A systematic review of interventions to boost social relations through improvements in community infrastructure (places and spaces)

FINAL protocol – Version 3, 23rd June 2017

Review team: Anne-Marie Bagnall[1], Jane South[1], Salvatore Di Martino[1], Kris Southby[1], Gerlinde Pilkington[2], Ben Mitchell[3], Andy Pennington[4,] Rhiannon Corcoran[4]

1 Centre for Health Promotion Research, School of Health & Community Studies, Leeds Beckett University
2 Public Health Institute, Liverpool John Moore's University
3 The Retail Institute, Leeds Beckett University
4 Institute of Psychology Health and Society, Heseltine Institute for Public Policy & Practice, University of Liverpool

Contact:
Anne-Marie Bagnall
Centre for Health Promotion Research
School of Health and Community Studies
Leeds Beckett University
Calverley Street
Leeds
LS1 3HE
Email: a.bagnall@leedsbeckett.ac.uk

Contents

Background

This report was commissioned by the What Works Centre for Wellbeing (WWC-WB). The WWC-WB is part of a network of What Works Centres: an initiative that aims to improve the way the government and other organisations create, share and use high quality evidence for decision-making. The WWC-WB aims to understand what governments, businesses, communities and individuals can do to improve wellbeing. They seek to create a bridge between knowledge and action, with the aim of improving quality of life in the UK. This work forms part of the WWC-WB **Community Wellbeing Evidence Programme**, whose remit is to explore evidence on the factors that determine community wellbeing, including the impacts of interventions.

During extensive stakeholder engagement (in workshops, an on-line questionnaire, community sounding boards, and one-to-one interviews), the Community Wellbeing Evidence Programme identified priority, policy-related topics within which evidence reviews were to be undertaken. One of the priority topics identified was the role of boosting social relations between people in communities, as a key ingredient of both individual and community wellbeing. It was recognised that ways of boosting social relations could involve formal and informal meeting and "bumping" spaces and places, community-based structures and organisations, and community-based interventions (Community Wellbeing Evidence Programme, 2015).
A subsequent scoping review of 34 reviews on the topic of "boosting social relations" (Bagnall et al. 2017a) identified evidence gaps (that is, a number of primary studies which did not seem to have been combined in a systematic review) relating to the outcome of community wellbeing in the following topic areas:

- community infrastructure (places and spaces);
- interventions to reduce or prevent social isolation in adults younger than 60 years;
- community engagement and volunteering;
- social network analyses.

The WWW Communities Evidence Programme Consortium discussed these topics and chose "community infrastructure (places and spaces)" to be developed as a full systematic review, as it was felt to be something that can be addressed at a local or regional level and thus has potential to produce immediate practical impact. Also impacting on the decision, it was noted that Buonfino & Hilder (2006) identified "neighbouring and spaces for interaction" as a future research priority, while the Legatum report on wellbeing and policy (O'Donnell et al. 2014) highlights evidence of links between the physical environment and social relationships and the potential for policy action, with reference to a "magic formula" of having easy opportunities for social interaction but retaining the ability to choose when, who, and where we meet (Halpern 1995). Also in 2014, the All Party Parliamentary Group on Wellbeing economics identified building high wellbeing places as one of four policy priorities, including "ensuring that town centres are sociable and inclusive spaces which are accessible for all sections of the community" (APPG 2014).

Purpose of the systematic review, and place within the programme

This systematic review forms part of a series of three evidence synthesis projects which explore the relationship between interventions to boost social relations, and community wellbeing. It follows on from a *Stage 1* 'scoping' review of existing review-level evidence conducted to identify the strengths, weaknesses, and gaps in the current evidence base (Bagnall et al, 2017a). This more in-depth, ***stage two*** systematic review will locate, evaluate, and synthesise evidence from existing primary level studies on the impacts of interventions designed to boost social relations though improved

community infrastructure (places and spaces) on community wellbeing, and related concepts such as social capital. See Box 1 for further information on the stages of evidence synthesis for this project.

Box 1: Stages of evidence synthesis (Communities Evidence Programme)

Stage 1: Scoping review to identify the current state of review level evidence on the key community wellbeing topic areas identified during initial stakeholder and end user engagement exercises. The scoping reviews are designed to identify the strengths and weaknesses in existing knowledge and current gaps in the evidence base. Findings from the scoping review are then used as the basis for identifying priority areas for research during systematic reviews.

Stage 2: Systematic review of priority areas for research into the community wellbeing impacts of specific interventions, or gaps in the existing evidence on the impacts of interventions, identified during the scoping review. The systematic review will examine the evidence from primary studies of interventions.

Stage 3: Based on the findings of stages 1 and 2, identification of a 'roadmap' for future academic research and 'frontline' evaluation of interventions.

Aims of the review

The aim of this systematic review is to synthesise the available evidence, and describe the quality of that evidence, in relation to interventions that improve or create the community infrastructure that impacts on social relations and/ or community wellbeing. For this review, we are defining community infrastructure as the physical places and spaces where people can come together, formally or informally, to interact and participate in the social life of the community. We intend to produce a synthesis which is accessible and will inform practice and future research in the area.

Review questions

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

Review question 1: ***How effective are interventions designed to improve community infrastructure (places and spaces) in improving social relations and/ or community wellbeing?***

Sub-questions are:

- What interventions to improve community infrastructure have been evaluated with regard to social relations and/ or community wellbeing?
- In which settings have interventions to improve community infrastructure (places and spaces) been evaluated with regard to social relations and/ or community wellbeing?
    - Is there an association between setting and:
        - type of intervention,
        - population,
        - outcomes measured and
        - direction and size of effect?

- Are there differences in effectiveness across population groups, particularly those at risk of health inequalities? (for example, people from different socio-economic backgrounds, ethnicity, age or gender)?
- Are there differences in effectiveness across different types of interventions?
    - are there differences across interventions and initiatives that have been explicitly planned by agencies (e.g. play areas), and those that have developed informally (e.g. café as meeting place), sometimes called "third spaces"?
    - what is the evidence about the effectiveness of interventions within estate regeneration schemes, other neighbourhood or high street renewal schemes, and new housing developments?
- Are there differences in effectiveness across interventions that:
    - (i) aim to mix population groups (e.g. intergenerational connections; different ethnicities; community cohesion);
    - (ii) are open to a mix of population groups, although this is not an explicit aim;
    - (iii) are targeted towards specific population groups, such as those at risk of social exclusion and/ or health and wellbeing inequalities, or are intended to strengthen bonds within a population?

Review question 2: ***What factors (positive and negative) affect the implementation or effectiveness of the interventions****?*

Review question 3: ***What are people's subjective experiences of interventions designed to improve infrastructure (in relation to social relations and community wellbeing)?***

- Do these differ across settings, intervention types, population groups?
- How involved are local communities in design, delivery and evaluation of interventions, and does this influence effectiveness?

Definitions

The scope of this review includes a number of multifaceted terms that can be understood in different ways; 'community', 'community wellbeing', 'social relations', and 'community infrastructure'.

Community

The notion of 'community' is both a widely used term and also a contested concept that is subject to interpretation in practice and through theory.
Our definition of 'community' is that used by the National Institute of Health and Care Excellence (NICE, 2016):

> *"a group of people who have common characteristics or interests. Communities can be defined by: geographical location, race, ethnicity, age, occupation, a shared interest or affinity (such as religion and faith) or other common bonds, such as health need or disadvantage."*

This definition recognises the multifaceted nature of community. Given our broader interest in identifying 'what works?' for spaces and places, we are focusing on place-based community infrastructures, although this may serve to include both communities defined by geography and communities defined by identity or interest.

Community wellbeing

'Wellbeing' is an increasingly pertinent measure of how successfully individuals, communities, and nations are performing. Whilst there are many well-known and widely used measures and scales of wellbeing at an individual level, at a community level wellbeing is less well defined.
'Community Wellbeing' is a broad and variegated concept (Lee & Kim, 2015). Some definitions of community wellbeing focus on the functional aspects of an environment; for example, Chanan (2002) defines community wellbeing as how well a locality is functioning, how well it is governed, how well services are operating, and how safe and pleasant it feels to live there. A project in Victoria, Australia defines community wellbeing as "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 & Brasher 2008).
Within the What Works for Wellbeing Centre's Communities Evidence Consortium, 'community wellbeing' is understood as being something additional and distinct from individual wellbeing, as it concerns relational aspects between groups of people, such as social networks, trust and reciprocity, power and control (Prilleltensky 2012). In the collaborative development phase of the WWW Communities Evidence Programme, the preferred definition of community wellbeing chosen by survey respondents was:

> *"about strong networks of relationships and support between people in a community, both in close relationships and friendships, and between neighbours and acquaintances" (Communities Evidence Programme, 2015)*

Drawing on a conceptual review of the literature (Atkinson et al. 2017), the Communities Evidence Programme have chosen this this broad, working definition to guide our thinking:

> *'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]

This is a very general and broad working definition which may cover a variety of measures and concepts defined in different ways across different academic disciplines or governmental departments. As the term 'community wellbeing' may not be widely used we will include studies of similar concepts such as 'social capital' and 'social cohesion', 'social inclusion', 'community resilience' (Elliot et al. 2013), as we did for the scoping review of reviews (Bagnall et al. 2017a).
In terms of measuring community wellbeing, there may be many proxy indicators used to describe it, ranging from:

- whole area indicators (some based on population data, such as certain aspects of health, and some not, such as access to green space), to
- instruments (usually based on local sample survey data) that seek to measure aspects of social capital (such as trust or levels of crime), to
- aggregate scores of individual wellbeing across a geographic area (such as the ONS ANS survey indicators of self-reported wellbeing).

A rapid review of indicators, frameworks and measures of community wellbeing (and proxies for community wellbeing) used by UK governmental and non-governmental agencies in the last 5 years found forty-three measures or indicators of community wellbeing that are currently or recently in use in the UK (Bagnall et al., 2017b). These include indicator frameworks or sets favoured by governmental bodies and conceptual frameworks and validated measures/scales more commonly employed by academic institutions.

Social relations

Social relations are recognised by scientific literature and government practice as an important determinant of both individual and community wellbeing. The Office of National Statistics, for

example, has included 'social relations' among the ten key domains of national wellbeing on the basis that:

> "*Good social relationships and connections with people around us are vitally important to individual well-being. This is important to national well-being because the strength of these relationships helps generate social values such as trust in others and social cooperation between people and institutions within our communities*" (Evans, 2015, p. 10-11).

The concept of 'social relations' underpins many psychological, sociological, and anthropological theories such as social capital, sense of community, community of practice, community of interest and, more generally speaking, social relations is a key concept in human and social science. It is an umbrella term that covers a wide variety of interactions, interconnections, and exchanges between human beings and the physical and social environment. Therefore, it is not easy to cover its complexity through a one-size-fits-all definition (see Reis, Collins, & Berscheid, 2000).
The enhancement of social relations is part of the promotion of social capital (Putnam, 2000), which is necessary to improve/increase individual and community wellbeing (Sixsmith & Boneham, 2007). The Department of Economic and Social Affairs of the United Nations Secretariat (Hemmati, 2007) has identified 6 stages of social integration, which are formulated as stages of social relations. (see Figure 1 and Appendix 1). This is not the only conceptual model of social relations, but it serves to illustrate the dynamic and complex interactions that can result in positive, negative and mixed outcomes.

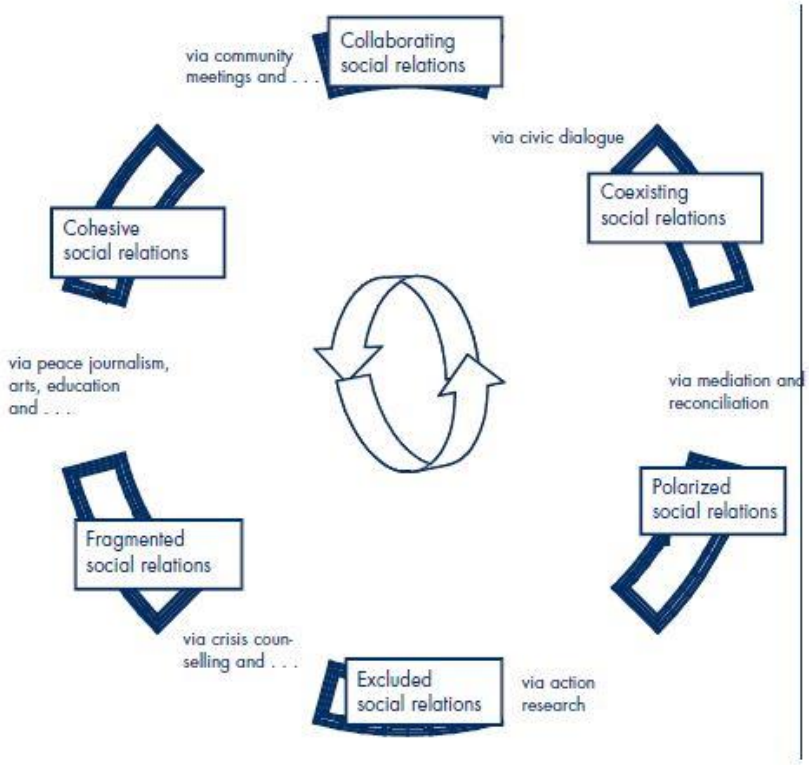

Figure 1 Stages of Social Relations. Hemmati, 2007, p. 5.

In Figure 1, Fragmentation, Exclusion, and Polarization are presented as negative whereas Coexistence, Collaboration, and Cohesion are deemed positive. For each pair of social relations, strategies for either transformation or advancement are suggested (Appendix 1). These include the following nested stages: a) Building relationships of trust, b) Gaining understanding of the situation and accepting responsibility for the change, c) Facilitating transformation, d) Grounding and support

to ensure institutional strength, e) Review contents and process, f) Learning lessons towards improved future strategy and practice, g) Appropriate systems and support, and h) Building capacity for and enhancement of active or servant leadership (Spies, 2005)

The What Works: Wellbeing Communities Evidence Consortium has produced a working Theory of Change (South et al. 2017), in which social relations are proposed to have a mechanistic and cyclical relationship with community wellbeing. It is proposed that enhanced social networks will yield improved community conditions and individual benefits, eventually leading to increased community (and individual) wellbeing (Figure 2).

Figure 2 Theory of change of what works to increase community wellbeing (South et al. 2017 (In Press))

Community infrastructure (places and spaces)

The environments in which people live are thought to affect individual and community wellbeing (Das, 2008; Kearney, 2006) by providing opportunities for individuals to interact and for social relations to form (Jeffres, Bracken, Jian, & Casey, 2009; Sirgy, Gao, & Young, 2008). Improving social relations for community wellbeing means promoting those conditions that bring people together, enable them to participate in community life and enable them to feel part of a network of shared meaning. In this light, it has been recommended (Diener & Seligman, 2004) that one aim of governmental policy should be the creation and promotion of opportunities for socializing such as 'bumping spaces', that is, places designed for people to meet up in informal settings (Communities Evidence Programme 2015; O'Donnell et al. 2014) and 'third spaces' that is "*places that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work*" (Oldenburg, 1999, p. 16). Jeffres et al (2009) identify eighteen types of third space ranging from coffee shops and bars, to churches and libraries, to shops and markets. They group these third spaces into four overlapping categories of 'Eat, drink, talk', organised activity, outside venues, and commercial venues.

These "bumping" or "third" spaces also include public or shared areas of housing, parks, and other public areas, such play spaces for families and children of different ages.

Cresswell (2004) defines place as "*space which people have made meaningful*" (p.7). Cresswell also refers to Tuan (1977): "*What begins as undifferentiated space became place as we get to know it better and endow it with value….these ideas 'space' and 'place' require each other for definition. From the security and stability of place we are aware of the openness, freedom, and threat of space, and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place.*" If we work with these definitions of place and space, the 'bumping spaces' and 'third spaces' referred to above should be referred to as 'bumping places' and 'third places'.

Missing from this definition are some of those spaces or places that may be considered to be part of the public sector infrastructure. Pothukuchi (2005) lists twelve community resources that contribute to community infrastructure for healthy communities, many of which might interact as in a 'third place'. These include town planning, street design, transport, public health organisations, subsidised housing sites, schools, and bus routes. This broad notion of places also resonates with the concept of community assets (or health assets in communities) which can cover informal social networks and neighbourly relationships through to formal structures and spaces, community-based organisations, local public services and buildings (Foot & Hopkins, 2010).

In contrast with the concept of community places and spaces designed to facilitate social relations, the anthropologist Marc Augé (1995), has proposed the term 'non-places' to indicate all those currently proliferating spaces that '*cannot be defined as relational, historical, and concerned with identity*' (p.77). In Augé's view, motorways, stations, airports, and shopping malls are all examples of spaces that are not designed to bring people together to socialize and take part in the community life, but only as sites for transiting consumers. However, interventions can be set up to create opportunities for sociability in non-places, while still maintaining their service/business-orientated nature. Holding community events and activities within the premises of a shopping mall or transforming a hotel restaurant into a traditional home-like dining room where customers sit all at the same table, are only some examples of strategies to turn 'non-place' into 'place' (see Aubert-Gamet & Cova, 1999).

For the purposes of our review, we are defining community infrastructure as:

- Public places and "bumping" places designed for people to meet e.g. streets, squares, parks, play areas, village halls, community centres;
- "Third" places where people meet informally or are used as meeting places in addition to their primary role e.g. cafes, pubs, libraries, shared areas in housing developments, schools, churches;
- Services that can improve access to places to meet e.g. town planning, urban design, landscape architecture and public art, transport, public health organisations, subsidised housing sites, bus routes.

We will focus on interventions operating at the neighbourhood level rather than city or national level, although the focus of the intervention may not be place-based.

We are not including "virtual" spaces such as social media as, although these are important and there is a growing evidence base, we feel that including both real and virtual places (and interactions between the two) in one review would make it too complex and potentially obscure important findings.

Methods

This systematic review will use standard systematic review methodology, as described in the WWC-WB Methods Guide (Snape et al., 2017), and will be reported following PRISMA and PRISMA-Equity guidelines (Moher et al. 2009; Welch et al. 2013).

Identification of evidence

The search strategy will be developed by the review team in collaboration with highly experienced information specialists. The aim of the search is to identify all relevant evidence on interventions to community infrastructure: places and spaces and their effect on social relations and community wellbeing. The concepts that underpin these dimensions are not always clear and there is overlap between terminologies, therefore we will search for related concepts and synonyms.
As a result of initial scoping searches, we will search the following databases using the search strategy outlined in Appendix 2:
PsycInfo, MEDLINE, CINAHL, Social Policy and Practice (covers Social Care Online and Idox), Social Sciences Citation Index, Academic Search Complete, LeisureTourism, Hospitality and Tourism Complete, Avery Index, GreenFiles and Urban Studies Abstracts. We may also search systematic review databases (i.e. Cochrane database of systematic reviews, DARE, Campbell Library, DoPHER (EPPI-Centre), Joanne Briggs Institute, Epistemonikos), ASSIA and Sociological Abstracts.
We will also search for 'grey' literature through Opensigle, topic experts (i.e. review advisors, and contacts through the What Works Centre for Wellbeing) and relevant websites (see Appendix 3).
A **call for evidence** will be issued by the WWC-WB, shared on social media and distributed to a mailing list of over 1200 academics and practitioners who expressed an interest in evidence on community wellbeing during the Voice of the User stakeholder engagement phase of the Community Wellbeing Evidence Programme.

Reference lists of key systematic reviews and included studies will be scanned, and citation searching will be carried out for included articles where possible.

An audit table of the search processes will be 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 searches will be downloaded into Endnote reference management software.

Study selection

Results of the searches of electronic databases will be de-duplicated and uploaded to EPPI-reviewer 4 systematic review management software, which will be used to store information and manage each stage of the review process (Thomas, Brunton & Graziosi 2010).
Studies will be selected for inclusion through two stages, using EPPI-Reviewer review management software. First, a random 20% of all titles and abstracts will be double-screened by all reviewers, followed by a 'calibration' exercise to ascertain levels of agreement. Once agreement is reached (80% agreement on include/ exclude), the remaining titles and abstracts will be screened by a single reviewer. Any queries will be resolved by discussion. Full-text copies of potentially relevant studies will be screened for inclusion using the criteria outlined below. Disagreements will be resolved by discussion, with a third reviewer being consulted where necessary. The results of the abstract screening will be recorded in EPPI-Reviewer, while results of the full paper screening will be recorded in EPPI-Reviewer and presented in an Appendix to the review, including the reason for excluding any paper. The study selection process will be presented in a flow chart in the review.

Inclusion and exclusion criteria

Population	We will include literature relating to community infrastructure: places and spaces for any community. We will focus on evidence for adults (loosely defined as aged between 16 and 65, but will accept other definitions as presented in studies). If included studies also present evidence relating to

	other age groups, we will include this where possible, particularly if there is any data on intergenerational relations. We will exclude studies that include **only** older adults (as defined by the study authors) or **only** children (as defined by study authors), as these fall within the remit of two other What Works Centres (the Centre for Ageing Better and the Early Intervention Foundation). We will include interventions aimed at families, such as children's play areas. We will include studies which have been carried out in the UK and other Organisation for Economic Co-operation and Development (OECD) countries. Research in other OECD is likely to have less relevance to the UK context and so we will consider the applicability of the international literature to the UK context in analysis, and highlight any limitations on applicability of individual studies. A judgement of the likely relevance to the UK will be made.
Intervention	We will include any interventions (formal or informal) which were designed to improve, or make better or alternative use of, community infrastructure: physical places and spaces (for example, general urban redesign; interventions such as lighting and benches in open public spaces; children's play places; or funding to host community activities in places such as libraries or faith settings). We are focusing on interventions that apply at community or neighbourhood level (e.g. a town market), rather than city or national level (e.g. Leeds art gallery). Studies will be excluded if they are not related to a specified intervention, or if they examine a virtual (not physical) space.
Comparators	We will include quantitative studies which compare different interventions, including those using before and after design and comparing new versus current practice. Qualitative studies without a comparator will be included.
Outcomes	We will adopt a broad perspective on the outcomes to be included in the review and will include studies which report any outcome relating to social relations, community wellbeing and related concepts such as social capital and social trust. This includes quantitative (measured), and qualitative (views and perceived) outcomes. While our primary focus is on outcomes at a community level, we will also include individual level health and wellbeing outcomes, which can be linked to community wellbeing (see Theory of Change, South et al 2017). As many of the desired outcomes would only be evident in the long term, we will also look for proxy measures along proposed pathways to change.
Study design	We will include quantitative and mixed methods studies which use experimental designs, and also process evaluations and qualitative studies that relate to the intervention specified above. We will exclude articles which provide only descriptive information or commentary.
Other criteria	We will include literature published or produced since 1997 and which is published in English. If we identify any key publications prior to this date (i.e. which are extensively referenced by included studies) we will consider these for inclusion.

Data extraction

Data from each included study will be extracted into pre-designed and piloted forms on EPPI-Reviewer 4 systematic review management software (Thomas, Brunton & Graziosi 2010). Forms will be completed by one reviewer and checked for accuracy by another. Periodically throughout the process of data extraction, a random selection will be considered independently by 2 people (that is, double assessed) for at least 20% of the studies. Data to be extracted include: study aims, study design, setting/country, intervention, comparator, population, outcomes measured and main findings in relation to the review questions.

We plan to use the Context and Implementation of Complex Interventions (CICI) checklist (Pfadenhauer et al. 2016, page 24) to extract and assess information (where reported) in the following domains of implementation strategy, context and implementation, to assist with answering the review question on process (What factors (positive and negative) affect the implementation or effectiveness of the interventions?), (and see Appendix 4):

- Implementation theory
- Setting
- Geographical
- Epidemiological
- Socioeconomic
- Sociocultural
- Political
- Legal
- Ethical
- Provider
- Organisation & Structure
- Funding
- Policy

Owing to logistical and time constraints, depending on the number of relevant studies located, it may not be possible to contact study authors for any unclear, missing or additional data.

Validity assessment

We will conduct validity assessment of all studies using the appropriate checklist (Appendix 5), following the recommendations of the What Works: Wellbeing methods guide (Snape et al., 2017). Unpublished data from grey literature will be assessed using the same criteria as is used for published data

Each full paper will be assessed by one reviewer and checked for accuracy by another. Periodically, a random selection will be considered independently by 2 people with at least 20% of the studies being double assessed. Any differences in validity grading will be resolved by discussion or recourse to a third reviewer. Validity assessment data will be extracted and recorded using EPPI-Reviewer review management software.

In this review we propose to be inclusive and use studies that are of 'low quality', explicitly describing the implications of including them.

We will examine specific features of the body of evidence, namely type of evidence, validity of evidence, consistency of findings, and consistency between unanswered research questions.

Data synthesis

Evidence synthesis will use a range of approaches depending on the design of the included studies, including narrative synthesis (Popay et al. 2006), meta-analysis for quantitative studies (Higgins et al. 2008; CRD 2009) if appropriate, and meta-ethnographic approaches for qualitative studies (Noblit and Hare 1988). A mixed method systematic review design similar to that used by the Evidence for Policy and Practice Information and co-ordinating (EPPI) Centre (Thomas and Harden, 2008) will be used to combine data from different study designs. Evidence will be initially synthesised by study type into two streams: quantitative and qualitative (for studies that use mixed methods, qualitative and quantitative data will be extracted and treated separately in the relevant streams).
The narrative synthesis will form the overall reporting framework for the review findings, which will be grouped by review question, setting and by intervention, population or outcome (decisions on this will be data driven with reference to the review advisory group), and will include:

- Thematic analysis of data based on the review questions.
- Exploration of relationships within and between studies.
- Differential impacts in relation to (e.g.) gender, socioeconomic status, ethnicity, or disability status will be considered.
- The strength of evidence will be identified based on study design, and on the results of the critical appraisal (for each type of design).
- Contradictions in findings will be examined.

Preliminary searches suggest that statistical meta-analysis may not be appropriate due to clinical heterogeneity of study designs, outcomes and interventions, but it may still be possible to display quantitative results in Forest plots, without pooling data. If statistical meta-analysis were possible, studies would be combined using a random effects model to give relative risks with 95% CIs for binary outcomes and weighted or standardised mean differences with 95% CIs for continuous outcomes. Statistical heterogeneity would be examined using the chi-square and I-square statistics, with a chi-square p-value of >0.1 or a I-square value of >50% indicating statistical heterogeneity, in which case a random effects model would be used to combine data.

Thematic synthesis using QSR NVivo software will be used to combine evidence from qualitative studies (Thomas and Harden 2008; Oliver et al 2005; Harden et al 2004). This will take place by two reviewers working independently in three stages which may overlap: free line-by-line coding of the findings of included studies; construction of 'descriptive' themes; and the development of 'analytical' themes (Thomas and Harden 2008). Coded text will be checked for consistency of interpretation between studies and between reviewers. Reviewers will collectively identify similarities and differences between the codes to start to group them into descriptive themes. Analytical themes will then be developed by two reviewers independently applying the review objectives to the descriptive theme (Thomas and Harden 2008).

We will attempt to produce a conceptual pathway of how community wellbeing is related to community infrastructure based on the evidence retrieved.
We will also generate an evidence map, which tabulates the identified evidence in terms of which aspects of community wellbeing and which aspects of community infrastructure (e.g. setting, intervention, population) they address.

Transferability assessment

Transferability of review findings is a key challenge in this field as interventions that are the subject of research studies do not always map well to those implemented in community practice (Bagnall et al., 2016 p.98; O'Mara-Eves et al. 2013; Savage et al. 2010; South et al. 2010 p.128). Changes in policies and programme funding may also affect the relevance of review findings, for example if programmes have been discontinued (Bagnall et al, 2016, South et al. 2016). After data synthesis, we will examine interventions by group and setting and assess how transferable the findings are to a current UK context. This includes an assessment of relevant international evidence and older evidence from the UK. We will seek guidance from the review advisors in relation to the transferability of results and how this can be assessed. We plan to develop, as an additional review output, a tool for assessing transferability. This will be in the form of a checklist with criteria relating to population(s); context; country of origin; characteristics of interventions; stage of intervention development i.e. if feasibility or replicability assessed; commonalities; costs. Using transparent criteria will help the end user of evidence to select relevant interventions for the context they are working in.

Recommendations

We will adopt the formal rating methodology recommended by the What Works Centre: Wellbeing Methods Guide. This will provide a judgement on the overall quality of the evidence for each individual finding in the review, adopting the GRADE rating for quantitative evidence and the CERQual approaches for qualitative evidence. Using the GRADE approach, we will suggest recommendations for practice based on the review findings.
We will keep an evidence gap register and make recommendations about how gaps can be filled and where further research is required.
In the report of the systematic review we will indicate which dimensions of interventions to improve community infrastructure: places and spaces and their effect on social relations and community wellbeing are well covered by the evidence and where there are gaps.
We will also make recommendations for policy and research.

Outputs from systematic review

This systematic review will produce:

- Registration with PROSPERO, an international register of systematic reviews.
- A systematic review
- A conceptual pathway of how community wellbeing is related to community infrastructure, and can be boosted by interventions to improve community infrastructure, based on the evidence retrieved from the reviews
- An accessible summary document
- Journal publications and conference presentations

1. Timetable

Activity	March	April	May	June	July	August	September	October
Protocol development								
Protocol sign-off								
Literature searching								
Study selection, data extraction, and quality assessment								
Analysis and report writing								
Draft report								
Final report								

Activity	**Duration**	**Start date**	**End date**
Protocol development	2 weeks	w/c 13th March 2017	26th April 2017
Protocol sign-off	6 weeks	w/c 1st May 2017	16th June 2017
Literature searching	10 weeks	w/c 15th May 2017	31st July 2017

Study selection, data extraction, and quality assessment	8 weeks	w/c 26th June 2017	31st August 2017
Analysis and report writing	8 weeks	w/c 14th August 2017	30th September 2017
Draft report			w/c 25th September 2017
Final report			w/c 23rd October 2017

Review advisors

Nicola Bacon, Social Life
Professor Sarah Atkinson, University of Durham
Meena Bharadwa, Locality
Professor Antony Morgan, Glasgow Caledonian University
Annie Quick, New Economics Foundation
Russell Jones, Glasgow Centre for Population Health

The review advisors will be involved at the following stages/undertake the following tasks:

- Invited to discuss and comment on the protocol
    - Discuss and clarify the protocol, particularly in relation to inclusion criteria
    - Comment on the relevance of the systematic review to current policy, placing the academic exercise into the bigger picture
- Input at the sifting stage to comment on included evidence
    - Inform the review team of studies, particularly from grey literature, that have been missed and could be included
    - Know whether the traditional published literature is missing important content around current issues
    - Discuss any decision rules for treatment of evidence that formally meets the inclusion criteria but lacks policy relevance

References

Atkinson S, Bagnall A, Corcoran R, South J. (2017) Conceptual review of community wellbeing. University of Durham/ What Works Wellbeing Centre (In Press)

Aubert-Gamet V, and Cova B (1999). Servicescapes: From modern non-places to postmodern common places. Journal of Business Research, 44(1), pp.37-45.

Augé M (1995). Non-places. Introduction to an Anthropology of Supermodernity (J Howe, Trans.). London: Verso.

Bagnall A, South J, Trigwell J, Kinsella K, White J, and Harden A (2016). Community engagement – approaches to improve health: map of the literature on current and emerging community engagement policy and practice in the UK. Centre for Health Promotion Research, Leeds Beckett University / Institute for Health and Human Development, University of East London.

Bagnall A, South J, Di Martino S, Mitchell B, Pilkington G, and Newton R (2017a). Systematic scoping review of reviews of the evidence for "what works to boost social relations" and its relationship to community wellbeing. Leeds Beckett University/ What Works Wellbeing Centre (In Press).

Bagnall A, South J, Mitchell B, Pilkington G, Newton R, and Di Martino S (2017b). Systematic scoping review of indicators of community wellbeing in the UK. What Works Wellbeing Centre (In Press).

Berry C (2014). Wellbeing in four policy areas: Report by the All-Party Parliamentary Group on Wellbeing Economics. London: New Economics Foundation.

Buonfino A, and Hilder P (2006). Neighbouring in contemporary Britain: A think-piece for the Joseph Rowntree Foundation Housing and Neighbourhoods Committee. York: Joseph Rowntree Foundation.

Centre for Reviews and Dissemination. (2009). Undertaking systematic reviews of research on effectiveness. CRD's guidance for those carrying out or commissioning reviews. (3rd Edition). York: Centre for Reviews and Dissemination.

Chanan G (2002). Community development foundation measure of community: A study for the active community unit and research. London: Development and Statistics Unit of the Home Office.

Communities Evidence Programme (2015). Voice of the User report (https://whatworkswellbeing.files.wordpress.com/2016/02/voice-of-the-user-report.pdf).

Cresswell T (2004). Place: A Short Introduction. Malden, USA: Blackwell Publishing.

Das D. (2008). Urban quality of life: A case study of Guwahati. Social Indicators Research, 88(2), pp.297-310.

Diener E, and Seligman, M E (2004). Beyond money toward an economy of well-being. Psychological science in the public interest, **5**(1), pp.1-31.

Dixon-Woods M, Booth A, and Sutton A J (2007). Synthesizing qualitative research: a review of published reports. Qualitative Research, 7(3), pp.375-422.

Elliott E, Byrne E, Shirani F, Gong Y, Henwood K, Morgan H, Sheperd M, Palmer S, and Williams G (2013). Connected Communities: A review of theories, concepts and interventions relating to community-level strengths and their impact on health and wellbeing. London: Connected Communities.

Evans J (2015). Measuring National Well-being: Life in the UK, 2015. Office for National Statistics.

Foot J, and Hopkins T A (2010). A glass half full: How an asset approach can improve community health and well-being. London: Improvement and Development Agency (IDeA).

Friedli L (2009). Mental health, resilience and inequalities. Denmark: World Health Organization Europe.

Halpern D (1995). Mental Health and the Built Environment: More Than Bricks and Mortar? London: Taylor & Francis.

Harden A, Garcia J, Oliver S, Rees R, Shepherd J, Brunton G, and Oakley A (2004). Applying systematic review methods to studies of people's views: an example from public health research. Journal of Epidemiology and Community Health, 58(9), pp.795-800.

Hemmati M (2007). Participatory dialogue: Towards a stable, safe and just society for all, United Nations Publications.

Higgins J, and Green S. (2008). Cochrane Handbook for Systematic Review of Interventions version 5.0.1: The Cochrane Collaboration.

Kearney A R (2006). Residential development patterns and neighborhood satisfaction: Impacts of density and nearby nature. Environment and Behavior, 38(1), pp.112-139.

Jeffres L W, Bracken C C, Jian G, and Casey M F (2009). The impact of third places on community quality of life. Applied Research in Quality of Life, 4(4), pp.333-335.

Lee S J, and Kim Y (2015). Searching for the meaning of community well-being. In S J Lee, Y Kim, and R Phillips (Eds.), Community Well-Being and Community Development (pp. 9-23). New York: Springer.

Moher D, Liberati A, Tetzlaff J, Altman D G, and The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Medicine, 6(7), pp.1-6.

Noblit G, and Hare R (1988). Meta-ethnography: synthesising qualitative studies. Newbury Park, CA: Sage.

O'Donnell G, Deaton A, Durand M, Halpern D, and Layard R (2014). Wellbeing and Policy. Legatum Limited: The Legatum Institute.

Oldenburg R (1999). The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of a Community. Cambridge, MA: Da Capo Press.

Oliver S, Harden A, Rees R, Shepherd J, Brunton G, Garcia J, and Oakley A (2005). An Emerging Framework for Including Different Types of Evidence in Systematic Reviews for Public Policy. Evaluation, 11(4), pp.428-46.

O'Mara-Eves A, Brunton G, McDaid D, Oliver S, Kavanagh J, Jamal F, … and Thomas J (2013). Community engagement to reduce inequalities in health: a systematic review, meta-analysis and economic analysis. Public Health Research, 1(4), pp.1-527.

Pfadenhauer L, Rohwer A, Burns J, Booth A, Lysdahl K B, Hofmann B, … and Rehfuess E (2016). Guidance for the Assessment of Context and Implementation in Health Technology Assessments (HTA) and Systematic Reviews of Complex Interventions: The Context and Implementation of Complex Interventions (CICI) Framework [Online] (http://www.integrate-hta.eu/downloads/)

Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, … and Duffy, S (2006). Guidance on the Conduct of Narrative Synthesis in Systematic Reviews. A product from the ESRC Methods Programme. Lancaster: Institute for Health Research, Lancaster University.

Pothukuchi (2005) Building community infrastructure for healthy communities: Evaluating action research components of an urban health research programme, Planning Practice & Research, 20:2, 127-146, DOI: 10.1080/02697450500414660

Prilleltensky I (2012). Wellness as fairness. American journal of community psychology, 49(1-2), pp.1-21

Putnam R D (2000). Bowling Alone: The Collapse and Revival of American Community. New York: Simon & Schuster.

Reis H T, Collins W A, and Berscheid E (2000). The relationship context of human behavior and development. Psychological bulletin, 126(6), pp.844-872.

Savage V, Cordes C, Keenaghan-Clark L, and O'Sullivan C (2010). Public services and civil society working together: Promising ideas for effective local partnerships between state and citizen. The Young Foundation.

Sirgy M J, Gao T, and Young R F (2008). How Does Residents' Satisfaction with Community Services Influence Quality of Life (QOL) Outcomes? Applied Research in Quality of Life, 3(2), pp.81-105.

Sixsmith J, and Boneham M (2007). Health, Well-being and Social Capital. In J Haworth and G Hart (Eds.), Well-Being: Individual, Community and Social Perspectives (pp. 79–96). New York: Palgrave Macmillan.

Snape D, Meads C, Bagnall A, Tregaskis O, and Mansfield L (2016). What Works Wellbeing: A guide to our evidence review methods. What Works Centre for Wellbeing.

South J, Abdallah S, Bagnall A, Curtis S, Newton R, Pennington A, Corcoran R (2017). Building community wellbeing – an initial theory of change, Liverpool: University of Liverpool. https://whatworkswellbeing.files.wordpress.com/2017/05/theory-of-change-community-wellbeing-may-2017-what-works-centre-wellbeing.pdf

South J, Meah A, Bagnall A, Kinsella K, Branney P, White J, and Gamsu M (2010). People in Public Health - a study of approaches to develop and support people in public health roles. Report for the National Institute for Health Research Service Delivery and Organisation programme, Leeds Metropolitan University.

South J, White J, Trigwell J, Kinsella K, Harden A, and Bagnall, A M. (2016) An inter-sectoral map of UK policy promoting community engagement and empowerment in health. European Journal of Public Health, 26 (Suppl 1) (http://eurpub.oxfordjournals.org/content/26/suppl_1/ckw166.065.full).

Spies C. (2005). Guyana: a case study prepared by the social cohesion programme (UNDP Guyana). Presentation delivered at the United Nations Expert Group Meeting entitled “Dialogue in the Social Integration Process: Building Peaceful.

Thomas J, Brunton J, and Graziosi S (2010). EPPI-Reviewer 4: software for research synthesis, EPPI-Centre Software, London: Social Science Research Unit, UCL Institute of Education.

Thomas J, Harden A (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology, 8(45).

Tuan Y F (1977). Space and Place: The Perspective of Experience. Minneapolis: University of Minnesota Press.

Welch V, Petticrew M, Tugwell P, Moher D, O'Neill J, Waters E, and White H (2013). PRISMA-Equity 2012 Extension: Reporting Guidelines for Systematic Reviews with a Focus on Health Equity. Revista Panamericana de Salud Pública, 34(1), pp.60-67.

Wiseman J, and Brasher K (2008). Community wellbeing in an unwell world: Trends, challenges, and possibilities. Journal of Public Health Policy, 29(3), pp.353-366.

Appendix 1 Stages of social relations (Hemmati 2007, p6)

Stage description	Methods for transformation
Fragmentation refers to the experience of having few or no connections to a system of support. This can be life-threatening. It can produce distress or trauma that limits the ability to communicate at the psychological level, inhibiting the ability to act effectively in the best interests of self or others. Fragmentation occurs in crisis situations when there is a total social breakdown, that is to say, in war, epidemics, natural disasters, rapid social change, major dislocation, and habituation to "normalized violence"	Fragmented relations can be transformed when stakeholders have the need and intention to heal distress using such dialogue procedures as peer or crisis counselling (psychological domain) within a context where there is a commitment to stop fighting and address survival needs (by service providers, police or peacekeepers, etc.).
Exclusion refers to a lack of capacity or opportunity to meet daily subsistence and livelihood needs owing to isolation, oppression or neglect and is disproportionately experienced by the poor, minorities, displaced populations and workers whose skills have become obsolete. Exclusion occurs where wealth and power are unevenly shared (and disparities are wide).	Excluded relations can be transformed when marginalized groups and those in power to prevent/ end marginalization have the need, intention and opportunity to build sustainable livelihood capacities using such dialogue procedures as action research (in the socio-economic domain). Sometimes, marginalized groups can create the opportunities themselves but those with power need to remove obstacles and/or create opportunities for inclusion. Opportunities for dialogue need to be an integral part of an overall strategy towards justice and social justice.
Polarization refers to the experience of taking sides in a conflict leading to the extreme relations of "us-them." Polarization can occur in any type of conflict but is most damaging in protracted intergroup hostilities that coalesce around religion or ethnicity. Trust and respect decline as stereotyping and strife take over.	Polarized social relations can be transformed when stakeholders have the need, intention and opportunity to resolve differences by peaceful means using such dialogue procedures as mediation or reconciliation (socio-political domain). When polarization is linked to protracted discrimination against specific groups, processes that create justice and social justice will often be important components, or preconditions, in a social integration process.
Coexistence refers to the experience of mutual recognition among people. Coexistence occurs in a culture of tolerance for diversity.[a]	Coexisting relationships can be advanced when people have the need, intention and safe space to express diverse viewpoints and seek consensus using civic or democratic dialogue (socio-political domain).
Collaboration refers to the experience of collective responsibility for socio-economic well-being. Collaboration tends to occur in societies that recognize and implement socio-economic justice.	Collaborative relations can be advanced when stakeholders have the need, intention and opportunity to participate in the design of socio-economic development that affects their lives, using dialogue procedures such as community meetings and focus groups (socio-economic domain).
Cohesion refers to the experience of social unity within diversity with social justice. Cohesion occurs when stakeholders recognize their common humanity and shared destiny.	Cohesion can be advanced when stakeholders have an opportunity and a safe space within which to explore shared meaning and values as they create a peace culture, using dialogue procedures such as theatre and media, including peace education (psycho-cultural domain).

[a] This does not necessarily imply that there are many bridges across social groups and sectors (see also Porter, 2005).

Appendix 2 Search strategy

a. Social relations

(Soci* OR community OR neighbour* OR public OR cultural) AND (relation* OR cohesion OR capital OR inclusion OR inclusive OR interaction* OR network* OR connect* OR interconnect* OR bond* OR tie* OR support OR integration OR participation OR engag* OR exclu* OR isolat* OR marginali* OR disengag* OR fragment* OR disconnect* OR integration OR "capacity building" OR trust OR autonomy OR "positive relations" OR involvement OR loneliness)

A2. "interpersonal relation*" OR connectedness OR "quality of relations" OR friend* OR companion* OR "close relationship*" OR "social routine" OR reciprocity

b. Wellbeing

"well-being" OR wellbeing OR "quality of life" OR happiness OR satisfaction OR (positive AND "mental health") OR wellness OR health* OR "physical welfare" OR "purpose in life" OR flourish* OR prosper* OR resilien* OR contentment OR "self-esteem" OR "overall health" OR belonging OR fulfil* OR capabilit* OR salutogen* OR eudaimon* OR eudaemon* OR eudemon* OR trust* OR thriv* OR vibran* OR "sense of community" OR "sense of belonging" OR empower* OR liveability OR livability OR sustainab*

c. Interventions

policy OR policies OR intervention* OR strateg* OR initiative* OR scheme* OR programme* OR program* OR investment* OR environment* OR regeneration* OR coproduc* OR co-produc* OR volunteer* OR "what works" OR implement* OR evaluat* OR "social impact*" OR measur* or project* OR plan* OR enterprise* OR design* OR "active by design" OR asset-based OR area-based OR social-based OR community-based OR community-led OR community-driven OR community-orient*

d. Place and space

Misc. public spaces
(communit* OR communal OR public OR open OR neighbour* OR neighbor* OR local OR town OR city OR village OR bumping OR meeting OR social OR third OR 3rd OR urban OR rural) AND (space* OR place* OR area* OR cent* OR infrastructure* OR asset* OR garden* OR hall* OR square* OR green* OR event* OR hub* OR liability OR venue*)

Misc. public spaces 2
"physical environment" OR "built environment" OR "living environment" OR "free speech zone" OR "safe space*" OR "healthy living cent*" OR "therapeutic landscape*"

Databases

- PsycInfo
- Medline
- Social Policy and Practice (covers Social Care Online and Idox)
- Social Sciences Citation Index
- Academic Search Complete
- LeisureTourism - includes all the core academic journals in leisure, tourism, hospitality, and sport economics and sociology
- Hospitality and Tourism Complete
- Avery Index - Index to journal articles, interviews, obituaries, book and exhibition reviews in the field of landscape, architecture and design
- Opensigle

Optional:

- Systematic review databases (Cochrane database of systematic reviews, DARE, Campbell Library, DoPHER (EPPI-Centre), Joanne Briggs Institute, Epistemonikos)
- ASSIA and Sociological Abstracts. These would have to be accessed through Leeds University Library. However, much of the content is likely to be covered by the databases above.

Appendix 3 Website searching

- Academy for Sustainable Communities http://www.ascskills.org.uk/what-we-do.html
- Altogether Better www.altogetherbetter.org.uk
- American Public Health Association
- Bath University – School for Health http://www.bath.ac.uk
- BIG Lottery wellbeing evaluation
- Bromley by Bow Centre http://www.bbbc.org.uk
- Carnegie UK Trust
- Centre for Salutogenesis, University West, Trollhattan, Norway www.salutogenesis.hv.se/eng
- Centre for Urban design & mental health
- Charities evaluation service http://www.ces-vol.org.uk
- Commission for Architecture and the Built Environment (CABE)
- Communities in Action Enterprises http://www.communitiesinaction.org
- Community Catalysts. www.communitycatalysts.co.uk
- Community Development Exchange http://www.cdx.org.uk
- Community Development Foundation http://www.cdf.org.uk
- Community Health Exchange http://www.scdc.org.uk
- Community Health Involvement and Empowerment Forum http://www.chiefcic.com
- Create streets
- Defra
- Department of Communities and Local Government
- Department of Communities and Local Government – Community empowerment division http://www.togetherwecan.direct.gov.uk
- Durham University – School of Applied Social Science http://www.dur.ac.uk/sass
- ESRC research investments: health and wellbeing http://www.esrc.ac.uk/research/major-investments/health-wellbeing.aspx
- European Commission (urban health)
- Glasgow Centre for Population Health
- Greenspace Scotland
- Groundwork
- Happy City
- Health and Wellbeing Boards (e.g. Wakefield, Leeds…)
- Health Empowerment Leverage Project (HELP) www.healthempowerment.co.uk

- Health Foundation http://www.health.org.uk/?gclid=CKzCtrWsncsCFUyeGwodAtQCew
- Healthy Communities resources
- Home Office
- Improvement foundation – healthy community collaborative http://www.improvementfoundation.org
- Institute of Equity – Marmot review
- Joseph Rowntree Foundation
- Lancaster University – School of Health and Medicine http://www.lancs.ac.uk
- Landscape Institute
- Leeds Beckett University/ Public Health England bibliography of community centred approaches http://eprints.leedsbeckett.ac.uk/1782/
- Liverpool University – Institute of Psychology, health and society http://www.liv.ac.uk
- Local Government Association – health http://www.local.gov.uk/health
- Locality
- London School of Economics – Personal Social Services Research Unit http://www.lse.ac.uk
- National Council for Voluntary Organisations http://www.ncvo-vol.org.uk
- NESTA Realising the Value http://www.nesta.org.uk/event/realising-value and also People Powered health
- New Economics Foundation http://www.neweconomics.org
- NHS Health Scotland http://www.healthscotland.com
- NICE – public health evidence http://www.nice.org.uk/localgovernment/localgovernment.jsp
- NIHR Public Health Research programme http://www.nets.nihr.ac.uk/programmes/phr
- NIHR School for Public Health Research http://www.sphr.nihr.ac.uk
- Northampton University – Institute of Health and Wellbeing
- Office for National Statistics (ONS)
- Picker Institute Europe http://www.pickereurope.org
- Project for public spaces
- Public Health Agency (for Northern Ireland) - Health and social wellbeing improvement http://www.publichealth.hscni.net/directorate-public-health/health-and-social-wellbeing-improvement
- Redrow
- Public Health England http://www.gov.uk/government/organisations/public-health-england
- Royal Society for Public Health http://www.rsph.org.uk
- Royal Society of Arts (especially Connected Communities project)

- SCIE library
- http://www.thehereandnow.org.uk/
- The King's Fund – public health and inequalities http://www.kingsfund.org.uk/topics/public-health-and-inequalities
- Think Local Act personal – building community capacity (BCC) www.thinklocalactpersonal.org.uk/BCC/
- Turning Point http://www.turning-point.co.uk
- UK Faculty of Public Health http://www.fph.org.uk/
- University of Central Lancashire – International school for communities, rights and inclusion http://www.uclan.ac.uk
- Vancouver: Centre of Expertise on Culture and Communities, Simon Fraser University.
- Well London www.welllondon.org.uk
- Wellcome Trust
- Welsh Assembly website
- WHO Europe

Appendix 4 Context & Implementation of Complex Interventions (CICI) Checklist (Pfadenhauer et al., 2016)

Implementation Strategy	
Implementation theory	What were the theoretical underpinnings of the implementation efforts?
Context	
Setting	- Which characteristics of setting influence the intervention, its implementation, its population reach and its effectiveness? - How does the setting exert its influence on the intervention, its implementation and their outcomes? - How does the setting interact with other domains of context?
Geographical	- Which geographical characteristics influence the intervention, its implementation, its population reach and its effectiveness? - How do geographical characteristics exert its influence on the intervention, its implementation and their outcomes? How do geographical characteristics interact with other domains of context?
Epidemiological	- Which epidemiological characteristics of the community influence the intervention, its implementation, its population reach and its effectiveness? - How do epidemiological characteristics exert its influence on the intervention, its implementation and their outcomes? - How do epidemiological characteristics interact with other domains of context?
Socio-economic	- Which socio-economic characteristics of the community influence the intervention, its implementation, its population reach and its effectiveness? - How do socio-economic characteristics exert their influence on the intervention, its implementation and their outcomes? - How do socio-economic characteristics interact with other domains of context?

Socio-cultural	- Which socio-cultural characteristics of the community influence the intervention, its implementation, its population reach and its effectiveness? - How do socio-cultural characteristics exert their influence on the intervention, its implementation and their outcomes? - How do socio-cultural characteristics interact with other domains of context?
Political	- What aspects of the political environment influence the intervention, its implementation, its population reach and its effectiveness? - How do political aspects exert their influence on the intervention, its implementation and their outcomes? - How do political characteristics interact with other domains of context?
Legal	- What aspects of the legal environment influence the intervention, its implementation, its population reach and its effectiveness? How do legal aspects exert their influence on implementation the intervention, its implementation and their outcomes? - How do legal characteristics interact with other domains of context?
Ethical	- What aspects of the ethical environment have influenced the intervention and its effectiveness? - How do ethical aspects exert their influence on the intervention, its implementation and their outcomes? - How do ethical characteristics interact with other domains of context?
Implementation	
Provider	- What mechanisms and processes in the providers are applied in the implementation of the intervention? - How do these mechanisms and processes enable or limit implementation? - How do provider characteristics interact with other domains of implementation or context?
Organisation and structure	- What mechanisms and processes of organisation and structure are applied in the implementation of the intervention?

	- How do these mechanisms and processes enable or limit implementation? - How do organisation and structure interact with other domains of implementation or context?
Funding	- Which funding measures and mechanisms are applied in the implementation of the intervention? - How do these mechanisms and processes enable or limit implementation? - How does funding interact with other domains of implementation or context?
Policy	- Which policy measures and mechanisms are applied in the implementation of the intervention? - How do these mechanisms and processes enable or limit implementation? - How does policy interact with other domains of implementation or context?

Appendix 5 Validity assessment checklists

From WWW C Methods guide https://whatworkswellbeing.files.wordpress.com/2017/04/wwcw-methods-guide-mar-2017.pdf pp25-30

Annex 2: Quality checklist quantitative evidence of intervention effectiveness

Source: Based on Early Intervention Foundation Quality Checklist and amended for use.

1. Was the evaluation well-designed? **Yes No Can't tell N/A**

· **Fidelity:** The extent to which the intervention was delivered with fidelity is clear - i.e. if there is a specific intervention which is being evaluated, this has been well reproduced.

· **Measurement**: The measures are appropriate for the intervention's anticipated outcomes and population.

· Participants completed the same set of measures once shortly before participating in the intervention and once again immediately afterwards

· An 'intent-to-treat' design was used, meaning that all participants recruited to the intervention participated in the pre/post measurement, regardless of whether or how much of the intervention they received, even if they dropped out of the intervention (this does not include dropping out of the study- which may then be regarded as missing data)

· **Counterfactual**:

· Assignment to the treatment and comparison group was at the appropriate level (e.g., individual, family, school, community)

· The comparison condition provides an appropriate counterfactual to the treatment group. Consider**:**

o Participants were randomly assigned to the treatment and control group through the use of methods appropriate for the circumstances and target population OR sufficiently rigorous quasi-experimental methods (regression discontinuity, propensity score matching) were used to generate an appropriately comparable sample through non-random methods

o The treatment and comparison conditions are thoroughly described.

2. Was the study carried out appropriately? including appropriate sample **Yes No Can't Tell N/A**

· **Representative:** The sample is representative of the intervention's target population in terms of age, demographics and level of need. The sample characteristics are clearly stated.

· There is baseline equivalence between the treatment and comparison group participants on key demographic variables of interest to the study and baseline measures of outcomes (when feasible)

· **Sample size**: The sample is sufficiently large to test for the desired impact. This depends most importantly on the effect size, however a suggestion could be e.g. a minimum of 20 participants have completed the measures at both time points within each study group.

· **Attrition:** A minimum of 35% of the participants completed pre/ post measures. Overall study attrition is not higher than 65%.

· The study had clear processes for determining and reporting drop-out and dose. Differences between study drop-outs and completers were reported if attrition was greater than 10%.

· The study assessed and reported on overall and differential attrition

· **Equivalence:** Risks for contamination of the comparison group and other confounding factors have been taken into account and controlled for in the analysis if possible:

o Participants were blind to their assignment to the treatment and comparison group

· There was consistent and equivalent measurement of the treatment and control groups at all points when measurement took place.

· **Measures**: The measures used were valid and reliable. This means that the measure was standardised and validated independently of the study and the methods for standardization were published. Administrative data and observational measures may also have been used to measure programme impact, but sufficient information was given to determine their validity for doing this.

· Measurement was independent of any measures used as part of the treatment.

· In addition to any self-reported data (collected through the use of validated instruments), the study also included assessment information independent of the study participants (eg, an independent observer, administrative data, etc).

3. Was analysis appropriate? **Yes** **No** **Can't tell** **N/A**

· The methods used to analyse results are appropriate given the data being analysed (categorical, ordinal, ratio/ parametric or non-parametric, etc) and the purpose of the analysis.

· Appropriate methods have been used and reported for the treatment of missing data.

4. Is the evidence consistent?

· Are the findings made explicit?

· Is there adequate discussion of the evidence both for and against the researcher's arguments?

· Has the researcher discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)?

· Are the findings discussed in relation to the original research question?

Quality checklist for qualitative studies (or qualitative components within mixed methods studies)

Drawing on the CASP approach, the following are the minimum criteria for inclusion of qualitative evidence in the review. If the answer to all of these questions is "yes", the study can be included in the study in the review.

Study inclusion checklist (screening questions)

1. Is a qualitative methodology appropriate? **Yes** **No** **Can't tell**

Consider:

Does the research seek to interpret or illuminate the actions and/or subjective experiences of research participants?

Is qualitative research the right methodology for addressing the research goal?

2. Is the research design appropriate for addressing the aims of the research?

Consider:

Has the researcher justified the research design (e.g. have they discussed how they decided which method to use)?

3. Is there a clear statement of findings?

***Consider*:**

Are the findings made explicit?

Is there adequate discussion of the evidence both for and against the researcher's arguments?

Has the researcher discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)?

Are the findings discussed in relation to the original research question?

The following criteria should be considered for each study to be included in the review (ie, those for which the answers to all of the screening questions
were "yes").

4. Was the data collected in a way that addressed the research issue?
Consider:
Is the setting for data collection justified?
Is it is clear what methods were used to collect data? (e.g. focus group, semi-structured interview etc.)?
Has the researcher justified the methods chosen?
Has the researcher made the process of data collection explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?
If methods were modified during the study, has the researcher explained how and why?
Is the form of data clear (e.g. tape recordings, video material, notes etc)?

5. Was the recruitment strategy appropriate to the aims of the research?
Consider:
Has the researcher explained how the participants were selected?
Have they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study?
Is there are any discussion around recruitment and potential bias (e.g. why some people chose not to take part)?
Is the selection of cases/ sampling strategy theoretically justified?

6. Was the data analysis sufficiently rigorous?
Consider:
If there is an in-depth description of the analysis process?
If thematic analysis is used, is it clear how the categories/themes were derived from the data?
Does the researcher explain how the data presented were selected from the original sample to demonstrate the analysis process?
Are sufficient data presented to support the findings?
Were the findings grounded in/ supported by the data?
Was there good breadth and/or depth achieved in the findings?

To what extent are contradictory data taken into account?
Are the data appropriately referenced (i.e. attributions to (anonymised) respondents)?

7. Has the relationship between researcher and participants been adequately considered?
Consider:
Has the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location?
How has the researcher responded to events during the study and have they considered the implications of any changes in the research design?

8. Have ethical issues been taken into consideration?
Consider:
Are there sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained?
Has the researcher discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)?
Have they adequately discussed issues like informed consent and procedures in place to protect anonymity?
Have the consequences of the research been considered i.e. raising expectations, changing behaviour?
Has approval been sought from an ethics committee?

9. Contribution of the research to wellbeing impact questions?
Consider:
Does the study make a contribution to existing knowledge or understanding of what works for wellbeing? e.g. are the findings considered in relation to current practice or policy?