Tuten et al., 2017, Tuten et al., 2012). The RCT (Tuten et al., 2012) investigated whether abstinent-contingent recovery housing is an effective intervention for maintaining abstinence following residential treatment for opioid dependence. Additionally, the trial investigated whether outcomes were improved when a day treatment program is combined with abstinence-contingent housing. The study found the following rates of abstinence, 50% for recovery housing and treatment, 37% for recovery housing alone and 13% for usual care. At 3 months, participants in both of the recovery house conditions were significantly more likely to be earning money from employment than those in usual care. The most favourable outcomes were found for those participants that stayed in recovery houses for longer. The study authors concluded that their trial supports the efficacy of abstinence-contingent recovery housing for treating a population of inner-city opioid and cocaine users. The recovery housing promotes drug abstinence and employment and outcomes become more favourable when the housing is in conjunction with intensive behavioural counselling. The later paper (Tuten et al., 2017) compared the participants from the recovery housing and reinforcement-based treatment arm of the RCT with participants from an earlier study of reinforcement-based treatment. The two study samples participants were recruited from the same medical detoxification unit and the studies had the same eligibility criteria. Similar abstinence and employment outcomes were found for the two groups of participants had and the study authors

concluded that the findings indicate that the residential behavioural treatment may confer similar outcomes to the treatment combined with recovery housing.

7.5 Transferability/Applicability of the evidence

All of the research studies examined in this section were conducted in the USA meaning that caution should be used in applying the findings to a UK audience. The healthcare and benefits systems in the USA are very different.

The Oxford house model has predominantly been researched in the US and can be for people who are not homeless or housing vulnerable. To stay in an Oxford House, residents have to pay a weekly contribution to the household expenses. However, the weekly contribution could come from disability or public income assistance in the US or in the UK from unemployment benefits. One Oxford House has been set up in the UK[1] and a small study found that it benefited the small number of residents that have lived there so far suggesting that a larger trial would be useful (Majer et al, 2014). Potentially, the Oxford House model could be replicated in the UK and offered to people recovering from alcohol or substance use disorders as an alternative to Housing First that would allow them to live in an abstinent community. Once the Oxford House is set up the societal costs would be employment or disability benefits.

Two of the studies investigated services offered to Veterans (Schinka et al., 2011, Tsai et al., 2012) through US Department of Veterans Affairs. In the UK drug treatment services to our armed forces, navy and air force would not necessarily be provision of recovery houses specifically for veterans meaning that any findings from these studies might not be applicable to the UK context.

7.6 Overall strength of wellbeing evidence

Table 20 provides details of the wellbeing domains investigated in each of the studies.

[1] See http://www.southteesccg.nhs.uk/wp-content/uploads/2014/05/CC-Oxford-House-A5-8pp-Booklet.pdf

Table 20: Wellbeing domains assessed in recovery housing studies

	Study									
	Oxford House Studies					(Kertesz et al., 2007)	(Schinka et al., 2011)	(Tsai et al., 2012)	*Tuten studies*	
	(Groh et al., 2009)	(Jason et al., 2006)	(Jason et al., 2007)	(Lo Sasso et al., 2012)	(Mueller and Jason, 2014)				(Tuten et al., 2012)	(Tuten et al., 2017)
Wellbeing domain										
Personal (subjective) wellbeing	√	√	√	√			√	√	√	√
Relationships					√		√	√		
Health (physical)				√			√	√		
Health (mental)				√				√		
What we do		√	√	√		√	√	√	√	√
Where we live								√	√	√
Personal finance		√		√				√	√	√

Education and skills										
Governance										
Community wellbeing		√	√	√						

The five included studies investigate outcomes in eight of the ten wellbeing domains. There is RCT evidence that recovery houses can improve abstinence which can be linked to personal wellbeing. There is evidence from two controlled before/after studies that outcomes were similar for participants in abstinent contingent and non-abstinent contingent housing.

The two wellbeing domains that were not assessed were governance and education and skills. The wellbeing domain of 'what we do' was investigated in the majority of the studies through outcomes around employment. Employment enables the individuals to support themselves and helps them towards maintain stable housing and is therefore perhaps considered a more relevant outcome than involvement in education and skills. Involvement in education and skills could improve the lives of the study participants in the long term and is a longer term outcome that needs to be considered. It is assumed that community wellbeing would be improved by reductions in criminal activity and incarceration.

It was difficult to assess this group of studies in terms of GRADE principles (Figure 1) because of the variety of research questions they addressed. The initial level of certainty was high for outcomes assessed by randomised trials, but there were concerns about indirectness and inconsistency.

7.7 Summary

Recovery housing for homeless people with alcohol or drug addiction problems has been mainly evaluated in the USA, although similar models are known to be in use in the UK. The five included studies were relatively strong in terms of study design, being a mixture of randomised trials and controlled before/after studies. A wide range of housing outcomes and wellbeing-related outcomes were investigated. Randomised trials evaluated the Oxford House model of recovery housing and also compared abstinence-contingent and non-contingent models. There is RCT evidence that recovery houses can improve abstinence which can be linked to personal wellbeing. There is evidence from two controlled before/after studies that outcomes were similar for participants in abstinent contingent and non-abstinent contingent housing.

The wellbeing domain of 'what we do' was investigated in the majority of the studies through outcomes around employment. Employment enables individuals to support themselves and helps

them to maintain stable housing. Involvement in education and skills could improve the lives of the study participants in the long term.

In interpreting this evidence for the UK setting, it is important to keep in mind the significant differences between the health and welfare systems in the USA and UK. Also, although the intervention is relevant to vulnerable groups, the studies included some people who were arguably not housing-vulnerable but entered recovery housing to address alcohol or drug addiction problems.

The evidence on sober living housing (SLH) identified in this review focused on the Oxford House model, but there are a number of other models of SLH (Wittman and Polcin, 2014). The key characteristics of the contemporary SLHs model identified by Polcin and Henderson (2008) include:

1) an alcohol and drug free living environment,
2) no formal treatment services but either mandated or strongly encouraged attendance at 12-step self-help groups such as Alcoholics Anonymous,
3) required compliance with house rules such as maintaining abstinence, paying rent and other fees, participating in house chores and attending house meetings,
4) resident responsibility for financing rent and other costs, and
5) an invitation for residents to stay in the house as long as they wish provided they comply with house rules.

Recovery housing available across the UK adopts some parts of the contemporary SLH model (e.g. Wirral Community Housing Service, Growing Rooms at St Georges Crypt, Leeds). This review identified minimal evidence on the effectiveness of different components of SLH model.

8. Supported housing

8.1 Description of included primary studies

This group of papers includes studies of supported housing interventions other than those explicitly based on a Housing First model. We included 12 studies in this group. Of these, 10 were performed in the USA and two in Canada; there was no UK evidence that was considered to fit best into this group, although the existence of a degree of overlap with other categories should be noted. Of the included US studies, four evaluated interventions delivered through the federal Collaborative Initiative on Chronic Homelessness (CICH) (Edens et al., 2014, Tsai et al., 2011, Edens et al., 2011, Mares and Rosenheck, 2011) and four dealt with Veterans' Administration (VA) programmes (O'Connell et al., 2016, McGuire et al., 2011, Tsai et al., 2014, Cheng et al., 2007). Three of these dealt with the Housing and Urban Development–Veterans' Affairs Supported Housing (HUD-VASH) programme (O'Connell et al., 2016, Tsai et al., 2014, Cheng et al., 2007).

The CICH was a federally-funded 3-year demonstration programme in which 11 communities throughout the USA received funding to provide a comprehensive range of services to people experiencing chronic homelessness. Chronic homelessness was defined as having a 'disabling condition' and being continuously homeless for 1 year or more or experiencing at least four episodes of homelessness in the past 3 years (Mares and Rosenheck, 2011). The services provided differed between sites but the key components were primary care, mental health and substance abuse services linked to housing; implementation of service, treatment and housing models previously shown to be effective, including modified versions of assertive community treatment (ACT) and HF; and support for partnerships to sustain the service beyond the initial 3-year period.

The HUD–VASH programme involved a combination of VA intensive case management with rent subsidies for homeless veterans with psychiatric and/or substance abuse disorders. The programme was evaluated through a randomised trial in which participants were randomised to HUD–VASH; intensive case management only; or standard VA services. The trial was conducted between 1992 and 1997 and the results were initially published in 2003, outside the time frame for our review. However, further analyses of data from the trial and further evaluations of the programme have been published more recently and were included in the review.

The remaining US studies were published in 2006 (Kessell et al., 2006, Martinez and Burt, 2006) and thus may not represent current best practice in delivering supported housing programmes.

The two studies from Canada evaluated a single-site supported housing programme in Toronto (Hwang et al., 2011) and a supportive housing programme tailored for women, also in Toronto (Kirkby and Mettler, 2016).

8.2 Quality of included studies

The quality of included studies in this group varied but most were at relatively high risk of bias. Most of the evaluations of the CICH programme compared outcomes with baseline, and there was no control group, resulting in high risk of bias. One study did include a control group(Mares and Rosenheck, 2011) but the sample size was relatively small and the control group was smaller than the intervention group. The WWCW checklist identified some differences between studies but limitations in reporting and the non-applicability of some questions to some studies made the results difficult to interpret.

Studies of the HUD–VASH programme and other VA programmes were generally of higher quality, using data from a randomised trial or a large observational sample.

The remaining studies were of variable quality. None used a randomised trial design and only two had a comparison group of people eligible but not accepted for supported housing (Kessell et al., 2006) or remaining on a waiting list for housing.(Hwang et al., 2011)

8.3 UK evidence

There were no UK studies included in this group of papers.

8.4 International evidence

Housing outcomes

One of the studies that evaluated the CICH programme compared outcomes of people receiving CICH services with those of people receiving standard housing and support services in the same

communities (Mares and Rosenheck, 2011). This was not a randomised trial and the sample size was relatively small (n=281 in the CICH group and 104 in the control group) but it represents the strongest study design we found evaluating the CICH programme. The study found that CICH clients had significantly higher levels of housing than control participants (68.6 vs. 45.2/90 days averaged over the two-year follow-up, p<.001). Two related studies using a before-and-after design reported that the CICH programme increased the proportion of days housed relative to baseline in people who were alcohol or illicit drug users (Edens et al., 2014) and in both drug users and abstainers (Edens et al., 2011). In other words, being a heavy drinker or illicit drug user at the start of the programme did not appear to prevent people experiencing improved housing outcomes during the intervention period. The remaining study from the CICH programme (Tsai et al., 2011) did not report outcomes related to housing stability.

Turning to HUD–VASH and other VA programmes, a re-analysis of data from the original randomised trial (Cheng et al., 2007) confirmed that the HUD–VASH group spent significantly more days housed over 3 years compared with the other two groups. A more recent analysis of data from the same trial (O'Connell et al., 2016) did not report housing outcomes. An uncontrolled before/after study with a larger sample (n = 14086) of veterans participating in the HUD–VASH programme(Tsai et al., 2014) found improved housing outcomes (more nights spent in independent housing) from baseline to 6-month follow-up, with no major differences between those with and without alcohol and/or drug use problems. An observational comparison of three VA programmes found no differences in 12-month housing outcomes between them after adjusting for baseline differences and multiple comparisons (McGuire et al., 2011).

Housing outcomes from the remaining studies can be reported briefly. Two relatively early (2006) supported housing studies from the USA found high rates of retention in housing after 2 years. (Kessell et al., 2006, Martinez and Burt, 2006) In a controlled before-and-after study of supported housing in Toronto, Canada, significant improvements in housing stability occurred over time in both the intervention and control groups (Hwang et al., 2011). A service in the same city for women with complex substance use and mental health issues reported achieving increased housing stability, with women remaining in permanent housing for over 3 years on average (Kirkby and Mettler, 2016). However, this finding was mainly based on qualitative data, with limited quantitative information provided.

In summary, the evidence included in this section suggests that supported housing programmes such as those provided by CICH and HUD–VASH can improve housing stability over time for homeless people, including those with problems of mental illness and/or substance use. The evidence that supported housing is superior to other interventions is limited by the lack of randomised evidence for CICH and the long time period since the original randomised trial for the HUD–VASH programme (given that practice in supported housing may have changed since the trial was carried out).

Wellbeing outcomes

Table 21 below summarises the wellbeing outcomes reported in studies of supported housing. Across all studies the most frequently reported dimension of wellbeing was physical health followed by mental health and personal wellbeing. None of the include studies reported effects on education and skills, governance (e.g. political participation) or community wellbeing.

The studies of the CICH programme provided limited evidence for improvements in wellbeing associated with the programme. Tsai et al. (Tsai et al., 2011) reported that 1 year after programme entry, most participants continued to live in communities with higher crime rates, lower education levels, and lower income levels then the state average. For Black participants, living in communities with higher population densities and larger Black populations was associated with higher social support and lower subjective distress, suggesting to the authors that personal preference is an important factor in housing-related wellbeing. Overall, however, while the CICH programme was effective at housing homeless people, it did not appear to improve their wellbeing in the sense of placing them in settings more conducive to wellbeing (Tsai et al., 2011). The study comparing CICH participants with usual care reported no differences between groups in health status, substance use or community adjustment (Mares and Rosenheck, 2011). In their study comparing substance users and abstainers Edens et al. reported that health service use and costs decreased over time in both groups (Edens et al., 2011). The second paper by the same lead author (Edens et al., 2014) investigated a health related outcome (days institutionalised) although it was not clearly reported in the paper whether this changed as a result of exposure to the CICH programme.

Analyses based on the original HUD–VASH randomised trial confirmed that various measures of health-related wellbeing were better in the intervention group relative to one or both of the comparator groups (Cheng et al., 2007) and that the intervention group reported a greater increase in social support compared with the other groups.(O'Connell et al., 2016) Other outcomes related to support and social relationships also favoured the intervention. The large observational study of

HUD–VASH reported improvements over time in global assessment of functioning, alcohol and drug use and social quality of life, with few differences between groups differing in alcohol and drug use at baseline (Tsai et al., 2014). Finally, McGuire et al., who compared different VA programmes, found no differences between programmes for a range of wellbeing outcomes after adjustment for multiple comparisons (McGuire et al., 2011).

Two further studies of US supported housing programmes reported contradictory results for outcomes related to health and health service use. Martinez et al. found reductions in use of acute health services when people were housed compared to the preceding 2 years (Martinez and Burt, 2006). However, Kessell et al. found high and continuing use of services among people accepted into a supported housing programme, with no difference compared with people who were eligible but not accepted for the programme (Kessell et al., 2006). The contradictory results of these studies may reflect differences in setting, population or study design (one was a before/after study and the other had a control group).

Two Canadian studies also reported wellbeing outcomes associated with supported housing programmes. Hwang et al. compared people accepted onto the programme with those remaining on a waiting list (non-randomised). The only significant difference between groups was in satisfaction with their living situation; there were no differences in other aspects of quality of life, healthcare use or substance use (Hwang et al., 2011). The study of a service for women with complex needs in Toronto found that emergency department visits per quarter declined by 86% on average following entry into the programme (Kirkby and Mettler, 2016). Use of withdrawal management services fell by 98% and almost all participants had a consistent primary care provider. Themes of increased housing stability, improved family life and increased sense of safety and wellbeing emerged from the analysis of qualitative data. This study was limited by the lack of a control group and the number of participants was not reported.

Overall, the evidence for a link between supported housing and improved wellbeing appears inconsistent. The strongest evidence is for proxy measures of wellbeing, such as health resource use, rather than direct measures such as quality of life. The HUD–VASH programme has a relatively stronger evidence base for wellbeing outcomes compared with the similar CICH programme, although much of this is derived from a trial conducted in the 1990s. Some studies are limited by lack of a parallel control group, while others found few or no differences between intervention participants and controls receiving usual care or placed on a waiting list. As with housing outcomes,

where data were available subgroups such as people with high levels of alcohol or substance use appeared to benefit from interventions similarly to the general population of homeless people included in the studies.

Table 21: Wellbeing dimensions reported in studies of supported housing

Publication reference	Personal wellbeing	Relationships	Health (physical)	Health (mental)	What we do	Where we live	Personal finance	Education and skills	Governance	Community wellbeing
CICH studies										
Edens (2014)(Edens et al., 2014)			√							
Tsai (2011)(Tsai et al., 2011)	√					√				
Mares (2011)(Mares and Rosenheck, 2011)		√	√	√			√			
Edens (2011)(Edens et al., 2011)	√		√		√					
VA studies										
O'Connell (2016)(O'Connell et al., 2016)		√								
McGuire (2011)(McGuire et al., 2011)		√	√	√			√			
Tsai (2014)(Tsai et al., 2014)	√			√						
Cheng (2007)(Cheng et al., 2007)			√							
Other US studies										
Kessell (2006)(Kessell et al., 2006)			√	√						
Martinez (2006)(Martinez and			√							

Burt, 2006)										
Canadian studies										
Hwang (2011)(Hwang et al., 2011)	√		√							
Kirkby (2016)(Kirkby and Mettler, 2016)	√	√	√							

8.5 Transferability/Applicability of the evidence

Applicability is limited by the fact that all the evidence in this section comes from the USA and Canada. As noted previously, difference between the UK and North America (especially the USA) may affect both the way interventions are implemented and the outcomes achieved. The CICH programme has some overlap with Housing First but it is otherwise difficult to find a directly comparable programme in the UK. The VA programmes also have no specific counterpart in the UK as they cater for the needs of armed forces veterans, who are more numerous in the USA than in the UK. The model of supported housing for women with complex needs evaluated in Canada(Kirkby and Mettler, 2016) could be of interest to the UK setting as the specific needs of homeless women seem to be under-researched. However, the limited data available from the evaluation make it difficult to assess the potential broader applicability of this type of intervention.

8.6 Overall strength of the evidence

Evidence profiles based on GRADE principles are presented in Table 22. We can have moderate certainty that this type of intervention would improve housing stability, despite the lack of directly applicable evidence from UK settings. However, for wellbeing outcomes the level of certainty around the evidence is either low or very low. This was attributable to a combination of methodological limitations of the included studies, lack of UK evidence and inconsistency between studies. For the wellbeing dimensions ‘what we do, ‘where we live’ and ‘personal finance’, there was no evidence of a positive effect on wellbeing, while no evidence at all was found for ‘education and skills’, ‘governance’ and ‘community wellbeing’.

Table 22: Evidence profile based on GRADE principles: level of certainty for supported housing

Outcome	Type of evidence	Effect	Initial level of certainty	Concerns about certainty domains	Final level of certainty
Housing stability	CICH: 3 publications HUD–VASH: Data from RCT and observational study VA programme comparison Other studies: 4 publications	Improved housing stability compared with control or baseline	High	Methodological limitations: Borderline, not serious Indirectness: Serious Imprecision: Not serious Inconsistency: Borderline, not serious Publication bias: Not suspected	Moderate
Wellbeing dimensions					
Personal wellbeing	CICH: 2 publications HUD–VA SH: observational study Other studies: 2 publications	Improvement in measures of personal wellbeing	Low	Methodological limitations: Serious Indirectness: Serious Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Very low
Relationships	CICH: 1 publication HUD–VASH: Data from RCT VA: programme comparison Other studies: 1 publication	Improved relationships (e.g. social support)	High	Methodological limitations: Borderline, not serious Indirectness: Serious Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Low
Health (physical)	CICH: 3 publications HUD–VASH: Data from RCT VA: programme comparison Other studies: 4 publications	Improvement in measures of physical health	High	Methodological limitations: Borderline, not serious Indirectness: Serious Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	Low
Health (mental)	CICH: 1 publication HUD–VASH: Observational study	Improvement in measures of mental health	Low	Methodological limitations: Serious	Very low

	VA: programme comparison Other studies: 1 publication			Indirectness: Serious Imprecision: Not serious Inconsistency: Serious Publication bias: Not suspected	
What we do	CICH: 1 publication)(Edens et al., 2011)	No effect on employment	Low	Methodological limitations: Serious Indirectness: Serious Imprecision: Serious Inconsistency: Not applicable Publication bias: Not suspected	Very low
Where we live	CICH: 1 publication(Tsai et al., 2011)	No effect on locality-related wellbeing	Low	Methodological limitations: Serious Indirectness: Serious Imprecision: Serious Inconsistency: Not applicable Publication bias: Not suspected	Very low
Personal finance	CICH: 1 publication (Mares and Rosenheck, 2011) VA programme comparison	No effect on income	Low	Methodological limitations: Serious Indirectness: Serious Imprecision: Serious Inconsistency: Not serious Publication bias: Not suspected	Very low
Education and skills	No evidence				
Governance	No evidence				
Community wellbeing	No evidence				

9. Housing interventions for ex-prisoners

9.1 Description of included primary studies

This section discusses seven studies investigating housing interventions for ex-prisoners that are or would be homeless or housing vulnerable on release (Bowpitt, 2014, Bruce et al., 2014, Ellison et al., 2013, Grace et al., 2016, London Criminal Justice Partnership, 2011, Lutze et al., 2014, PRO BONO ECONOMICS, 2010). Five of the research studies were conducted in the UK, (Bowpitt, 2014, Bruce et al., 2014, Ellison et al., 2013, London Criminal Justice Partnership, 2011, PRO BONO ECONOMICS, 2010) one in Victoria, Australia (Grace et al., 2016) and one in Washington, America (Lutze et al., 2014). Four of the UK studies were conducted in London and the other one in Nottingham (Bowpitt, 2014).

The studies researched different population of prisoners, details of the participants and sample size in each study are in Table 23**.**

Table 23: Details of participants and sample size in ex-prisoner studies

	Study						
	The New Keys Project (Bowpitt, 2014)	*(Bruce et al., 2014)*	*Through the Gates (PRO BONO ECONOMICS, 2010)*	*(Ellison et al., 2013)*	*(Grace et al., 2016)*	*(Lutze et al., 2014)*	*Diamond Initiative (London Criminal Justice Partnership, 2011)*
Participants	Short-term prisoners	Prisoners with dangerous and severe personality disorders	Prisoners nearing the end of their sentence	Ex-offenders generally prisoners leaving custody or people who are serving or recently completed community service	Women leaving the criminal justice service	High risk/high need offenders	Offenders with sentences of less than 12 months
Sample size	264 (referrals to service)	107 62 intervention group 45 control	473 clients	400 vision house clients Matched PNC data	46	416 208 intervention group 208 control group	473 clients

Six of the studies investigated criminal activity (Bowpitt, 2014, Bruce et al., 2014, Ellison et al., 2013, London Criminal Justice Partnership, 2011, Lutze et al., 2014, PRO BONO ECONOMICS, 2010) as an outcome. Other outcomes investigated included housing status (Bowpitt, 2014, Grace et al., 2016, Lutze et al., 2014), social isolation (Bowpitt, 2014), costs to society of criminal activity (PRO BONO ECONOMICS, 2010), economic activity of ex-prisoners through employment or training (PRO BONO ECONOMICS, 2010) and number in employment or education (Grace et al., 2016). See **Table 24** for further details of the outcomes investigated in each study.

Table 24: Details of outcomes assessed in ex-prisoner studies

	Study						
	The New Keys Project (Bowpitt, 2014)	*(Bruce et al., 2014)*	*Through the Gates (PRO BONO ECONOMICS, 2010)*	*(Ellison et al., 2013)*	*(Grace et al., 2016)*	*(Lutze et al., 2014)*	*Diamond Initiative (London Criminal Justice Partnership, 2011)*
Housing outcomes	*1.* Housing status *2.* Housing support received	No specific housing	No specific housing outcomes	No specific housing outcomes	*1.* Housing stability *2.* Rental histories	Housing status – periods of homelessness	No specific housing outcomes
Wellbeing outcomes	*1.* Criminal activity from police records of interview	Criminal activity: • rates of reconvictions • new convictions	1. Criminal activity • Re-offending rates • % committing	Criminal activity from Police National Computer data: proven	*1.* Number in employment *2.* Number in education or training	Criminal activity: • new convictions • readmission to prison for	Criminal activity

	sample *2.* Social isolation discussed in interviews	• reconvictions within 12 months • mean time to reconvictions	an offence in 12 months after leaving prison 2. Costs to society of criminal activity 3. Economic activity of ex-prisoners through employment or training	reoffending rates at 1 and 2 years		new crimes • revocations	

9.2 Quality of included studies

Three of the seven included studies were cross-sectional analyses of routine data, three were mixed-methods evaluations and one was an economic evaluation, see **Table 25**.

Table 25: Study designs of ex-prisoner studies

	Study						
	The New Keys Project (Bowpitt, 2014)	*(Bruce et al., 2014)*	*Through the Gates (PRO BONO ECONOMICS, 2010)*	*(Ellison et al., 2013)*	*(Grace et al., 2016)*	*(Lutze et al., 2014)*	*Diamond Initiative (London Criminal Justice Partnership, 2011)*
Study design	Mixed-methods evaluation	Cross-sectional analysis of routine data	Economic evaluation	Cross-sectional analysis of routine data	Mixed-methods evaluation	Cross-sectional analysis of routine data	Mixed-methods evaluation

All of the studies designs had potential for bias and were unable to truly evaluate the effectiveness of the interventions. The studies all had small samples which limits their generalisability. All of the studies were small as they were testing a new intervention (Bowpitt, 2014, Bruce et al., 2014, Ellison et al., 2013, Grace et al., 2016, London Criminal Justice Partnership, 2011, Lutze et al., 2014, PRO BONO ECONOMICS, 2010) and thus would need to demonstrate potential effect before a bigger trial utilising a more robust study design was possible. A number of the studies did not have a control group for comparison (Bowpitt, 2014, Ellison et al., 2013, Grace et al., 2016, London Criminal Justice Partnership, 2011, PRO BONO ECONOMICS, 2010). Two of the studies used matched control for comparison (Ellison et al., 2013, London Criminal Justice Partnership, 2011).

The use of mixed-methods to evaluate interventions did helpfully incorporate the views of the service users and people delivering the intervention.

9.3 UK evidence

Five of the research studies were conducted in the UK making them highly applicable. Four were in London and one in Nottingham.

Two of the five studies investigated the effects of providing housing and services to short-term prisoners at threat of homelessness on release, the New Keys Project (Bowpitt, 2014) and the Diamond Initiative (London Criminal Justice Partnership, 2011).

The New Keys project in Nottingham (Bowpitt, 2014) felt that the results of their evaluation of the small pilot project demonstrated that it was effective in breaking the cycle of homelessness and reoffending among short-term prisoners that were prepared to engage with the service in prison near the end of their sentence. The effectiveness of the project was thought to be due to the work of the Offender Support Officer (OSO) who arranged housing and other services prior to the prisoners' release, meet them on their release to accompany them to services necessary for their immediate resettlement and to help them in their interactions with service providers. However, the OSO's did not have the capacity to be involved in further support after immediate resettlement to help with sustaining housing, preventing rehousing and overcoming social isolation was limited. The project aimed to train and use volunteer mentors for low level contact and support after initial resettlement. Mentors would then be able to assist with helping the ex-prisoners on a longer-term basis. When the New Keys started in 2012 the OSO initially worked with 6 volunteer mentors but they all got jobs and left the scheme. Further evaluation of the longer-term outcomes of this promising initiative would be useful.

The Diamond Initiative was a criminal justice policy innovation set up by the London Criminal Justice Partnership (London Criminal Justice Partnership, 2011). It offered resettlement help to short-term prisoners through multi-agency working in some of London's most challenging locations. The London Criminal Justice Partnership worked with the Metropolitan Police Service, London Probation and six Local Authorities to develop the Diamond Initiative, a multi-agency offender management scheme. The two year findings were determined by an evaluation that was conducted by Strategy, Research and Analysis Unit supported by an independent Academic Reference Group. The evaluation found

that over a 12-month follow up period, no significant difference was found between the reoffending rate of the Diamond referral group and the control group; 42.4% of the Diamond referral group and 41.6% of the control group committed a criminal offence (that resulted in a conviction at court) in the year after they were released from prison. The findings on criminal activity were disappointing but the Diamond service users interviewed were positive about their experience of the scheme. The offenders interviewed had agreed to participate with the service and were selected by the project though. The report concluded that it would be useful to consider why the reoffending rates of the Diamond group were so similar to the matched control group and to use lessons learnt from the innovative scheme in future offender management initiatives.

One study set in London evaluated a pilot service providing outpatient support and housing for male offenders with personality disorders (Bruce et al., 2014). The offenders were allocated to outpatient or outpatient with supported housing group. Overall rates of reconviction for the entire sample were lower than predicted by Offender Group Reconviction Scale III (51% over 12 months), with five out of 107 men being reconvicted within 12 months of entering the service. Eleven participants (10%) were reconvicted over the entire study period, with a mean time to first reconviction of 188 days. The initial findings from this naturalistic study appear promising and supports further research into the role of supported housing.

Another study set in London (Ellison et al., 2013) evaluated the effect of providing housing and support on reoffending rates. The study found that the housing intervention reduced proven re-offending over one year by nine per cent and, over two years by 11 per cent. When looking just at those housed, compared to those not housed clients did better than clients who were not housed. This is another initiative that would benefit from a more methodologically robust evaluation design that includes a comparison group.

The Through the Gates programme was analysed by Pro Bono Economics (PRO BONO ECONOMICS, 2010) to determine economic impact. St Giles Trust launched the Through the Gates Programme with London Probation in prisons in London. The Peer Advisers were ex-offenders themselves. The evaluation results showed that the proportion of the respective cohorts that re-offended after being observed for 12 months were 26.16% and 15.50% for re-offenders who have served a sentence longer than a year and Through the Gates cohorts respectively. They concluded that Through the Gates clients were less likely to re-offend compared to the national average by about 40%. The analysis gave a cost benefit ratio for one year of Through the Gates - £10.4million/£1.05 million = 10.

9.4 International evidence

Two of the included studies were international and therefore potentially not as applicable to the UK setting.

The study from USA (Lutze et al., 2014) provided housing assistance for high risk offenders leaving prisoner without somewhere to live. The study utilised a longitudinal design to consider the impact of housing assistance and wraparound services on new convictions, readmission to prison for new crimes and revocations. The outcomes of prisoners who received the housing assistance were compared with the outcomes of offenders at risk of homelessness that were released without support. Overall, the ex-prisoners who received housing assistance had significantly lower rates of new convictions and readmission to prison. The rate of revocations was also lower in the group receiving housing assistance but this result did not reach statistically significant levels.

The small study based in Australia (Grace et al., 2016) attempted to provide housing stability and employment for women who had been in prison. All of the women were housed when data collection was undertaken for the research indicating that the study had been successful in providing short-term housing security. Of the twenty-one women that had received support only four were employed at the end of the study and three of them had found their own employment. Early on in the project it became apparent that there was not long-term sustainability as planned for the women were only provided with 12 months housing and then needed employment to be able to continue to afford the properties. The focus on securing employment prevented the pursuit of longer-terms goals such as education and training.

9.5 Transferability/Applicability of the evidence

All of the ex-prisoners involved in the five UK studies were homeless or vulnerable on their release. Four of the studies were conducted in London and one in Nottingham so they would be most applicable to these areas and consideration of different issues in other areas of the UK (including differences in policy between the UK nations) would need to be considered if applying the findings to the UK as a whole. Also, the studies included different types of prisoners, short-term, high risk, prisoners with severe personality disorders mean that it would not be possible to apply the findings to all prisoners in the UK.

The research study conducted in USA is potentially less applicable to the UK setting as the healthcare, benefits systems and services offered to prisoners can be different. Australia's healthcare, benefits and prison system is similar to the UK making the research study conducted in Australia potentially more applicable.

9.6 Overall strength of wellbeing evidence

The wellbeing domains investigated in each of the studies are detailed in **Table 26**

Table 26: Wellbeing domains assessed in ex-prisoner studies

	Study						
	The New Keys Project (Bowpitt, 2014)	*(Bruce et al., 2014)*	*Through the Gates (PRO BONO ECONOMICS, 2010)*	*(Ellison et al., 2013)*	*(Grace et al., 2016)*	*(Lutze et al., 2014)*	*Diamond Initiative (London Criminal Justice Partnership, 2011)*
Wellbeing domain							
Personal (subjective) wellbeing	√						
Relationships	√						
Health (physical)							
Health (mental)							
What we do			√		√		
Where we live	√						
Personal finance							
Education and skills			√	√	√		√

Governance							
Community wellbeing	√	√	√			√	√

The main wellbeing domain assessed in the studies on housing interventions for ex-prisoners was 'community wellbeing' though outcomes around criminal activity. Criminal activity impacts directly on the life chances and future wellbeing of ex-prisoners, it also impacts directly on the wellbeing of victims and indirectly on community wellbeing through the erosion of community trust and the fear of crime. There was weak and inconsistent evidence that housing interventions for ex-prisoners could reduce criminal activity in the year after ex-offenders left prison. The Australian study (Grace et al., 2016) did investigate the wellbeing domains of 'education and training' and 'what we do' but the lack of jobs available to ex-prisoners meant that few achieved jobs during the project. Additionally, the need for employment to maintain stable housing meant that participants were unable to focus on education or training or other personal issues that would need resolving to enable them to improve their lives. The New Keys project (Bowpitt, 2014) attempted to help prisoners with social isolation but time for this was limited. Funding is limited for these types of initiatives and their evaluation. Reduced criminal activity is very important for individuals and the community that they live in but it is definitely not the whole picture. Further research in this area would beneficially investigate other wellbeing domains over a longer time period.

We did not perform a full GRADE evaluation for these studies because of the small volume of evidence, but weak study designs and concerns about imprecision because of small study samples suggest that the certainty of evidence should be considered as low at best.

10. Housing interventions for vulnerable young people

10.1 Description of included primary studies

There are three studies included in this section (Crane et al., 2014, Livesley et al., 2011, Quilgars et al., 2010). The research studies were all undertaken in the UK (England). One of the studies considers the experiences and housing outcomes of young people resettled in London, Nottingham and Sheffield in the FOR HOME study (Crane et al., 2014). FOR HOME was a large study and the included paper analyses the subset of data for young homeless people. The two reports are evaluations of services for pregnant young women and young parents. The University of Salford evaluated the Action for Children Supported Housing, Supported Tenancy and Teenage Pregnancy Floating Support services in Rochdale (Livesley et al., 2011). An evaluation of the teenage parent supported housing pilot was completed by the Centre for Housing Policy at the University of York, the pilot was delivered by seven local authorities in UK (Quilgars et al., 2010). **Table 27** provides details of the study participants and sample sizes.

Table 27: Participants and sample size in young people studies

	Study		
	(Crane et al., 2014)	(Livesley et al., 2011)	(Quilgars et al., 2010)
Participants	Single homeless young people aged 17-25	Young women who are pregnant 14-25 Young parents 14-25	Young parents or parents-to-be aged 16-19 years
Sample size	109 study participants aged 16-25 out of 400 in FOR-HOME study 59 were in London 50 in Nottingham, Leeds and Sheffield (Collectively Notts/Yorks)	Pregnant women and young parents referred to Pre-tenancy support, Gabriel Court (supported housing) or floating support. Staff delivering service completed a survey. Perspectives were also sought from referring	A total of nearly 1,000 (973) referrals of young parents (including parents-to-be) were received across the seven projects over the pilot period. The vast majority (80%) of referrals were accepted onto the projects. Only a small

		agencies.	proportion of young people declined the services available although staff had to work proactively to sustain the active engagement of young people following referral.

The included studies assessed a wide range of outcomes. Two of the studies reported on the housing status of the study participants (Crane et al., 2014, Quilgars et al., 2010). Across the three studies the outcomes assessed all of the wellbeing domains apart from governance and community wellbeing. **Table 28** provides details of the housing and wellbeing outcomes assessed in the three studies.

Table 28: Outcomes assessed in young people studies

	Study		
	(Crane et al., 2014)	(Livesley et al., 2011)	(Quilgars et al., 2010)
Housing outcomes	Housing status	No specific housing outcomes	Housing status at the point of leaving the project
Wellbeing outcomes	1. Personal wellbeing 2. Engagement in activities 3. Social networks 4. Health problems 5. Addiction problems 6. Employment histories 7. Engagement in work, training and activities 8. Housing 9. Homelessness	1. Motivation and taking responsibility 2. Self-care and living skills 3. Social networks and relationships 4. Drug and alcohol misuse 5. Physical health 6. Emotional and mental health 7. Employability 8. Meaningful use of	1. Self-esteem 2. General health 3. Psychological well-being 4. Employment status 5. Ability to manage own finances 6. Participation in training or courses

	10. Resettlement accommodation 11. Help and support before and after moving 12. Experiences since resettlement 13. Questionnaire about preparation for moving was completed by the resettlement worker 14. Finances and debts	time 9. Offending 10. Managing tenancy and accommodation 11. Managing money and personal administration 12. Employability 13. Skills for viable futures	

10.2 Quality of included studies

Two of the studies used a mixed-methods approach to evaluate services (Livesley et al., 2011, Quilgars et al., 2010). The other study design was uncontrolled before/after (Crane et al., 2014).

The evaluation by the University of York (Quilgars et al., 2010) used a mixed-methods approach to include data analysis of project monitoring and cost data, experiences of project co-ordinators, service providers and the young people. The study did not include a control group to allow direct comparison of outcomes achieved by pilot participants with those achieved by a comparable group of teenage parents not receiving pilot services. Limited comparisons with Supporting People data were taken on a range of outcomes. The evaluation evaluated services in seven different local authorities in England which the authors considered would hopefully provide a representative sample. The evaluation was designed to evaluate the pilot as a whole and it did not intend to provide a detailed comparison of the seven different services. Comparison of the different service would provide a fuller picture and enable consideration of which services or aspects of services were or were not effective.

The University of Salford undertook an evaluation of the new and developing Action for Children services delivered in Rochdale (Livesley et al., 2011). The study lacked a control group for comparison. The evaluation considered data collected from the pilot, the experiences of the young people and the service providers. Outcomes investigated were short-term outcomes and the report did note that the longer-term impact especially on the children of women that had received the service would be of great interest to Action for Children and that it would be advisable to undertake follow-up over the early years' period to determine the extent to which benefits to the children are sustained. Additionally, further research could investigate to what extent the young peoples' fundamental aspirations around family life, housing, returning to education or obtaining employment were achieved in the future.

The FOR-HOME (Crane et al., 2014) study was designed in collaboration with six homelessness service-provider organisations in London, Leeds, Nottingham and Sheffield. Working with homelessness service provider organisations in the areas where the study was conducted aimed to ensure that the project was designed to meet the needs of homeless people in these communities. The study interviewed the participants for eighteen months after resettlement ensuring a detailed understanding of the initial resettlement. Further research to determine the long term outcomes of resettlement would be useful. The study concerned only young people that were able to move to independent housing, not those with more complex problems or challenging behaviour and the sample was drawn from just three areas of England. FOR-HOME involved homeless young people resettled in 2007–8 before the major welfare cuts in the UK started. More studies are needed to determine the effectiveness of resettlement practices in the current economic climate, the suitability of various housing options for vulnerable and disadvantaged young people and the effectiveness of various programmes and services to meet their financial, training and employment needs.

10.3 UK evidence

Two of the studies (Livesley et al., 2011, Quilgars et al., 2010) evaluated services for pregnant teenagers or young parents. The evaluation of the teenage parent supported housing pilot found that an important success of the pilots was providing opportunities for young parents to achieve independent living. At the point of leaving the service, two thirds (67%) of young people were living independently (45% in social housing; 22% in private sector housing), this compared favourably to two in five young people (41%) at referral. The projects were less successful in helping teenage

parents move into employment, education or training. However, many of the participants did give birth just before or during the pilot and unsurprisingly the main change in economic status for participants on leaving the project was an increasing number that were fully occupied with looking after their young children from 42% to 57%. Many young people did however participate in training and/or project development courses, and aspirations for future employment were high. Nearly one fifth (18%) of young people surveyed reported that their general health was 'better' at the end of the pilot period than it had been before using pilot services. More generally, there were consistent reports from young people and project staff of improvements in young people's psychological well-being, especially improved self-esteem as a result of their involvement in the pilot. Young people consistently reported feeling better able to manage their finances as a result of their involvement in the pilot projects. Fewer young people were behind with their rent or board payments at the point of leaving (16%) compared to point of entry (24%).

The report concluded that the services developed were well received by young people and were associated with improved outcomes for teenage parents in a number of areas, most notably by helping them gain and sustain suitable accommodation, and via improved confidence in their own abilities as young adults and parents. Without data on the outcomes of a control group of comparable teenage parents that had not received pilot services any observed outcomes cannot necessarily be attributed directly to the work of the pilot projects. Limited comparisons with Supporting People (a UK government programme aimed at helping vulnerable people to live independently) data indicated that pilot projects performed better than existing services available to teenage parents on some outcomes (debt reduction, choice and confidence, informal learning), less well on others (maintaining accommodation, physical health, paid work), and similarly on others (income maximisation, training and education). The available evidence suggests that enhanced support packages can be advantageous in helping vulnerable young parents to transition from their own childhood towards adult independence.

The evaluation of services developed by Action for Children (Livesley et al., 2011) found that the services impacted positively and in a lasting manner on the lives of those who accessed them. External partners and referring agencies valued them and they were cost effective compared to alternative services available. The Supported Housing, Pre-tenancy and Teenage Floating Support services were highly regarded by young service users, Action for Children staff, and referral and collaborating agencies. Particularly, Gabriel Court offered a unique service providing vital safe and secure accommodation to young women at risk of harm. There is notable, effective interagency

working and communication, based on local knowledge and partnership working developed over time. However, this model is fragile and likely to be influenced negatively by any change. According to the report authors, the non-judgmental, persistent and supportive ethos of the Action for Children staff is held in high esteem and considered imperative to the successful outcomes for the young women and their children.

The FOR- HOME study (Crane et al., 2014)was aimed at young people that moved to independent housing and the sample was drawn from three areas of England. The study found that after fifteen/eighteen months, 69% of the young people were still in their original accommodation, 13% had moved to another tenancy and 18% no longer had a tenancy. Eighty-three per cent were rehoused in social housing (56 per cent local authority, 27 per cent housing association), and 17 per cent in private-rented accommodation. Eighty-seven per cent had self-contained accommodation, and 13 per cent a 'bedsit' with a single room and shared kitchen and bathroom. Most were glad to have been resettled but found the transition very challenging, particularly in terms of managing their own finances and finding stable employment. The prevalence of debts increased substantially over time, and those who moved to private-rented accommodation had the poorest outcomes. People who had been in temporary accommodation more than twelve months prior to resettlement were more likely to retain a tenancy, while a history of illegal drug use and recent rough sleeping were associated negatively with tenancy sustainment.

10.4 International evidence

There was no international evidence retrieved on housing interventions for vulnerable young people.

10.5 Transferability/Applicability of the evidence

The three studies were based in England making them highly applicable to the UK audience. The evaluation by the University of York (Quilgars et al., 2010) evaluated services in seven different local authorities in England meaning that while the findings are most applicable to these areas they hopefully provide a sample that is representative of different areas of UK. The FOR-HOME (Crane et al., 2014) study was designed in collaboration with six homelessness service-provider organisations in London, Leeds, Nottingham and Sheffield. Working with homelessness service provider organisations in the areas where the study was conducted ensured that the project was designed to

meet the needs of homeless people in these communities. The FOR HOME study concerned only young people that were able to move to independent housing, not those with more complex problems or challenging behaviour and the sample was drawn from just three areas of England. FOR-HOME involved homeless young people resettled just before the major welfare cuts in the UK started. More studies are needed to determine the effectiveness of resettlement practices in the current economic climate. The evaluation by the University of Salford (Livesley et al., 2011) evaluated just the one service meaning that any findings would be difficult to generalise to the UK as a whole.

10.6 Overall strength of wellbeing evidence

Table 29: Wellbeing dimensions assessed in young people studies

	Study		
	(Crane et al., 2014)	(Livesley et al., 2011)	(Quilgars et al., 2010)
Wellbeing domain			
Personal (subjective) wellbeing	√	√	√
Relationships	√	√	
Health (physical)	√	√	√
Health (mental)	√	√	√
What we do	√	√	√
Where we live	√	√	√
Personal finance	√	√	√
Education and skills		√	√
Governance			
Community wellbeing			

This group of studies was too small for a GRADE assessment to be worthwhile. The three studies considered all of the wellbeing domains apart from governance or community wellbeing (Table 29). Findings were generally positive for the different domains of wellbeing. However, it must be remembered that these were small studies assessing short-term outcomes.

11. Implications and conclusions

11.1 Main findings

The findings of this systematic review highlight the complexity of the relationship between housing and wellbeing. It is clear that there is not sufficient evidence to demonstrate a linear relationship between housing interventions for vulnerable people, improved housing and improved wellbeing for the individual or community. In many cases, evidence of an effect of housing interventions on wellbeing is limited or even absent. In particular, here is limited evidence for measures of community wellbeing. The findings also highlight that effects are not necessarily uniform across groups of housing-vulnerable people: even in cases where an intervention is beneficial for the majority, some participants may fail to benefit or even experience harmful effects. An example is social isolation and loneliness that may occur when single homeless people, often with mental health or substance abuse problems, are placed in accommodation where they live alone without adequate support. People who are particularly vulnerable may not be able to experience some of the wellbeing benefits associated with housing security as they have too many other difficulties which need to be addressed.

The review included 90 publications (including both peer-reviewed research and informally published reports by housing organisations and charities). We divided the included studies into six 'clusters', although we recognise that there were other options for both the clusters and the assignment of some papers to clusters. By far the largest cluster (47 papers) dealt with interventions classified as 'Housing First', which provide immediate access to housing without preconditions and provision of support by either mobile teams or on-site services. The intervention is designed for homeless people with complex needs and has been mainly evaluated for people with serious mental illness. Housing First has been evaluated in the UK (England and Northern Ireland), in a large Canadian randomised trial (AH/CS), in the USA and other settings. Based on our findings, there is a high level of certainty that Housing First can improve housing stability and measures of physical health in the short term. Evidence was classed as moderate for positive effects on personal wellbeing, mental health and locality-related wellbeing ('where we live') and for absence of effect on personal finance and community wellbeing. Certainty of evidence for other outcomes was rated as low or very low. Research identified a range of factors that can affect the effectiveness of Housing

First, including fidelity to core components and whether the service is delivered in one place or service users are dispersed in separate apartments.

What we classified as 'other interventions for people with mental/physical health problems' (11 papers) formed a heterogeneous group of complex interventions. A key finding was that these interventions provide an opportunity for recovery but not everyone benefits. One study suggested that outcomes may be mediated by baseline health status rather than type of intervention. Only one UK study was included in this group.

Ten papers examined recovery housing, which is specifically for alcohol or substance use problems. The review found some randomised trial evidence but this was of limited applicability to UK settings. A key finding was that recovery houses can improve personal wellbeing through promoting abstinence from alcohol or illegal drugs. Supported housing (12 papers) is a related but broader concept, for which we included no evidence from the UK. Despite this we found moderate strength of evidence for a positive effect on housing stability. However, strength of evidence for wellbeing outcomes was low or very low.

Finally, we examined interventions for other specific groups of housing-vulnerable people. Of seven studies on ex-prisoners, five were from the UK (England), suggesting relatively high applicability. The main outcome examined in the studies was reduction in offending, which could be linked to both community and individual wellbeing. Three UK (England) studies of housing interventions for vulnerable young people showed generally positive outcomes for wellbeing but the studies were small, short-term and generally uncontrolled.

The review has highlighted a general lack of evidence around cost-effectiveness of the interventions investigated. Only a small number of economic evaluations were included and their relevance to the UK varied (economic studies are sensitive to local context and the results are unlikely to be generalisable between different settings).

11.2 Strengths and limitations

A strength of this review was our focus on a broad range of housing interventions for housing-vulnerable people. We sought to be as inclusive as possible rather than excluding studies on grounds of quality. Instead we have discussed the limitations of the studies and assessed the overall strength

of evidence as part of our narrative synthesis. We carried out a thorough search of the literature, including grey literature sources and websites of relevant organisations. We also put out a call for evidence through the WWCW with the objective of locating recent and/or unpublished UK evidence. Despite this, we cannot rule out the possibility that some relevant publications may have been overlooked.

Housing interventions are complex and difficult to classify. In the absence of a generally accepted taxonomy of such interventions, we developed a number of groupings for this review based on examination of the included studies (i.e. not specified in advance). The use of these clusters was valuable for structuring our synthesis but we recognise that with more time and resources a more comprehensive scheme could be developed. In particular, there is a tension between classifying interventions by their elements and by the groups they are aimed at. Furthermore, complex interventions are invariably adapted to meet local needs as has happened with Housing First in both the USA and the UK. Another problem is how to classify 'hybrid' interventions such as the one combining Housing First with elements of compulsory treatment (Stefancic et al., 2012).

While including relevant evidence from other developed countries, we have attempted to focus the review on the needs of decision-makers in the UK. We have assessed applicability of evidence across settings where appropriate, although there is no standard template for this process. The success or otherwise of complex interventions in settings outside their country of origin is likely to be influenced by many contextual factors, some of them impossible to predict in advance. We have provided relatively detailed descriptions of study results in each section to help the reader in interpreting groups of studies that may differ substantially in their research question(s) and design. We have also provided summaries of the evidence at various key points. A possible limitation of the review was the decision to limit inclusion to studies published after 2005. We believe that the context for housing policy has changed so much in recent years (particularly since the 2008 financial crisis) that the applicability of earlier research would be a concern. Nevertheless, it is possible that some potentially valuable earlier research was overlooked.

Time and staff resources for the review were limited (an additional reason for imposing a cut-off date for inclusion) and we did not carry out full duplication or checking of quality assessment or data extraction. This could have resulted in some errors or omissions, although it is unlikely this would have significantly affected the review conclusions. In the interests of transparency we have registered the review protocol in advance on the PROSPERO database (see

https://www.crd.york.ac.uk/prospero/display_record.asp?ID=CRD42017058370) and plan to make the coded data freely available online via the EPPI-Centre.

11.3 Conceptual pathway

An objective of the review was to develop a conceptual pathway to illustrate the links between housing and wellbeing for housing-vulnerable people, based on the evidence identified. Given the focus of this review on active interventions, the pathway (Figure 4) proceeds from the initial offer of housing through to longer-term outcomes associated with different types of intervention (defined as 2 years or more). The pathway is structured as a 'logic model', highlighting key intermediate outcomes (central elements that may explain changes) and moderators (barriers and facilitators that may influence outcomes). It should be noted that in much of the UK and in other settings characterised by a shortage of social and other affordable housing, access is a major moderator and is related to the overall political background and the attitudes of local and central government to housing specifically for housing-vulnerable people.

The pathway emphasises that an offer of housing can start a homeless person on a positive trajectory leading to improved housing and wellbeing. While an intervention such as Housing First can facilitate this process, a minority of service users find it difficult to adapt and may experience negative outcomes including social isolation and loneliness. Qualitative evidence suggests that development of a sense of security following a move to permanent housing appears to be important for service users to experience improved wellbeing (Padgett, 2007). Appropriate support can lead to early improvements in personal and financial wellbeing as well as housing quality ('where we live'), although interventions have not always succeeded in helping people move to 'better' locations.(Tsai et al., 2011) Improvements in outcomes related to health (including use of health services) and to a lesser extent employment can be delivered in the short-term. Relevant factors that can influence outcomes include the specific needs of the service user, the demands imposed by the programme (e.g. adherence to treatment) and the way the programme is actually delivered. Studies of Housing First, for example, indicate a relationship between fidelity to Housing First principles and outcomes (Gilmer et al., 2014a). There is a distinction between programmes offering time-limited support (e.g. some models of recovery housing) and those offering more open-ended support (such as Housing First) but we found little evidence on the comparative effectiveness and cost-effectiveness of different programmes.

In the longer term, service users may begin to feel integrated into the local community and this could lead to improvements in community wellbeing as well as their own individual wellbeing. Evidence in this area from the review is limited but it may be worth exploring the hypothesis that the local context (e.g. the setting of supported housing within the community and relationships between housing providers and the local community) may provide important moderators that influence outcomes.

References and notes showing how the empirical evidence supports the links within the pathway are numbered and footnoted within Appendix 6.

Figure 4: Conceptual pathway for housing interventions to support improved wellbeing (see Appendix

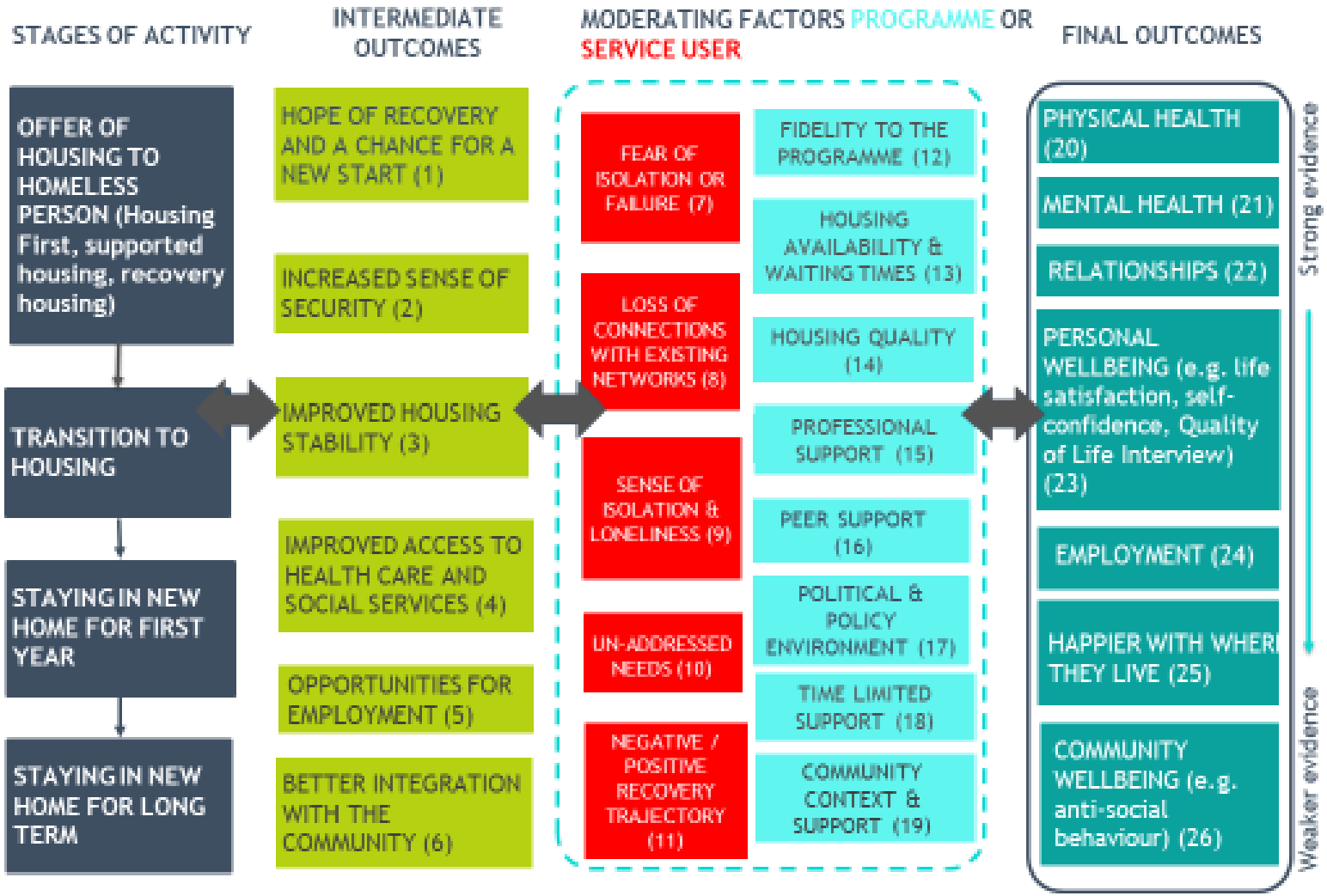


Table 30: Evidence map

	Personal wellbeing	Relationships	Health (physical)	Health (mental)	What we do	Where we live	Personal finance	Education and skills	Governance	Community wellbeing
Housing First	Moderate	Very low	High	Moderate	Low	Moderate	Moderate evidence of no effect	Very low	No evidence	Moderate evidence of no effect
Other interventions for people with physical or mental health problems*	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low	Very low
Recovery housing*	Moderate?	Moderate or low	Moderate or low	Moderate or low	Moderate or low	Moderate or low	Moderate or low	No evidence	No evidence	Moderate or low
Supported housing	Very low	Low	Low	Very low	Very low evidence of no effect	Very low evidence of no effect	Very low evidence of no effect	No evidence	No evidence	No evidence
Interventions for ex-prisoners*	Low or very low	Low or very low	No evidence	No evidence	Low or very low	Low or very low	No evidence	Low or very low	No evidence	Low or very low
Interventions for	Low or	Low or very	Low or	Low or	Low or	Low or	Low or	Low or	No	No evidence

vulnerable young people*	very low	low	very low	very low	very low	very low	very low	very low	evidence	

*Interventions not fully assessed using GRADE principles

11.4 Evidence map

The evidence map (Table 30) provides an overview of the level of certainty attached to different interventions (based on GRADE principles). As we did not conduct full GRADE evaluations for all interventions, the map should be interpreted cautiously. Nevertheless, the map clearly identifies the areas where we have relatively strong evidence, mainly for housing stability-related outcomes and outcomes from Housing First. Certainty of evidence for wellbeing outcomes of other interventions is generally moderate at best (because of the existence of relatively few randomised trials) and often very low (meaning it is unclear whether there is a real effect or not). Some outcomes, such as community wellbeing and especially governance (involvement in politics and related outcomes) have no evidence at all for most interventions.

11.5 Implications for policy/practice

The findings of this systematic review may be difficult to translate into 'actionable messages' for policy and practice. We found that there is generally limited evidence for a simple or direct relationship between housing interventions and wellbeing for the interventions and populations covered by the review. Initial positive effects following an offer of housing may be difficult to sustain, at least for some service users. This finding may reflect the severity of participants' underlying mental and/or physical health issues and associated problems like social exclusion and poverty. Providing housing support for vulnerable people is clearly necessary but may not always be sufficient to improve their wellbeing and that of the community as a whole. The conceptual pathway presented in section 11.3 highlights some of the plausible mechanisms leading to improvements and the associated key moderating factors. Attention to moderating factors that are to some extent within the control of those delivering an intervention may offer the potential for improved outcomes.

Much of the evidence included in this review is classified as being of low quality. This means that the study design places the research at high risk of bias (for example when there is no parallel control group) and makes it difficult to draw causal inferences from the findings. In addition to study quality, we have also attempted to assess applicability of the evidence to UK settings as well as the strength (certainty) of the body of evidence as a whole. Decision-makers could choose to emphasise locally

relevant evidence of lower quality over higher quality evidence from different settings. For example, the evaluation of Housing First services in the UK(Bretherton and Pleace, 2015) did not include comparator groups receiving standard services but it did provide 'real word' quantitative and qualitative data from a range of UK settings. This type of evidence can provide valuable insights into how and why interventions might be effective, complementing evidence from formal trials. The majority of the UK evidence in the review comes from studies conducted in England and decision-makers in other UK nations will need to consider its relevance to their own local contexts.

Given the need to develop the evidence base, decision-makers should consider how to evaluate the impact of any new interventions or changes to services. Local evaluations based on routinely collected data can make a valuable contribution at a lower cost compared with formal research studies. Implications for research are discussed below.

Wellbeing is a complex concept and its various dimensions are measured in different ways, resulting in a wide range of outcome measures. This review has highlighted that there is relatively good evidence for improved physical and mental health outcomes associated with housing interventions. These interventions may thus contribute to improving health and reducing inequalities but in the UK housing is regarded as a social service and services are commissioned by local authorities. Given the current emphasis on integration of services to provide a more person-centred approach, decision-makers could explore the scope for joint commissioning of services between health and social services on a place-based (local or regional) basis.

In considering how to apply this evidence, decision-makers also need to take into account the wider context, including pressure on local authority budgets (which has made Housing First difficult to sustain (Bretherton and Pleace, 2015)) and changes in the political environment.

The Grenfell Tower fire in June 2017 has focused attention on housing inequalities and the problems facing housing-vulnerable individuals and families and this could affect how evidence is received and interpreted at the political (local and national government) level in the UK.

Increasing implementation of Housing First

A Housing Link survey in 2015 found that 25% of homeless accommodation providers reported currently using a Housing First model and 9% were exploring doing so (Homeless Link, 2015). Since then the move to greater implementation of Housing First models in England has expanded; as

revealed in the 2017 allocation £28 million of government funding to pilot the Housing First approach for entrenched rough sleepers in the West Midlands Combined Authority, Greater Manchester, and the Liverpool City Region, and the Housing First England programme (https://hfe.homeless.org.uk/about-housing-first-england). Housing First models are also increasingly being implemented in Scotland (e.g. Turning Point Scotland), Northern Ireland (e.g. Depaul in Belfast) and Wales (e.g. 10 Housing First pilots).

This growth of Housing First implementation presents a potential opportunity for research to generate greater understanding of the cost implications and potential benefits / harms of implementing Housing First scheme in place of, or in addition to, existing homelessness services within a UK context. Although the evidence identified in this report suggests the Housing First approach is promising, much of that evidence cannot be directly applied to the UK, and the UK-based evidence base remains limited. The associated cost-effectiveness model developed in conjunction with this review (Wright and Peasgood, 2018) found considerable uncertainty around both the costs and benefits of Housing First – and did not find the approach to be cost saving as has sometimes been claimed.

The evidence reported here suggests that a Housing First approach does not work for everyone. Furthermore, where the Housing First approach 'works' in terms of improving housing stability and sustaining tenancies – it does not always work in terms of enhancing wellbeing. The review found little positive evidence around Housing First interventions supporting recovery from addiction or social integration. Furthermore, Housing First trials to date show that this approach works for most high need individuals who have experienced chronic homeless. Alternative approaches are likely to be more cost-effective for individuals with lower levels of need.

Key questions in relation to Housing First remain:

- Which are the most cost-effective components of the Housing First approach in the UK context?
- How can the appropriate, cost-effective, level of support be determined, and appropriately tailored over time to the individual?
- How can social integration and recovery from addiction be encouraged within a Housing First approach?

- What should be offered alongside a Housing First scheme to ensure both cost-effective alternatives for those for whom Housing First does not lead to positive outcomes and cost-effective options for those who have low levels of support needs?

Shortage of genuinely affordable housing for low income households

The Homeless Monitor 2017 (Fitzpatrick et al, 2017) presents a picture in which for large parts England housing is no longer affordable for many low income households. The reasons for this include:

- Increasing house price to earnings ratio (around 3:1 in late 1990s to close to 7:1 in 2016)
- A substantial fall in the provision of social sector dwellings since 2011
- Welfare policy changes resulting in increased problems with affordability including: changes to the Local Housing Allowance (LHA) regime for private tenants, the benefit cap, the bedroom tax, discretionary housing payments, the introduction of universal credit, changes to council tax support schemes, benefit sanctions and the abolishing of the Social Fund.

The shortage of affordable housing has been linked with the changing nature of the causes of homelessness with the end of assured shorthold tenancy with a private landlord being the primary reason in England why homeless applicants lost their last settled home (27% of all acceptances in Q4 2017, Ministry of Housing Communities and Local Government, 2017).

Problems with affordability point to the need for structural changes within the housing environment as oppose to the individually targeted interventions discussed in this review. They also imply that a relatively higher percentage of people who are currently homeless in England may have low level support needs (where access to affordable housing can be made available), relative to those from earlier time periods, or from different jurisdictions. The housing and welfare environment across Northern Ireland, Wales and Scotland differ, both from a government policy perspective and housing market conditions. In most geographical areas across Northern Ireland, Wales and Scotland housing is more affordable for low income households than in England.

11.6 Evidence gaps and implications for research

This review has identified substantial evidence gaps as shown by the evidence map and discussion in section 11.4. There is a need for further high quality evaluations of interventions that have been or

may be implemented in the UK. Housing policy is a devolved matter in the UK and we found relatively little evidence of interventions evaluated in Scotland or Wales, where the underlying context may differ significantly from that in England. Studies of Housing First, the most extensively evaluated intervention, should focus on implementation of the model (adapted as required) in UK settings. Researchers and evaluators should provide sufficient details of the interventions to allow others to replicate their work if required. Further research is required to understand the differential impact of Housing First (with a minority of service experiencing increased social isolation or loneliness) and whether certain population groups are less likely than others to benefit from this intervention.

There is a particular requirement for well-designed economic evaluations as decision-makers increasingly require evidence that interventions are cost-effective as well as effective. Such work requires detailed reporting on how interventions are delivered, including details of resource use.

Studies focusing on the wellbeing dimensions that have been relatively neglected to date, for example education and skills, would also be worthwhile. It will be particularly important to examine in more depth the impact of housing interventions for vulnerable people on measures of community wellbeing, in view of the shortage of evidence in this area. There is a shortage of evidence, too, around some vulnerable groups listed in the protocol, for example refugees, recent migrants and Gypsy or Traveller communities.

Many of the studies we included measured outcomes over a relatively short time period, typically 1 or 2 years. Longer-term data would help to establish whether observed improvements in wellbeing (and indeed in housing security) are sustained. It is also possible that outcomes showing little or no initial improvement would improve given sufficient time.

Ideally, future research will use a randomised trial (this may be individual or area based) or at least a controlled observational design to minimise the risk of studies being affected by bias or confounding. It will also be important, however, to make optimum use of audits, service evaluations and qualitative studies, particularly those conducted in the UK. Decision-makers should bear in mind the tendency for local service evaluations to be publicised when outcomes are deemed to be successful, but not when there is a negative or neutral result (an equivalent to publication bias in formal research literature).

Finally, although this was not the main focus of our review, we found limited information on existing theoretical frameworks to inform understanding of the barriers and facilitators to improving wellbeing through housing and support interventions. Developments in this area could inform research by helping researchers to develop and test theoretically informed interventions incorporating a more nuanced understanding of the relationship between housing and wellbeing.

11.7 Conclusions

The findings of this systematic review highlight the complexity of the relationship between housing and wellbeing. We did not find sufficient evidence to demonstrate a linear relationship between housing interventions for vulnerable people, improved housing and improved wellbeing for the individual or community. In many cases, evidence of an effect of housing interventions on wellbeing is limited or even absent and effects are not necessarily uniform across groups of housing-vulnerable people. Despite this, there is a high level of certainty that Housing First interventions can improve housing stability and measures of physical health in the short term. The review has highlighted the general lack of evidence around cost-effectiveness of the interventions investigated. Only a small number of economic evaluations were included and their relevance to the UK varied.

The findings of this systematic review may be difficult to translate into 'actionable messages' for policy and practice. Providing housing support for vulnerable people is clearly necessary but may not always be sufficient to improve their wellbeing and that of the community as a whole. The conceptual pathway presented in section 11.3 highlights some of the plausible mechanisms leading to improvements and the associated key moderating factors. In considering how to apply the evidence, decision-makers also need to take into account the wider context, including pressure on local authority budgets and changes in the political environment. It should also be remembered that secure housing is not of core importance to everyone and policy and practice need to take account of this.

This review has identified substantial evidence gaps as shown by the evidence map and discussion in section 11.4. There is a need for further high quality evaluations of interventions that have been or may be implemented in the UK. There is a particular requirement for well-designed economic evaluations and studies focusing on the wellbeing dimensions that have been relatively under-researched to date, particularly measures of community wellbeing. We also need to understand

better how complex interventions like Housing First work and how to optimise their effectiveness for all service users.

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Appendices

Appendix 1: Medline search strategy

Database: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R)

Search Strategy:

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1 "housing first".mp. (194)

2 "housing plus".mp. (10)

3 (hous* adj2 intervention*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (449)

4 (rehous* or re-hous*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (137)

5 (housing adj2 (program* or practice or outcome* or policy or policies or project or projects or pathway* or placement*)).mp. (968)

6 1 or 2 or 3 or 4 or 5 (1608)

7 (homeless* adj2 manag*).mp. (42)

8 (TLP or transitional living program*).mp. (466)

9 PSH.mp. (569)

10 (support* adj (hous* or home or homes)).mp. (874)

11 social housing.mp. (310)

12 subsidi#ed housing.mp. (110)

13 managed alcohol program*.mp. (6)

14 recovery housing.mp. (22)

15 specialist housing.mp. (3)

16 supported living.mp. (72)

17 service-enriched housing.mp. (3)

18 independent living.mp. (4264)

19 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 (6671)

20 (housing or rehous*).ti. (5502)

21 6 or 19 or 20 (12448)

22 (vulnerable adj2 (person* or people or adult* or m#n or wom#n*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (2292)

23 (mental* ill* or mental health or schizo* or bipolar or bi-polar or psychiatric or manic depress* or anxi* or depress*).mp. (977071)

24 (homeless* or rough sleep*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (10428)

25 learning disab*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (8137)

26 down* syndrome.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (27455)

27 ((domestic or partner) adj2 (abus* or violen*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (13381)

28 (addict* or ((substance* or drug* or cocaine or heroin or amphetamine* or alcohol*) adj2 (misus* or abus* or use* or using))).mp. (273737)

29 (refugee* or asylum seeker* or migrant* or immigrant*).mp. (47657)

30 (gyps* or traveller* or romany).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (9476)

31 troubled famil*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (50)

32 (offender* or (prison* adj3 (ex* or rehabilitat* or release*))).mp. (11189)

33 (veteran* or servicem#n or soldier*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (43331)

34 care leaver*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (10)

35 looked-after.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (449)

36 (disab* or handicap*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (287222)

37 (LGBT or lesbian* or gay or bisexual* or homosexual* or trans-gender or transgender or gender reassign* or gender realign* or transsexual* or trans-sexual*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (39022)

38 or/22-37 (1597295)

39 clinical trial.mp. or clinical trial.pt. or random*.mp. or tu.xs. (5041000)

40 (observational adj (study or studies)).tw. (70397)

41 (case report* or clinical stud* or clinical trial* or comparative stud* or multi* stud* or observational stud* or randomi#ed controlled trial* or twin stud* or validation stud*).mp. (4998876)

42 or/39-41 (7998542)

43 (brit* or united kingdom or uk or england or scotland or wales or Ireland or London or Belfast or Cardiff or Edinburgh or Glasgow or Aberdeen or leeds or Sheffield or Manchester or Birmingham or Bristol or liverpool).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (527469)

44 (australia* or melbourne or canberra or adelaide or austria* or vienna or belgium or brussels or belgian or canada montreal or toronto or vancouver or canadian or chile or czech or prague or denmark or danish or estonia* or finland or france or paris or lyon or germany or berlin or munich or greece or hungary or budapest or iceland or ireland or israel or italy or rome or japan or tokyo or korea or latvia or luxembourg or mexico or netherlands or new zealand or norway or oslo or poland or warsaw or portugal or lisbon or slovak* or slovenia or spain or madrid or sweden or stockholm or switzerland or turkey or USA or united states or america).mp. (2532676)

45 21 and 38 and 42 (1111)

46 (43 or 44) and 45 (448)

47 limit 46 to yr="2005 -Current" (357)

48 remove duplicates from 47 (337)

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Appendix 2: Grey literature searches

Source	Date searched	Results
HACT http://www.hact.org.uk/	25/01/2017	• 16228 The wellbeing value of tackling homelessness http://hact.org.uk/sites/default/files/uploads/Archives/2015/9/Homelessness%20and%20wellbeing%20analysis.pdf • 16229 Community Investment and the Bottom Line Investigating associations between community investment and housing providers' costs using advanced data science techniques http://www.hact.org.uk/sites/default/files/uploads/CIBL%20-%20final%20version.pdf • 16230 The health impacts of housing associations' community investment activities: Measuring the indirect impact of improved health on wellbeing http://hact.org.uk/sites/default/files/uploads/Archives/2015/6/HACT%20Investment%20Activities%20report%202015.pdf • 16231 Approaches to tenancy management in the social housing sector http://www.hact.org.uk/sites/default/files/uploads/Archives/2014/9/Tenancy%20Management%20report%20FINAL.pdf • 16232 Strategic approaches to employment http://www.hact.org.uk/sites/default/files/uploads/Archives/2014/7/Strategic%20approaches%20to%20employment%20-%20report%20July%202014.pdf
Joseph Rowntree Foundation https://www.jrf.org.uk/	25/01/2017	• 16233 How does housing affect work incentives for people in poverty https://www.jrf.org.uk/report/how-does-housing-affect-work-incentives-people-poverty • 16234 Landlords' strategies to address poverty and disadvantage https://www.jrf.org.uk/report/landlords-strategies-address-poverty-and-disadvantage
Sitra http://www.sitra.org/home/	25/01/2017	• 16235 A home is much more than a house: integrated approaches for the housing, health and care needs of vulnerable adults http://www.sitra.org/documents/a-home-is-much-more-than-a-house/?preview=true

		• 16236 Public health housing workforce is the key http://www.sitra.org/documents/public-health-housing-workforce-is-the-key/?preview=true
Housing LIN http://www.housinglin.org.uk/	25/01/2017	• 16237 More than shelter: supported accommodation and mental health http://www.housinglin.org.uk/_library/Resources/Housing/OtherOrganisation/More_than_shelter_pdf.pdf • 16238 Mental Health and Housing http://www.housinglin.org.uk/_library/Resources/Housing/OtherOrganisation/Mental_Health_and_Housing_report_2016_1.pdf
Kings Fund https://www.kingsfund.org.uk/	01/02/17	• 15573 The economics of housing and health – the role of housing associations https://www.kingsfund.org.uk/publications/economics-housing-health
NHS Alliance 'Housing for health' http://www.nhsalliance.org/housing-for-health/	01/02/17	• No relevant documents
National Housing Federation http://www.housing.org.uk/	01/02/17	• No relevant documents
Homeless Link http://www.homeless.org.uk/	01/02/17	• 15574 Housing First in England – an evaluation of nine services http://www.homeless.org.uk/facts/our-research/housing-first-in-england-evaluation-of-nine-services • 15575 'Housing first' or 'housing led'? http://www.homeless.org.uk/sites/default/files/site-attachments/Housing%20First%20or%20Housing%20Led.pdf • 15576 Preventing homelessness to improve health and wellbeing http://www.homeless.org.uk/sites/default/files/site-attachments/20150708.Public%20Health%20England%20-%20Rapid%20Review.pdf • 15577 The unhealthy state of homelessness http://www.homeless.org.uk/sites/default/files/site-attachments/The%20unhealthy%20state%20of%20homelessness%20FINAL.pdf
Mencap https://www.mencap.org.uk/	02/02/17	• No relevant documents
Rethink Mental Illness https://www.rethink.org/	14/02/	• 16239 A better alternative. Outcomes and satisfaction data from our crisis and recovery houses.

	17	https://www.rethink.org/media/2529539/a-better-alternative.pdf
Shelter https://england.shelter.org.uk/	14/02/17	• 16240 From homeless to home http://england.shelter.org.uk/__data/assets/pdf_file/0007/361078/Bristol_Homeless_to_Home_and_Keys_to_the_Future__alleviating_overcrowding.pdf
Local Government Association http://www.local.gov.uk/	14/02/17	• 16241 The LGA Housing Commission Final Report: Building our homes, communities and future http://www.local.gov.uk/documents/10180/7632544/LGA+Housing+Commission+Final+Report/a84df8b5-4631-4320-8b33-567c549aadfa
Development for Communities and Local Government https://www.gov.uk/government/organisations/department-for-communities-and-local-government	14/02/17	• No relevant documents
National Development Team for Inclusion (NDTi) https://www.ndti.org.uk/	14/02/17	• 16242 Housing Choices Discussion Paper 1: What is the evidence for the cost or cost-effectiveness of housing and support option for people with care or support needs? https://www.ndti.org.uk/uploads/files/Housing_Choices_Discussion_Paper_1.pdf • 16243 Evaluation of the shared lives mental health project https://www.ndti.org.uk/uploads/files/Final_NDTi_Cabinet_Office_SLP_MH_Eval_Report.pdf
Centre for Housing Policy (York) https://www.york.ac.uk/chp/	14/02/17	• 16244 Pleace, N. and Bretherton, J. (2013) 'The case for Housing First in the European Union: A critical evaluation of concerns about effectiveness, *European Journal of Homelessness,* Volume 7.2 pp 21-41. • 16245 Pleace, N., Baptista, I., Benjaminsen, L. and Busch-Geertsema, V. (2013) *The costs of homelessness in Europe: An assessment of the current evidence base*, Brussels: European Observatory on Homelessness. • 16246 Pleace, N. and Bretherton, J. (2013) 'SHP and Camden Housing First: A successful pilot of 'Housing First' in London', *SITRA Bulletin,* No. 4, September 2013 http://issuu.com/sitra.org/docs/sitra_bulletin_issue_4_published • 16247 Pleace, N. and Bretherton, J. (2013) *Camden Housing First: A 'Housing First experiment in London'* York, Centre for Housing Policy, University of

		York Camden Housing First (PDF, 667kb) • 16248 Pleace, N. and Bretherton, J. (2012) *What do we Mean by Housing First? Categorising and Critically Assessing the Housing First Movement from a European Perspective,* European Network of Housing Research conference 'Housing: Local Welfare and Local Markets in a Globalised World' 24-27 June, Lillehammer. Norway-Housing First Paper (PDF, 286kb)
Cambridge Centre for Housing and Planning Research http://www.cchpr.landecon.cam.ac.uk/	14/02/17	• No relevant documents
Centre for Housing Research (St Andrews) http://ggsrv-cold.st-andrews.ac.uk/chr/	14/02/17	• No relevant documents
Housing and Communities Research Group (Birmingham) http://www.birmingham.ac.uk/research/activity/social-policy/housing-communities/index.aspx	14/02/17	• No relevant documents
HomelessHub http://homelesshub.ca/	08/03/17	• 16626 Kirby • 16627 Waegmakers
Chartered Institute of Housing http://www.cih.org/	08/03/17	• No relevant documents
Housing Diversity Network http://www.housingdiversitynetwork.co.uk/	08/03/17	• 16249 Centre for Local Economic Strategies Community cohesion and resilience – acknowledging the role and contribution of housing providers http://www.housingdiversitynetwork.co.uk/wp-content/uploads/HDN-CLES-Community-Cohesion-Report-February-2014.pdf • 16250 THE ROLE OF HOUSING ORGANISATIONS IN REDUCING POVERTY: A REVIEW OF STRATEGIC AND BUSINESS PLANS http://www.housingdiversitynetwork.co.uk/wp-content/uploads/housing-policy-poverty-full.pdf
Homes and Communities Agency https://www.gov.uk/government/organisations/homes-and-communities-agency	08/03/17	• No relevant documents

New Economics Foundation http://neweconomics.org/	08/03/17	• No relevant documents
National Care Forum http://www.nationalcareforum.org.uk/	08/03/17	• No relevant documents
Family Mosaic http://www.familymosaic.co.uk/	08/03/17	• About their services but no evaluation – http://www.fmcareandsupport.co.uk/our-services/ • No relevant documents
Young Foundation http://youngfoundation.org/	08/03/17	• No relevant documents
MayDay Trust https://www.maydaytrust.org.uk/	08/03/17	• Our Impact 2014-15 https://www.maydaytrust.org.uk/Handlers/Download.ashx?IDMF=32ff5154-34d6-45cc-b2e2-92b4e57b0c6c
The Bromford Deal http://www.bromford.co.uk/thedeal/	08/03/17	• Neighbourhood coaching approach – http://www.bromford.co.uk/get-to-know-us/what-we-do/the-right-relationship/our-coaching-approach/
Crisis	08/03/17	• 16252 Staircases, elevators and cycles of change: 'Housing First' and other housing models for homeless people with complex support needs http://www.crisis.org.uk/data/files/publications/Housing%20Models%20Report.pdf • 16253 Mental ill health in the adult single homeless population: a review of the literature http://www.crisis.org.uk/data/files/publications/Mental%20health%20literature%20review.pdf • 16254 A roof over my head http://www.crisis.org.uk/data/files/publications/A%20Roof%20Over%20My%20Head%20Sustain%20Final%20Report%202014.pdf • 16255 Sustain http://www.feantsaresearch.org/IMG/pdf/ejh6_2_research2.pdf
Lankelly Chase https://lankellychase.org.uk/	08/03/17	• Summaries of their projects https://lankellychase.org.uk/search/?select-post_type%5B0%5D=project-summary&hidden-s&hidden-current-page=1%2F&current-page=2
Herriot Watt Institute for Social Policy, Housing, Equalities Research (I-SPHERE)	08/03/17	• **16251 Evaluation of 'Housing First' Pilot** (Turning Point Scotland, July 2010 – 2013) Longitudinal evaluation of a 'Housing First' pilot scheme that accommodates homeless people

		involved in drug misuse. Involves a literature review, assessment of monitoring data, and repeat interviews with stakeholders, staff and service users.
Friends Families and Travellers http://www.gypsy-traveller.org/	28/03/17	• No relevant documents
The Foyer Federation http://foyer.net/	28/03/17	• No relevant documents
Housing Plus Academy http://www.traffordhall.com/housing-plus-academy/research-and-policy-docs/	28/03/17	• Joseph Rowntree Foundation The impact of welfare reform on social landlords and tenants http://5de75970f7eb49e9e793-c49f4d7a8eaac88aeea4104af285c3f1.r57.cf3.rackcdn.com/Welfare-reform-impack-FULL.pdf
CRESR http://www4.shu.ac.uk/research/cresr/ourexpertise/housing		• No relevant documents
Research in Urban Studies, University of Glasgow http://www.gla.ac.uk/schools/socialpolitical/research/urbanstudies/projects/		• On-going research with JRF on Housing and work incentives http://www.gla.ac.uk/schools/socialpolitical/research/urbanstudies/projects/housingandworkincentives/ • http://www.gowellonline.com/

Appendix 3: Responses to WWCW call for evidence

Item	Source	Decision	Comments
Supporting People data linkage feasibility study	Sheilah Gaughan	Exclude	Feasibility study, no relevant data/outcomes
Cymorth Cymru case studies	Sheilah Gaughan	Exclude	Individual case descriptions
Welsh Government case studies	Sheilah Gaughan	Exclude	Individual case descriptions
Getting on with money	Jo Goodman	Exclude	Not specifically housing- or homelessness-related
New Keys project evaluation	Graham Bowpitt	Include	Small pilot study, relevant intervention
Opportunity Nottingham	Graham Bowpitt	Exclude	Not really a housing intervention
CHARISMA reports	Louise Woodfine	Exclude	Housing improvement, so not relevant intervention
Housing and health evidence review	Louise Woodfine	Exclude	General overview
ACEs and homelessness technical document	Louise Woodfine	Exclude	References related to association, no intervention
ACEs in housing project brief	Louise Woodfine	Exclude	No data
Case for investing in prevention	Louise Woodfine	Exclude	General overview
Emerging Futures report on East Cheshire Transitional Recovery Housing	WWCW team	Exclude	Insufficient data on outcomes

Mares (2011)

Reviewer: Duncan Chambers

Date: 08/06/2017

Data Extraction

- Study ID
  - Study ID
    Mares (2011){#476}
- Publication type
  - Academic journal

- Study design
  - Other
    Non-randomised controlled trial
- Country
  - USA

- Setting
  - Details of setting
    Five cities in the USA (Chattanooga, Los Angeles, Martinez, New York and Portland)
- Participants
  - Details of study participants
    Chronically homeless people, defined as 'an unaccompanied homeless individual with a disabling condition who has either been continuously homeless for 1 year or more or has had at least four episodes of homelessness in the past 3 years'
- Sample
  - Sample size
    385 (281 intervention, 104 usual care)

- Aim
  - Study aim
    To compare service use and 2-year treatment outcomes between chronically homeless people receiving comprehensive housing and healthcare services and those receiving usual local care
- Intervention
  - Supported housing
    Collaborative Initiative on Chronic Homelessness (CICH). The key service components funded through CICH included: (1) comprehensive primary health, mental health, and substance abuse treatment services linked to housing; (2) replication of service, treatment and housing models shown previously to be effective (most notably modified versions of the Assertive Community Treatment model of intensive case management and the ‘‘Housing First’’ model of supported housing; and, (3) support for the development of inter-organizational partnerships to sustain the service
- Comparator
  - Treatment as usual

- Length/period of study
  - Duration and years covered
    2 year follow-up between May 2004 and December 2008
- Wellbeing dimensions assessed
  - Relationships
    Community adjustment and social support
  - Health (physical)
    Service use, health status
  - Health (mental)
    Service use, health status
  - Personal finance
    Income
- Housing outcomes
  - Housing outcomes assessed
    Number of days housed, housing satisfaction
- Findings
  - Main findings
    CICH clients had significantly higher levels of housing than control participants (68.6 vs. 45.2/90 days averaged over the 2 year follow-up P<.001). CICH clients were significantly more likely to report having a usual mental health/substance abuse treater (55% vs. 23%) or a primary case manager (26% vs. 9%) and to receive community case management visits (64% vs. 14%). They reported receiving more outpatient visits for medical (2.3 vs. 1.7), mental health (2.8 vs. 1.0), substance abuse treatment (6.4 vs. 3.6), and all healthcare services (11.6 vs. 6.1) than comparison subjects. Total quarterly healthcare costs were significantly

higher for CICH clients than comparison subjects ($4,544 vs. $3,326). CICH participants had slightly lower housing satisfaction scores (5.0 vs. 5.4). No significant differences were found between the groups on measures of substance use, community adjustment, or health status.

- Conclusions
  - Authors' conclusions
    Access to a well-funded, comprehensive array of permanent housing, intensive case management, and healthcare services is associated with improved housing outcomes, but not substance use, health status or community adjustment outcomes, among chronically homeless adults
- Mechanisms
  - Reported associations or causal links
    CICH -> participants control substance use to avoid eviction -> stable housing but some level of substance use and associated problems
- Limitations
  - Study limitations
    Participants not randomised; details of CICH programmes varied between sites (hence classed as supported housing rather than Housing First)

Appendix 5: Full-text exclusions

Reason	Number of papers
Not housing intervention	58
No control group	25
No wellbeing outcomes	21
Review	16
Not vulnerable population	8
Conference abstract or dissertation	6
Limited/No outcome data	7
Observational study	2
Protocol	2
Focus on fidelity scale	1
Total	**146**

Appendix 6: Notes and references linked to the Conceptual pathway (set out in Figure 4)

1. Henwood, B. F., Hsu, H.-T., Dent, D., Winetrobe, H., Carranza, A. and Wenzel, S. (2013) 'Transitioning from homelessness: A "fresh-start" event', *Journal of the Society for Social Work and Research,* 4(1), pp. 47-57. See also other references in section 5.7.
2. Padgett, D. K. (2007) 'There's no place like (a) home: ontological security among persons with serious mental illness in the United States', *Social Science & Medicine,* 64(9), pp. 1925-36. See also other references in section 5.7.
3. Woodhall-Melnik, J. R. and Dunn, J. R. (2016) 'A systematic review of outcomes associated with participation in Housing First programs', *Housing Studies,* 31(3), pp. 287-304. For supported housing, see Mares, A. S. and Rosenheck, R. A. (2011) 'A comparison of treatment outcomes among chronically homelessness adults receiving comprehensive housing and health care services versus usual local care', *Administration & Policy in Mental Health,* 38(6), pp. 459-75 and other references in section 8.4.
4. Mares, A. S. and Rosenheck, R. A. (2011) 'A comparison of treatment outcomes among chronically homelessness adults receiving comprehensive housing and health care services versus usual local care', *Administration & Policy in Mental Health,* 38(6), pp. 459-75.
5. Poremski, D., Stergiopoulos, V., Braithwaite, E., Distasio, J., Nisenbaum, R. and Latimer, E. (2016) 'Effects of Housing First on Employment and Income of Homeless Individuals: Results of a Randomized Trial', *Psychiatric Services,* 67(6), pp. 603-9. See also references in section 6.2.
6. Brown, M. M., Jason, L. A., Malone, D. K., Srebnik, D. and Sylla, L. (2016) 'Housing first as an effective model for community stabilization among vulnerable individuals with chronic and nonchronic homelessness histories', *Journal of Community Psychology,* 44(3), pp. 384-390. Stergiopoulos, V., Gozdzik, A., Misir, V., Skosireva, A., Sarang, A., Connelly, J., Whisler, A. and McKenzie, K. (2016) 'The effectiveness of a Housing First adaptation for ethnic minority groups: findings of a pragmatic randomized controlled trial', *BMC Public Health,* 16(1), pp. 1110.
7. Polvere, L., Macnaughton, E. and Piat, M. (2013) 'Participant perspectives on housing first and recovery: early findings from the At Home/Chez Soi project', *Psychiatric Rehabilitation Journal,* 36(2), pp. 110-2.
8. See UK Housing First evaluations in section 5.5.

9. Stergiopoulos, V., Gozdzik, A., O'Campo, P., Holtby, A. R., Jeyaratnam, J. and Tsemberis, S. (2014) 'Housing First: exploring participants' early support needs', *BMC Health Services Research,* 14, pp. 167. See also section 5.5 as above.
10. Supported housing: Gilmer, T. P., Stefancic, A., Katz, M. L., Sklar, M., Tsemberis, S. and Palinkas, L. A. (2014a) 'Fidelity to the housing first model and effectiveness of permanent supported housing programs in California', *Psychiatric Services,* 65(11), pp. 1311-7. Housing First: Alaazi, D. A., Masuda, J. R., Evans, J. and Distasio, J. (2015) 'Therapeutic landscapes of home: Exploring Indigenous peoples' experiences of a Housing First intervention in Winnipeg', *Social Science & Medicine,* 147, pp. 30-7.
11. Housing First: Macnaughton, E., Townley, G., Nelson, G., Caplan, R., Macleod, T., Polvere, L., Isaak, C., Kirst, M., McAll, C., Nolin, D., Patterson, M., Piat, M. and Goering, P. (2016) 'How does Housing First catalyze recovery?: Qualitative findings from a Canadian multi-site randomized controlled trial', *American Journal of Psychiatric Rehabilitation,* 19(2), pp. 136-159. Patterson, M. L., Rezansoff, S., Currie, L. and Somers, J. M. (2013b) 'Trajectories of recovery among homeless adults with mental illness who participated in a randomised controlled trial of Housing First: a longitudinal, narrative analysis', *BMJ Open,* 3(9), pp. e003442. Supported housing: Padgett, D. K., Smith, B. T., Choy-Brown, M., Tiderington, E. and Mercado, M. (2016) 'Trajectories of recovery among formerly homeless adults with serious mental illness', *Psychiatric Services,* 67(6), pp. 610-614.
12. Gilmer, T. P., Stefancic, A., Katz, M. L., Sklar, M., Tsemberis, S. and Palinkas, L. A. (2014a) 'Fidelity to the housing first model and effectiveness of permanent supported housing programs in California', *Psychiatric Services,* 65(11), pp. 1311-7.
13. See UK evaluations of Housing First included in section 5.5.
14. Adair, C. E., Kopp, B., Distasio, J., Hwang, S. W., Lavoie, J., Veldhuizen, S., Voronka, J., Kaufman, A. F., Somers, J. M., LeBlanc, S. R., Cote, S., Addorisio, S., Matte, D. and Goering, P. (2016) 'Housing Quality in a Randomized Controlled Trial of Housing First for Homeless Individuals with Mental Illness: Correlates and Associations with Outcomes', *Journal of Urban Health,* 93(4), pp. 682-97. Aubry, T., Goering, P., Veldhuizen, S., Adair, C. E., Bourque, J., Distasio, J., Latimer, E., Stergiopoulos, V., Somers, J., Streiner, D. L. and Tsemberis, S. (2016) 'A Multiple-City RCT of Housing First With Assertive Community Treatment for Homeless Canadians With Serious Mental Illness', *Psychiatric Services,* 67(3), pp. 275-81.
15. See references in chapters 5–10.
16. See especially Oxford House model (section 7.4). For Housing First: Yamin, S., Aubry, T., Volk, J., Jette, J., Bourque, J. and Crouse, S. (2014) 'Peer Supportive Housing for consumers of housing first who experience ongoing housing instability', *Canadian Journal of Community Mental Health,* 33(4), pp. 61-76.
17. See UK evaluations of Housing First included in section 5.5.
18. McGuire, J., Rosenheck, R. A. and Kasprow, W. J. (2011) 'Patient and program predictors of 12-month outcomes for homeless veterans following discharge from time-limited residential treatment', *Administration & Policy in Mental Health,* 38(3), pp. 142-54. See also other references in chapter 8.
19. Yanos, P. T., Felton, B. J., Tsemberis, S. and Frye, V. A. (2007) 'Exploring the role of housing type, neighborhood characteristics, and lifestyle factors in the community integration of formerly homeless persons diagnosed with mental illness', *Journal of Mental Health,* 16(6), pp. 703-717.
20. Stronger evidence for Housing First (chapter 5) and moderate evidence for some recovery housing interventions (chapter 7).
21. Moderate evidence for Housing First (chapter 5) and some recovery housing interventions (chapter 7).
22. Moderate or low strength evidence for recovery housing (chapter 7) and supported housing (chapter 8), also UK evaluations of Housing First (section 5.5).

23. Moderate evidence for Housing First (chapter 5) and recovery housing (chapter 7).
24. Moderate or low strength of evidence for recovery housing (chapter 7). Housing First: Poremski, D., Stergiopoulos, V., Braithwaite, E., Distasio, J., Nisenbaum, R. and Latimer, E. (2016) 'Effects of Housing First on Employment and Income of Homeless Individuals: Results of a Randomized Trial', *Psychiatric Services,* 67(6), pp. 603-9.
25. Moderate evidence for Housing First (chapter 5) and some recovery housing interventions (chapter 7).
26. Moderate or low strength of evidence for recovery housing (chapter 7). Moderate evidence of no effect for Housing First (chapter 5).