NIHR | Public Health Intervention Responsive Studies Teams

PHIRST South Bank

HRA PROTOCOL COMPLIANCE DECLARATION
This protocol has regard for the HRA guidance.

FULL STUDY TITLE: Evaluation of how 'hybrid' public health posts in local government support the delivery of healthier places in the Oxford-Cambridge Arc

PROTOCOL VERSION NUMBER AND DATE: Version 2.00; 12 June 2024

FUNDERS Number: NIHR135694

RESEARCH REFERENCE NUMBERS: NIHR162742
IRAS number: N/A

SIGNATURE PAGE

The undersigned confirm that the following protocol has been agreed and accepted and that the Chief Investigator agrees to conduct the study in compliance with the approved protocol and will adhere to the principles outlined in the Declaration of Helsinki, the Sponsor's SOPs, and other regulatory requirement.

I agree to ensure that the confidential information contained in this document will not be used for any other purpose other than the evaluation or conduct of the investigation without the prior written consent of the Sponsor.

I also confirm that I will make the findings of the study publicly available through publication or other dissemination tools without any unnecessary delay and that an honest, accurate and transparent account of the study will be given; and that any discrepancies from the study as planned in this protocol will be explained.

For and on behalf of the study sponsor.

Centre Chief Investigator:

Date: 12.06.2024

Signature:

.....
Name: (please print):

Professor Susie Sykes
.....

CONTENTS LIST

KEY STUDY CONTACTS

Chief Investigator	Professor Issa Chaer (PI), Dr Thomas Mills (co-PI)
Study Co-ordinator	Emma Doohan
Sponsor	London South Bank University
Funder(s)	NIHR
Key Protocol Contributors	**Research Team and WP Leads** Dr Thomas Mills millst3@lsbu.ac.uk Professor Issa Chaer chaeri@lsbu.ac.uk Dr Sophie Elsmore elsmores@lsbu.ac.uk Dr James Bishop james.bishop@lsbu.ac.uk Professor Chris Flood floodc@lsbu.ac.uk Professor Susie Sykes sykess@lsbu.ac.uk Professor Jane Wills willsj@lsbu.ac.uk Dr Bertug Ozarisoy bertug.ozarisoy@lsbu.ac.uk Mr Adam Cook s4035479@lsbu.ac.uk **PPIE Advisory Panel** Helen Cherry Anouar Kassim Claire Moreton Jane Whild Jay Virgo Kerry Thompson Lucy Gatehouse Peter Richardson Tressa Verrier
Committees	PHIRST South Bank Central Executive Committee (Contact: Ms. Anita Hoque) PHIRST South Bank Oversight Board (Chair: Professor Rachel Baker)

STUDY SUMMARY

Study Title	Evaluation of how 'hybrid' public health posts in local government support the delivery of healthier places in the Oxford-Cambridge Arc
Study Design	Mixed methods evaluation
Study Participants	Staff and stakeholders based at, or partnered with, Oxfordshire County Council and the shared public health team that works across Milton Keynes, Bedford Borough and Central Bedfordshire (referred to as 'BMK'); stakeholders involved in the design or implementation of public health posts in other local government contexts.
Planned Study Period	June 2024 to August 2025
Research Questions and Objectives	**Primary research question**: How do 'hybrid' public health posts support the delivery of healthier places? **Research objectives:** • To develop a typology of posts for supporting the delivery of healthier places that are being implemented by local governments • To provide detailed insight into the 'hybrid' public health posts in the two sites: Oxfordshire County Council and BMK unitary authorities • To identify the activities, resources and competencies for the posts in both sites

	• To assess the achievement of short-term outcomes for the posts in both sites • To establish what elements of public health involvement in planning are considered most effective in both sites • To identify the contextual barriers, facilitators and opportunities in both sites, including the impact of different local government structures and pre-existing planning policies • To calculate the costs and wider value of collaborations between public health and planning.

Funder	Financial and non-financial support given
NIHR	This evaluation forms part of the PHIRST South Bank research which is funded by NIHR. It is one of ten evaluations of local government public health interventions that this grant has funded.

ROLE OF STUDY SPONSOR AND FUNDER

PHIRST South Bank is one of 8 UK Public Health Intervention Responsive Studies Centres funded by NIHR. It is hosted by London South Bank University (LSBU).

ROLES AND RESPONSIBILITIES OF STUDY MANAGEMENT COMMITTEES/GROUPS & INDIVIDUALS

PHIRST South Bank Teams Executive Committee (EC)

The EC sits within the sponsor organisation, LSBU. It has management and governance responsibility for PHIRST South Bank and is made up of the Centre Co-Investigators, senior academic staff at LSBU and a lay representative, representing the views, experiences, or interests of the broader community.

PHIRST South Bank Advisory Group

The Advisory Group provides overall supervision for the project on behalf of the Project Sponsor and Project Funder and ensures that the project is conducted to the rigorous standards set out in the Department of Health's Research Governance Framework for Health and Social Care and the Guidelines for Good Clinical Practice. Membership has been approved by the National Institute for Health and Care Research (NIHR).

Project Stakeholder Group

A local stakeholder group will be set up to ensure liaison between the research team, the local project partners and PPIE representatives. PHIRST South Bank will also provide regular updates to the group. A representative from OCC and the shared health public team for BMK will join.

KEYWORDS

Local Plans, Healthier Places, Healthy Planning, Natural & Built Environment, Improving Public Health, Health Impact Assessment (HIA), Health in All Policies (HiAP)

STUDY PROTOCOL

1 BACKGROUND

This study will generate insight into the activities and impact of public health (PH) posts for supporting the delivery of healthier places. Local authorities are increasingly encouraged to combine public health and planning expertise to create local 'places' that support people's health and wellbeing and prevent health inequalities. Many public health teams are creating PH posts to work alongside their colleagues in planning that are new and innovative. Such posts aim to enhance the capability of planning systems to impact positively on the health and wellbeing of local communities.

Interest in how the health and wellbeing of local people may be improved through the planning systems is driven by a range of factors, including evidence – discussed in more detail in the literature section – that the built and natural environments are vital health determinants (Barton and Grant, 2006; Burgoine et al., 2014; Zhong et al., 2022). Partly because of this, national policymakers have promoted partnerships between public health and planning, including via the National Planning Policy Framework (NPPF), initially published in 2012 and updated in 2023 by the Department for Levelling Up, Housing and Communities (DLUHC, 2023). Changes to public health commissioning, with public health moving out of the NHS and into local government following the Health and Social Care Act (2012), present opportunities for enhancing local collaboration. And many national guidance documents exist which outline what can be done locally to improve population health via the planning system (DLUHC, 2024; NHSE, 2018; PHE/LGA, 2016; PHE, 2019). Research suggests, however, that considerable barriers exist in the UK to effective planning for health, including operational siloes, resource pressures and skills gaps (Carmichael et al., 2012; Carmichael et al., 2013; Ige-Elegbede et al., 2021; Lake et al., 2017).

Although it is unlikely that competency-oriented workforce initiatives will be sufficient to tackle major social issues on their own (Chang et al., 2022a), it is possible that the widespread implementation of PH posts could contribute to aligning the planning system with public health objectives. However, little research has been conducted on how PH professionals may best support the delivery of healthier places. We are aware of only one research study in the UK, recently undertaken by PHIRST LiLaC, which has directly explored the activities and impacts of 'specialist dedicated posts' (Halliday et al., 2022; Coombes et al., 2024).

Local governments seeking to embed health considerations into planning also face various options. PH posts that are being designed and implemented locally differ in important respects: e.g., some are 'specialist' posts dedicated solely to supporting planning whereas others are 'hybrid' posts in which the postholder balances a variety of job tasks; some posts are based in public health departments, some in planning departments and some external to local government, with a focus on building capacity among developers. This is significant because the positioning, funding and makeup of the posts are likely to entail varied advantages and disadvantages (Chang et al., 2022b). Alternative approaches also exist, such as implementing local policies that compel Health Impact Assessments (HIAs), which may be implemented instead of or alongside dedicated posts.

Research is therefore required to ensure that local decision-making on the deployment and design of PH posts is informed by evidence on what works, impact/outcomes and cost implications alignment with the long-term benefits and sustainability of the posts. Here, we present a mixed-method evaluation design that aims to build on PHIRST LiLaC's research by developing a typology of posts, as implemented across diverse local government contexts, as well as investigating 'hybrid' PH posts in two case study sites: Oxfordshire County Council (OCC) and three unitary authorities in Milton Keynes, Bedford Borough and Central Bedfordshire. The latter are served by a single shared public health team, referred to as the 'shared public health team for BMK'.

1.1 Review of the literature

Much of the current evidence-base research pertains to the importance of healthier places for health and wellbeing outcomes. Important early studies include efforts to conceptualise the natural and built environments as determinants of health (Barton and Grant, 2006; Marmot and Wilkinson, 2009). Quantitative studies have overcome methodological challenges, due to a 'complex and dynamic relationship' (Zhong et al., 2022), to establish associations between environmental factors and health (Burgoine et al., 2014; Zhong et al., 2022): Zhong et al's recent review highlights 'inextricable links' between features of the built environment and chronic disease outcomes, for example (Zhong et al, 2022).

Considerable evaluative research also exists on planning interventions for improving health and wellbeing (Bird et al., 2018; CCHC, 2022). An important publication here is Public Health England's 'Built and natural environment planning principles for promoting health: an umbrella review', published in 2018, which reviewed 117 review-level papers (Bird et al., 2018). This highlighted various planning principles and interventions for the five core planning areas of neighbourhood design, housing, healthier foods, natural and sustainable environments and transport (see Figure 1). However, this research did not explore the type and the activities and impacts of posts that may facilitate the delivery of health-promoting planning interventions.

Figure 1: Planning principles by area

Area	Planning principle
Neighbourhood Design	Enhance neighbourhood walkability
	Build complete and compact neighbourhoods
	Enhance connectivity with safe and efficient infrastructure
Housing	Improve quality of housing
	Increase provision of affordable and diverse housing
	Increase provision of affordable housing for groups with specific needs
Healthier foods	Provision of healthier, affordable food for the general population
	Enhanced community food and infrastructure
Natural and sustainable environments	Reduce exposure to environmental hazards
	Access to and engagement with the natural environment
	Adaptation to climate change
Transport	Provision of active travel infrastructure
	Provision of public transport
	Prioritise active travel and road safety
	Enable mobility for all ages and activities

Adapted from Bird et al., 2018

Indeed, while these areas of research underline the importance of planning for health, they are less directly concerned with how that might be achieved. One area of research that has explored implementation-oriented questions pertaining to how local government planning and policymaking may be optimised, from a public health perspective, is that on Health in All Policies (HiAP) (Guglielmin et al., 2018; Lilly et al., 2023), an approach which aligns with 'planning for health' and has been promoted extensively in the UK (PHE/LGA, 2016). This research, which has an international scope, has usefully revealed various enablers and barriers to implementing policies in diverse areas (e.g., transport, housing, urban planning, the environment, education, agriculture, finance, taxation and economic development) that promote health and health equity, which is the aim of HiAP (WHO, 2024). Barriers and enablers to achieving this aim include factors such as national government legislation, as well as local staff capacity, effective cross-sectoral relationships and conducive local politics (Lilly et al., 2023). The importance of 'champions and policy entrepreneurs' (Lilly et al., 2023) and 'dedicated staff' (Guglielmin et al., 2018) is also emphasised here, which would align with the case for dedicated PH posts. However, as Halliday et al., (2022) note, there are no published studies of posts that operate across PH and planning, or which have the wider remit of promoting health across local government, in a UK context.

The recently completed PHIRST LiLaC evaluation (Halliday et al., 2022; Coombes et al., 2024) therefore represents an important starting point for developing the evidence-base in this area. This focused on 'specialist dedicated posts' in two councils, Southampton City Council & East Sussex County Council. The research briefing provides useful insight into the knowledge and competencies required of postholders, key activities such as training in Health Impact Assessment (HIA), and the forms of impact and outcome that may be anticipated: the latter includes mutually beneficial learning among PH professionals and planners, as well as the improved quality of HIAs and neighbourhood plans (Coombes et al., 2024). With increasing numbers of local governments creating similar posts,

there is scope for further research to build on PHIRST LiLaC's insights to better understand the posts, including differences in post designs, that are emerging nationally.

1.2 Protocol development process

This protocol has been developed in collaboration with the local government partners based at OCC and the shared public health team that serves BMK. A series of workshops was convened to assess the evaluability of the intervention and generate an agreed set of evaluation questions and design. Our approach to assess evaluability is informed by the five questions identified by Ogilvie et al. (2011) and the stages within the Evaluability Assessment Framework developed by What Works Scotland (Craig and Campbell, 2015). These stages include a structured engagement with stakeholders to clarify evaluation goals; agreement of an intervention logic model or theory of change; a review of existing research literature and data sources; and making design recommendations. The stages were incorporated within an introductory meeting with the local stakeholders followed by three structured online workshops facilitated by PHIRST South Bank. Each workshop lasted two hours and was attended by: the PHIRST South Bank research team and key local government stakeholders. During these facilitated workshops we worked towards a shared understanding of:

- The aims and processes of the intervention;
- The logic model and theory of change underpinning the intervention;
- The existing evidence and gaps in knowledge;
- An evaluation question that is feasible and useful to both local stakeholders and the wider PH community;
- And an appropriate evaluation design plan.

Communication continued with local stakeholders after the formal workshop process to facilitate joint decision making around specific aspects of protocol design.

1.3 The intervention

The shared public health team for BMK and OCC have each appointed '**hybrid**' PH posts to support the delivery of healthier places. We understand 'hybrid' to primarily convey that postholders do varied PH and planning activities which include but are not limited to planning support. This is, therefore, a different type of post to the 'specialist dedicated posts' that were the focus of the PHIRST LiLaC evaluation (Halliday et al., 2022).

The 'hybrid' posts form part of a 'Built Environment and Public Health' core team, consisting of three people, which sits in the shared public health service for BMK: this forms one case study site. In OCC there is a 'Healthy Place Shaping Team', which similarly consists of three people of diverse capabilities and priorities. This forms the second case study site. In addition, there are contrasting local government structures across the two sites: the shared public health team for BMK serves the three unitary authorities (Bedford Borough, Central Bedfordshire and Milton Keynes) whereas OCC is an upper-tier local authority that sits above five district councils: Oxford City Council, Cherwell District Council North Oxfordshire, South Oxford District Council, Vale of White Horse District Council and West Oxfordshire District Council. This means that there is variation with regards to where postholders are positioned and how they relate to planners and other local government colleagues, while the activities and outcomes of the posts may vary: e.g., our early discussions with local partners indicate that the core OCC team has a more strategic, system-building function than the public health team that serves BMK.

2. RATIONALE

The appointing of 'hybrid' PH posts for supporting the delivery of healthier places by OCC and the shared public health team for BMK presents a significant research opportunity in an area where there is a clear gap in knowledge. Indeed, despite considerable national policy interest in optimising the planning system to drive health and wellbeing outcomes, major barriers continue to exist, such as staff skills and operational siloes (Ige-Elegbede et al., 2021; Lake et al., 2017). PH posts may contribute to overcoming these barriers. And yet, there is very little research on such posts in a UK context (Halliday et al, 2022), a reflection of a more general lack of detailed research on efforts to optimise planning systems that are sensitive to the idiosyncrasies of local government contexts (Guglielmin et al., 2018).

The 'hybrid' nature of the posts presents an opportunity to build on PHIRST LiLaC's evaluation of 'dedicated specialist posts' (Halliday et al., 2022), as different post designs and approaches may have varied strengths and weaknesses. These are important to research if local government decision-making

in this area is to be evidence-based. The varied local government structures and arrangements of BMK and OCC also present an opportunity to understand what post types are optimal (e.g., hybrid or specialist, or PH- or planning-based) and what activities have most impact (e.g., relationship building at System-level or HIA training) in different local government contexts. The significance of local government structures to optimal post design is recognised in PHIRST LiLaC's research briefing but was not a primary research focus of theirs (Coombes et al., 2024).

3. THEORETICAL FRAMEWORK

'Hybrid' posts for supporting the delivery of healthier places are the primary unit of interest. Such posts will be conceptualised as a 'complex intervention': i.e., interventions that adapt to context to take on a different *form* while serving similar *functions* across diverse settings (Hawe, 2015). Complex intervention researchers highlight that, to fully understand complex interventions requires both an understanding of intervention activities and outcomes (as is typical in intervention research) *and* an understanding of the context into which interventions are delivered (Hawe, 2015; Mills et al., 2019; Skivington et al., 2021). This is necessary to arrive at context-sensitive recommendations for how interventions can be scaled-up outside of initial development sites (Mills et al., 2019).

Our logic model (Figure 1) outlines the activities and short-, medium- and long-term outcomes for 'hybrid' PH posts, as implemented across BMK and OCC. Based on this, we present a programme theory statement for the PH posts:

- 'Hybrid' PH posts can drive improvements to the planning system which impact positively on the health and wellbeing of local communities in the long term.
- This is achieved through activities such as system-level advocacy, leadership and collaboration, internal stakeholder engagement, external partner engagement, capability/capacity building, evidence and data support, and direct inputs into plans and policies.

Figure 1: A logic model of 'hybrid posts' in BMK and OCC

Public Health and Built Environment Team

Inputs	Activities	Short term outcomes	Interim outcomes	Long term outcomes
Funding for 'hybrid' PH posts for supporting the delivery of healthy places in Oxfordshire & BMK Variation in post priorities, levels of expertise & time across the sites Resources – e.g., HIA toolkit; appropriately framed & usable evidence-base Local data team OHID Monitoring system	System-level advocacy, leadership & collaboration Stakeholder engagement & relationship building – inc. among senior management, councillors, PH teams, planners & transport External partner engagement – e.g., NHS, developers & agents, local communities Capability & capacity development among PH teams & planners: HIA training, webinars, feedback Evidence & data support PH inputs into major policies & plans, as well as contributions to HIAs & individual applications	System outcomes: • Enhanced joined-up working at System level (between upper & lower tier local gov. & between PH & local authorities) Organisational outcomes: • Enhanced PH influence over policy & planning • Shift in culture & shared understanding of planning for health objectives • Improved relationships between PH & planning with mutual benefits • Increase use of public health evidence & data in planning • Increase in the quantity of high quality HIAs • PH is consulted at appropriate time points (inc. pre-app stage) Individual outcomes: • Enhanced awareness & understanding of planning & health links at all levels – e.g., that Local Plans is a PH intervention • Enhanced skills, motivation & capacity in planning for health • Enhanced external partner buy-in & engagement (e.g., in-time applications)	System outcomes: • System-wide progress towards 'Health in All Policies' approach Organisational outcomes: • Health is embedded in all plans & policies • PH is consulted on all strategic planning applications • Planning decisions are more sustainable & likely to positively impact health • Planning approvals are implemented without post-hoc weakening Individual outcomes: • Planning for health is normalised in planning practices – inc. use of evidence & data • PH professionals & planners are empowered in their discussions with stakeholders throughout the planning & policy process • Improved developer compliance	Changes to the built environment have positive implications for: • Physical & mental health • Environmental health: climate adaptation & mitigation • Health inequalities • Economic prosperity • Sustainable transport: improved accessibility & active travel • Social capital & cohesion: improved integration of existing & new communities • Public safety & crime • The vitality & beauty of public places • The accessibility of health & care services

Moderating factors (i.e., factors which present contrasting barriers, enablers and opportunities across distinct delivery settings):

- Micro-level: baseline in terms of PH professionals & planners' capability, opportunity & motivation to plan for health
- Meso-level: organisational readiness to prioritise PH in planning, including the impact of variation in local policies/priorities, council structures, planning processes, culture & pre-existing relationships; external partners' capability & willingness to support planning process (e.g., NHS, local developers)
- Macro-level: national planning laws, regulations & policies; macro-economic factors, political priorities & local government funding

The evaluation will test and refine this programme theory statement and the logic model which underpins it. We will, for example, explore what activities are considered most impactful locally. Evidence of impact on the short-, medium- and long-term outcomes listed in the model with also be

assessed. In the logic model, we have categorised anticipated short- and medium-term outcomes by system, organisational and individual levels. These range from postholder contributions to joined-up working across the various tiers of local government at system level; improved relationships, processes and mutual benefits among public health professionals and planners at organisational level; and enhanced awareness, skills, engagement and capacity at individual level.

In keeping with complex intervention research, we will also aim to provide a detailed, context-sensitive account of the 'hybrid' PH posts. We will utilise the micro-, meso- and macro-level framework to provide a levelled account of the contextual factors that shape intervention activities and outcomes, building on the initial list of moderating factors in the logic model (see Figure 1). As well as considering the impact of local government structures at the meso-level, for example, we will consider factors, at the micro-level, pertaining to local stakeholders' pre-existing capability, opportunity and motivation to plan for health: for example, it may be the case the postholders encounter a highly motivated planning team in one site that attends HIA training sessions – thus enabling the attainment of individual level outcomes – while, in another site, planners are less motivated to attend training offers. Included in the logic model is also a list of macro-level factors that set the overall context of the posts, including national planning laws and national government spending decisions. A consideration of macro-level factors such as these can enable wider policy recommendations to be generated from intervention research (Mills et al., 2022).

4. RESEARCH QUESTIONS / OBJECTIVES / OUTCOMES

4.1 Question

The primary research question is:

- How do 'hybrid' public health posts support the delivery of healthier places?

4.2 Objectives

The research objectives for the study are:

- To develop a typology of posts for supporting the delivery of healthier places that are being implemented by local governments
- To provide detailed insight into the 'hybrid' public health posts in the two sites: Oxfordshire County Council and BMK unitary authorities
- To identify the activities, resources and competencies for the posts in both sites
- To assess the achievement of short-term outcomes for the posts in both sites
- To establish what elements of public health involvement in planning are considered most effective in both sites
- To identify the contextual barriers, facilitators and opportunities in both sites, including the impact of different local government structures and pre-existing planning policies
- To calculate the costs and wider value of collaborations between public health and planning.

4.3 Outcomes

- A typology of posts for supporting delivering of healthier places
- An empirically tested and validated logic model of 'hybrid' public health posts
- Qualitative themes that enrich understanding of the activities and outcomes of 'hybrid' public health posts
- Qualitative themes on the features of local government contexts (e.g., structures, policy priorities, local capability) which enable or inhibit the achievement of outcomes
- Understanding of the cost implications of 'hybrid' public health posts and the value they generate

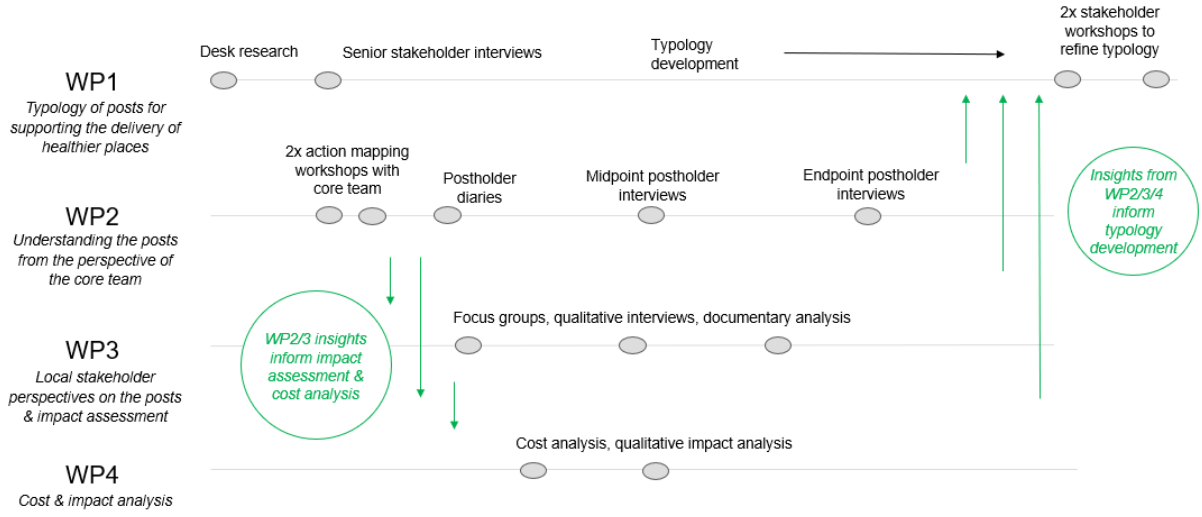
5. STUDY DESIGN

Complex intervention thinking, which highlights the importance of understanding how interventions work in the contexts of their delivery (Hawe, 2015; Mills et al., 2019; Skivington et al., 2021), has informed our study design. We will start with desk-based research and qualitative interviews with key stakeholders with experience of the posts nationally. This will inform a typology of different post designs as implemented in varied local government contexts and provide insight into the broader context within which to situate the case study sites. It will, for example, help us understand what is similar and different about the 'hybrid' PH posts appointed by OCC and the shared public health team that serves BMK.

Then, we will conduct case study research that will investigate in detail how the 'hybrid' PH posts are working in the two case study sites. The coproduced logic model (see Figure 1) will frame the case study research: it describes activities and short-term outcomes which will be tested and refined throughout the empirical research. While the logic model provides an account of the posts across BMK and OCC combined, we will explore each site as a distinct case study to maximise potential insight into contextual variation across the sites, including in relation to what is implemented, activities, outcomes and the impact of each local government setting. As such, a multiple case study approach will be adopted (Yin, 2017). This is appropriate when researchers are interested in understanding units with certain shared characteristics but where there are sources of variation that are of research interest (Stake, 2006). The multiple case study approach presents opportunities to analyse data both within a single case and across cases with potential to build robust theory (Yin, 2017).

The research question and objectives will be addressed across four work packages (WP). We represent the interconnections between the WPs in Figure 2 and provide a summary of each WP, before exploring the WPs in more detail.

Figure 2: interconnections across evaluation work packages



WP1: typology of posts for delivering healthier places

WP1 will inform the evaluation's multiple case study approach, by providing the broader context within which to situate the case study sites. It will produce a typology of posts for supporting the delivery of healthier places that will build an understanding of the range of posts working across PH and planning. The typology will be created via extensive desk-based research and interviews with key senior stakeholders with experience of the posts across varied local government contexts, either working as postholders or as senior managers. We anticipate that 'hybrid' PH posts will be one type within the typology and therefore plan to interview senior managers in the two case study sites in WP1.

While WP1 will initiate the research, the typology will be refined by the insights gleaned during WP2, 3 and 4 regarding the nature and impact of the 'hybrid' posts. The 2X stakeholder workshops will conclude WP1. These will bring together key internal and external stakeholders to refine the typology.

WP2: understanding the posts from the perspective of the core team

WP2 will begin with action mapping workshops involving each core team: i.e. the workshops will be undertaken separately for the shared public health team in BMK and OCC team, as distinct case study sites. The action mapping workshops will capture core teams' views on post activities, including what they consider to be the most impactful activities, and who they consider to be the key stakeholders/beneficiaries. This will inform the sampling for WP3. Postholders (n = 1, in each site) will be interviewed at the mid- and end-points to provide the research team with understanding of local developments during the data collection phase. Postholders will also have the option of completing a short reflective and impact diary if they think this would be helpful to capture what activities/resources they have inputted into and impacts arising: the research team's previous experience with diaries in similar contexts suggests they can be a useful tool for frontline staff to capture brief observational notes that are explored in more detail in interviews.

WP3: local stakeholder perspectives on the posts and impact assessment
WP3 will explore the views of key local stakeholders who are external to the core team but are recognised to have insight relevant to assessing the hybrid posts: it is anticipated that most of these stakeholders will have been identified as beneficiaries by the core team in WP2. A combination of interviews and focus groups will be undertaken to assess the impact of the posts within the case study sites, from the perspective of local stakeholders. In support of the assessment of impact, a documentary analysis will also be undertaken as part of WP3, for which documents pertaining to the establishment, activities and impact of the posts will be compiled. This will involve considerations around local context, expectations around the roles, and outcomes and challenges encountered in each case study site, with findings from WP2 feeding into this process.

WP4: cost and impact analysis
A costing analysis will be conducted of all resources used and total costs associated with the 'hybrid' posts. Qualitative data collected through WP2 and 3 will inform additional economic insights on the cost and resource dimensions of the posts – e.g., resources used, examples of positive impact delivery and opportunity costs, such as time and activity.

Table 1 presents a summary of the study design with study methods and data for each work package

Table 1: A summary of the study design

	Objectives	Study Methods	Data Sources
WP1: typology of posts for delivering healthier places	1.	• Desk-based research • Stakeholder interviews (n=4 to 8) with stakeholders (either postholders or senior managers) who will be purposefully sampled for their expertise in the posts • Meetings with key external stakeholders (2X meetings)	Secondary data: academic and grey literature Primary data: external stakeholder interviews
WP2: understanding the posts from the perspective of the core team	2. 3. 4. 5. 6.	• Action mapping workshops- 2X action mapping workshops with each 'hybrid' team: between 2 and 4 core team members are anticipated for each site. • Postholders to have the option of diaries to capture observational notes on activities which appear to be most impactful • Qualitative interviews - 2 qualitative interviews with postholders at the mid- and end-points of the study period: thus, a total of n=4 interviews are anticipated.	Primary data: transcripts from action mapping workshops, observational diaries, postholder interviews
WP3: local stakeholder perspectives on the posts and	4. 5.	• Interviews and focus groups will explore the views of diverse local stakeholders with insight into the effectiveness of the posts: we anticipate up to n = 20 participants across both sites will be	Primary data: impact survey data, stakeholder interviews

impact assessment		involved in the focus groups and interviews. • Documentary analysis of relevant policy, planning and administrative (e.g., minutes) documentation to assess impact and outcomes in both sites	Secondary data: relevant local government documents
WP4: cost and impact analysis	7.	• Resource use and budgetary information analysis • Qualitative costing analysis to identify and understand how resources are utilised. WP leads will co-ordinate their designs to ensure qualitative research questions capture economic dimensions within WP2 and 3. An option to re-interview some stakeholders will be retained to elicit further economic data and understanding if considered necessary.	Budgetary information provided by local partners Primary data: WP2 and 3 qualitative data

6. SAMPLE AND RECRUITMENT

WP1: typology of posts for delivering healthier places
It is anticipated that WP1 will involve between 4 to 8 interviews with key stakeholders who will be identified through the desk-based research: purposive sampling will be used to recruit the stakeholders, who will have expertise in a range of types of posts working across PH and planning. Senior managers of the posts at the two case study sites will be interviewed as part of this stage to understand the operation of the 'hybrid' post. External stakeholders will be recruited through professional and academic PH networks. Participants will be invited to participate in interviews via email, which will include participant information sheets.

The 2X stakeholder workshops, undertaken at the end of WP1 to refine the typology, will involve stakeholders who either participated in the interviews or played a role in identifying interview candidates.

WP2: understanding the posts from the perspective of the core team
Purposive sampling will be used to recruit core team members for the action mapping workshops: between 2 and 4 core team members are anticipated for each site, including senior managers responsible for the design of the posts, and postholders. Postholders will be recruited, via purposive sampling, for the mid- and end-point interviews and impact diaries. Local authority gatekeepers will provide initial contact, after which the research team will email the postholders about the study, with this email including participant information sheets. A total of n=4 interviews are anticipated involving the postholders.

WP3: local stakeholder perspectives on the posts and impact assessment
Purposive sampling will be used to recruit individuals with insights on the hybrid posts locally. Key local stakeholders, particularly those identified during WP2, will form the basis of the sample. It is anticipated that this is likely to consist of (but will not be limited to) various stakeholder groups, including:

- Planners and transport colleagues
- Senior level executives and elected councillors
- External partners – e.g., NHS

The research team will collaborate with local partners to link the focus groups to existing (planning) meetings, forums and/or networks to facilitate ease of attendance for participants. The research team anticipates up to 20 people will be involved in focus groups and interviews. While WP2 will mostly inform the sample, a flexible approach to sampling via snowballing will enable the research team to recruit participants as it learns from other sources who to interview to assess the impact of the posts.

WP4: cost and impact analysis

WP4 mostly involves the analysis of administrative data on post costs and qualitative data collected through WP2 and 3. A separate sample and recruitment strategy is, therefore, not required. However, the research team will reserve the option of inviting some stakeholders for re-interview if insufficient data on the economic dimensions of the posts has been collected during earlier WPs.

7. DATA COLLECTION METHODS

WP1: typology of posts for delivering healthier places
WP1 will deploy qualitative methods, drawing upon (i) desk-based research, (ii) interviews with key stakeholders with expertise in the design and implementation of the posts nationally, and (iii) stakeholder meetings to refine the typology:

- (i) Extensive desk-based research will be undertaken to identify the types of posts that exist to support the delivery of healthier places. Secondary data will be collected from academic and grey literature to establish: the key characteristics of the posts, post aims, core activities, reported impact and outcomes, the similarities and differences between varied posts, and whether posts are located within planning or PH departments.
- (ii) Interviews will be conducted with key stakeholders with expertise of the posts nationally, either working as a postholder or a senior manager. The interviews will explore the reasons behind establishing and the posts and different post designs, including the business case developed during the inception of the posts, influencing factors, expectations, key considerations and stakeholder involvement. The experience of the post holders/senior managers in supporting the delivery of healthier places will be explored, as well as the anticipated impacts and outcomes, what works and does not work, and what learning can be drawn from these experiences. The interviews will take place online via Microsoft Teams at times suitable for the research participants.
- (iii) Stakeholder meetings will be held with the key external stakeholders for the research team to present the typology, and to refine the typology as necessary based on the engagement with the external stakeholders. The stakeholder workshops will take place online via Microsoft Teams. With permission, the workshops will be recorded to provide a reference point for the research team to refer to after the meetings when making final refinements to the typology.

WP2: understanding the posts from the perspective of the core team
WP2 will use qualitative methods to obtain the core teams' perspectives on the posts. With permission, the activity mapping workshops will be recorded and transcribed. We anticipate 2X workshops for each core team, such that four workshops will be held across the two case study sites. The core team will be prompted for their views on what activities are most impactful and what impact looks like. The aim will be to uncover insight into real-world examples that demonstrate impact while enablers and barriers to impact will also be discussed. The core teams will also be asked to identify potential stakeholders/beneficiaries, as this will inform sampling in WP3.

Qualitative interviews will be undertaken with 1x postholder at the mid- and end-points in each case study site. Postholders will also have the option of completing impact diaries if they think these would be helpful to capture impact. The diaries will include various prompts to guide postholders' observations, for example a prompt to describe the activity and a prompt to describe the impact of the activity. It is anticipated that the interviews and diaries will build on prior knowledge to establish more fully what can be achieved via 'hybrid' posts and barriers/enablers to impact.

WP3: local stakeholder perspectives on the posts and impact assessment
WP3 will use qualitative interviews and focus groups with key local stakeholders to explore their experiences, perceptions and opinions relating to the hybrid posts. A minimum of two focus groups will be undertaken with planners, with further focus groups arranged when the research team deems them to be necessary. Interviews will be offered to those who are unable, or do not wish to attend a focus group. The questions will focus on how the local stakeholders have found interacting with postholders, impact/outcomes linked to post activities that they may have found beneficial, wider organisational value and benefit, but also what might be done differently to achieve greater impact locally.

Documentary analysis of relevant policy, planning and administrative (e.g., minutes) documentation will support the assessment of impact and outcomes in both sites (for example, HIAs before and after post implementation; neighbourhood plans etc.). This will also provide a basis to assess the impact/outcomes of the hybrid posts.

WP4: cost and impact analysis
Local partners at OCC and BMK will provide data on resource use and budgetary information for WP4: to preserve confidentiality, we will not report information on salaries but rather generic costings for post grades. Qualitative data collected through WP2 and 3 that is relevant to economic considerations of value will also be extracted for analysis.

8. DATA ANALYSIS STRATEGY

WP1: typology of posts for delivering healthier places
Secondary data stemming from academic and grey literature will be analysed as part of the desk-based research. The established criteria outlined above under data collection and methods will be used as a framework to guide the documentary analysis.

Framework analysis (Gale et al., 2013) will be utilised to organise and analyse interview data, using a combination of NVivo software, Microsoft Excel and Microsoft Word. The framework analysis will enable the identification, analysis and reporting of themes in the data, which will be considered alongside the qualitative data from other WPs. Group theorisation sessions will be held to reflect on the data and draw out implications for the typology.

WP2: understanding the posts from the perspective of the core team
Qualitative data gleaned from the activities mapping workshops and postholder interviews/diaries will also be analysed using framework analysis (Gale et al., 2013). NVivo software, Microsoft Excel and Microsoft Word will be utilised at appropriate time points to organise and analyse the data. Joint coding and data checking will ensure trustworthiness during the analysis stage while group theorisation will be facilitated by the sharing and discussion data summaries. We will summarise the data into themes, as with other WPs.

WP3: local stakeholder perspectives on the posts and impact assessment
Framework analysis (Gale et al., 2013) will again be used to identify, analyse and report themes in the qualitative data and documentary analysis. WP3 themes will be considered alongside the themes generated through WP1 and 2 and may be integrated once all data is collected: for example, there may be a cross-WP theme on the outcomes of the posts. Group theorisation sessions will be held at all stages to enhance reflexivity by bringing multiple perspectives into the analysis. The logic model (see Figure 1, above) will be continuously refined, based on what we find out about activities, impact/outcomes and contextual moderators.

WP4: cost and impact analysis
The resource use and budgetary information analysis will describe the overall total budget, setup costs, annual and running costs and what proportion (and percentage) of costs are allocated to different activities. In addition, the qualitative cost analysis will extract, analyse and summarise qualitative data that is pertinent for assessing the economic value of the posts. We anticipate that describing the resources and costs in this way will assist with wider decision-making and prioritisation for local governments considering options for supporting the delivery of healthier places.

9. ETHICAL AND REGULATORY CONSIDERATIONS

a. Research Ethics Committee (REC) and other regulatory review & reports

The research will seek ethical approval from LSBU's University Ethics Panel (UEP) as required. This oversight will include the study protocol, safeguarding standard operating procedures, and all participant facing documentation. A favourable opinion will be secured before any data collection occurs. Any adverse events will be reported to the above bodies.

All research will be conducted in line with LSBU ethics committee code of conduct for research involving human participants and the British Psychological Society's ethical guidelines. These guidelines include principles of holding participants' rights and dignity, anonymity, and freedom to choose to participate or not.

Research will also be conducted and reviewed in compliance with General Data Protection Regulation (GDPR), or replacement legislation and all data will be managed in line with the PHIRST South Bank Data Management plan. A collaboration agreement will be put in place between LSBU and BMK and Oxfordshire County Council and permission secured from service users and providers before any user data is shared.

Participant recruitment will only commence once LSBU ethics approval is in place. Participation information sheets will be emailed to all participants at least 24-hours before any interview or focus group to allow informed consent to take place. All data will be anonymised appropriately and those data requiring transcription will be transcribed using an LSBU approved transcription service.

Each work package presents risks, outlined in the table below with strategies to mitigate the risks.

b. Assessment and management of risk

Table 3: Risk register

Key risk	Likelihood	Impact on participants	Impact on project	Mitigation
WP1: Recruitment for interviews and stakeholder workshops	Low	N/A	Moderate	Contact potential participants early, be flexible to participants' schedules and maintain ongoing communication and collaboration with case study sites. Utilise online/remote methods for conducting interviews should recruitment/availability inhibit face-to-face engagement.
WP2: Recruitment for activity mapping workshops, interviews and diaries	Low	N/A	High	Engage with local partners early, be flexible to their schedules and maintain ongoing communication and collaboration with case study sites Utilise online/remote methods for conducting interviews should recruitment/availability inhibit face-to-face engagement.
WP3: Recruitment for interviews and focus groups	Low	N/A	Moderate to high	Contact potential participants early, be flexible to participants' schedules and maintain ongoing communication and collaboration with case study sites. Utilise online/remote methods for conducting interviews/focus groups should recruitment/availability inhibit face-to-face engagement. Early engagement with key stakeholder "gatekeepers". Provide brief and regular updates.
WP4: Availability of cost and budgeting data and whether the qualitative data collected in WP is	Low	N/A	Moderate to high	Maintain ongoing communication and collaboration with case study sites. Ensure ongoing discussion between WP leads to ensure

sufficient for a qualitative impact analysis				sufficient data for a qualitative impact analysis is collected.
Overall risks:				
Operational risk: Sensitivities may arise from individuals feeling their performance is being evaluated	Low	High	High	This requires careful communication of the evaluation process within local authorities to mitigate any potential operational disruptions or conflicts. All research outcomes and conclusions will be unconnected to individuals' performance and will only focus on the underlying existence of the postholders' roles. The research team will avoid comments on individual performance and not comment on individual postholders' areas of excellence or areas of underperformance, should these occur.
Potential for bias or subjectivity in perceptions of success by postholders and stakeholders.	medium		high	Researchers will serve as the independent evaluators. We will establish clear evaluation criteria, ensuring objectivity and focusing on the evaluation of the activities rather than individuals. Additionally, we are employing multiple evaluation methods to enhance the comprehensiveness and reliability of the evaluation.
Data Security and Privacy Risk:	low	High	High	A data management and protection plan is in place
Changing Priorities due to General Election	High	High	Moderate	Early general elections may cause delays and change priorities in the local government/s. However, we have the NIHR funding commitment until July 2025 and the support of the two leads to completion
changes of key personnel	Medium	High	medium	The contract agreement details the commitment of all parties to deliver on this project beyond personal changes

c. Amendments

Amendments to the protocol will be directed to the PHIRST South Bank Centre Executive Committee for approval and where necessary to the LSBU HSC research ethics committee. All revisions will be submitted to NIHR for approval.

d. Peer review

This protocol will receive a proportionate review by PHIRST South Bank and the NIHR.

e. Patient & Public Involvement

PHIRST South Bank has an annually reviewed Patient and Public Involvement and Engagement strategy which commits to delivering research and evaluation outputs that are representative of the

target populations of PH interventions, as well as those who are seldom heard. Our approach to PPIE is informed by the UK Standards for Public Involvement (PISDP, 2019) and ensures systems are in place to embed PPI within the three layers of the Centre structure: the Advisory Committee, the Centre Executive Committee and at the project level in the delivery of each evaluation.

The co-production workshops were attended by PHIRST South Bank PPIE Co-Investigator, Helen Cherry, who through this process was able to feed into the development of evaluation questions and design. We have recruited a panel of interested residents from both OCC and BMK to guide the future development and delivery of the evaluation. We will offer opportunities for various methods of involvement, and the local PPI panel will meet at regular intervals throughout the evaluation period, contributing to areas such as:

- Review and feedback on lay summaries to make sure content and language is appropriate and accessible.
- Review and provide feedback on participant information sheets to ensure content and language is appropriate and accessible.
- Discuss the content and wording of data collection tools to make sure the content and language are appropriate and accessible.
- Consider and discuss recruitment strategies to promote inclusivity and maximise engagement.
- Discuss qualitative data collection methods for WPs 2-4 with aim to maximising engagement.
- Discussing emerging findings to identify meaningful insights.
- Co-develop the dissemination plan and possibly engage with dissemination if available/willing.

PPIE panel engagement will be via direct communication, both on an individual and group level, digitally and face-to-face (e.g., emails, MS Teams video calls, FGDs). Individual reviews will also be conducted with panel members to ensure they are fully supported and have an opportunity to feed back to us about our processes and procedure.

f. Data protection and participant confidentiality

Where data is collected on third-party data collection platforms outside of LSBU, data will be pseudo-anonymised where possible at the point of download, and the third-party copy of the data deleted. All data will be kept in an anonymous or pseudo anonymous format and stored on LSBU secure servers. Confidential files will be encrypted/ password protected and passwords shared separately from files.

Where data is offered to online repositories (see Dissemination, below), it will be rendered fully anonymous prior to upload. Anonymised data may be stored indefinitely with participant consent. All information which is collected during the research will be kept confidential by using password protected computerised records. All written transcripts will be kept in a secured locked filing cabinet, when not in use. Any information regarding participants that is shared with others (for instance in reports, publications or shared with a supervisor) will also have pseudonyms used, which will prevent the identification of people involved in the study. All data will be secured in a locked filing cabinet for as long as required for the duration of the study and will then be destroyed 18 months after the completion of the evaluation.

g. Indemnity

Indemnity will be provided by LSBU for the research activity undertaken by its staff.

10. DISSEMINATION POLICY

LSBU will own foreground intellectual property (IP) arising from the project, including the final dataset(s) and transcripts. Data will be made available as a 'public good' for secondary analysis if appropriate (see below). Details of IP ownership and usage rights will be finalised in the collaboration agreement between LSBU and OCC and BMK

Key research outputs will include:

1) Interim report of findings, if useful to partner
2) A final report for the OCC and BMK teams, also lodged on the PHIRST website
3) Peer review journal articles, also lodged on the PHIRST website
4) Briefing and dissemination to relevant local and national stakeholders
5) An accessible final summary (e.g., infographic, animation) to be signposted to on social media and other online platforms and hosted on the PHIRST website.

We will offer a workshop event in which the study findings will be presented to the team including the postholders, and other meetings on an ad-hoc basis as required. We may also present findings to the wider PH professional community (e.g., neighbouring councils' PH teams) at conferences and through briefings.

Members of the team, including our Evaluation and Impact Manager, will work with stakeholders to support the implementation of the evaluation findings and recommendations.

11. MILESTONES

STAGE	ACTIVITIES	DATES
Inception	a) Introductory meetings	10/01/2024
	b) Identification of project team	24/01/2024
	c) Workshop 1 - Understanding the intervention	4/02/ 2024
	d) Identification of local stakeholder group	4/02/2024
	e) Workshop 2 - Understanding the theory of change	27/02/ 2024
	f) Workshop 3 - Agreeing a design	20/03/2024
	g) Evidence scoping	March to May 2024
	h) Local PPI recruitment	April to May 2024
	i) Presentation of draft protocol to the local stakeholder group	04/04/ 2024
	j) Design and protocol development	April to May 2024
	k) Presentation of draft protocol to PPIE group	29 April 2024
	l) PPIE feedback	8 May 2024
	m) Protocol Submission	13/05/2024
	n) Research Registration	13/05/2024
	o) Collaboration Agreement	June to July 2024
	p) Ethics application	May to June 2024
	q) Data collection tool development (all work packages)	May to June 2024
	r) Data collection tool piloting	Aug to Sep 2024
Data collection	**WP1:** desk research (June to Sept); stakeholder interviews (Sept to Dec); stakeholder workshops (Feb to April)	June 2024 to May 2025
	WP2: 2x activity mapping workshops (Sept/Oct) in each case study site; postholder diaries (Sept to Feb); postholder interviews at midpoint (Nov) and endpoint (Feb)	Sept 2024 to Feb 2025
	WP3: interviews and focus groups with local stakeholders (Oct to Feb); document collection (Oct to Feb)	Oct 2024 to Feb 2025
	WP4: local partner to provide cost and budgeting data (Aug); WP2 and 3 to be reviewed continuously to ensure relevance to WP4 aims (Sept to Feb); possible re-interviews if required (Feb to March)	Aug 2024 to March 2025
Data analysis	**WP1:** desk research analysis (June to Sept); stakeholder interviews analysis (Dec to March); stakeholder workshop analysis (April to May)	June 2024 to May 2025
	WP2: activity mapping data, postholder diary and postholder interview data analysis (October to May)	Oct 2024 to May 2025
	WP3: local stakeholder interview and focus group data analysis (Oct to May); documentary analysis (Oct to May)	Oct 2024 to May 2025
	WP4: cost impact analysis (Jan to May)	Jan to May 2025

Project management & Reporting	a) Local PPI meetings	May 2024 to Sept 2025
	b) PPI feedback and impact monitoring	Every 4-6 weeks
	c) Reporting to stakeholder group	Every 4-6 weeks
	d) Project management meetings	Every 4 weeks
	e) Scope dissemination options	Aug 2024
	f) Interim findings presentation to Project Stakeholder Group and PPIE panel	Jan/Feb 2025
	g) Finalise dissemination plan	Feb to July 2025
	h) Internal dissemination	May to July 2025
	i) Final report	End of July 2025
	j) Programme of national dissemination	July to Dec 2025
	k) Academic publications	Dec 2025

11. REFERENCES

Barton, H., Grant, M., 2006. A health map for the local human habitat. J. R. Soc. Promot. Health 126, 252–253. https://doi.org/10.1177/1466424006070466

Bird, E.L., Ige, J.O., Pilkington, P., Pinto, A., Petrokofsky, C., Burgess-Allen, J., 2018. Built and natural environment planning principles for promoting health: an umbrella review. BMC Public Health 18, 930. https://doi.org/10.1186/s12889-018-5870-2

Burgoine, T., Forouhi, N.G., Griffin, S.J., Wareham, N.J., Monsivais, P., 2014. Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study. BMJ 348, g1464. https://doi.org/10.1136/bmj.g1464

Carmichael, L., Barton, H., Gray, S., Lease, H., 2013. Health-integrated planning at the local level in England: Impediments and opportunities. Land Use Policy, Themed Issue 1-Guest Editor Romy GreinerThemed Issue 2- Guest Editor Davide Viaggi 31, 259–266. https://doi.org/10.1016/j.landusepol.2012.07.008

Carmichael, L., Barton, H., Gray, S., Lease, H., Pilkington, P., 2012. Integration of health into urban spatial planning through impact assessment: Identifying governance and policy barriers and facilitators. Environ. Impact Assess. Rev. 32, 187–194. https://doi.org/10.1016/j.eiar.2011.08.003

CCHC, 2022. What creates healthy cities? Comm. Creat. Healthy Cities.

Chang, M., Grant, M., Green, L., Madigasekera-Elliot, L., Williams, C., 2022a. Building the Future Generations of the Public Health Spatial Planning Workforce: Translating Healthy Places Policies into Reality. ISOCARP Rev.

Chang, M., Green, L., Petrokofsky, C., 2022b. Public Health Spatial Planning in Practice: Improving Health and Wellbeing. Bristol Bristol Univ. Press.

Coombes, E., Halliday, E., Spiliopolis, J., Holt, V., 2024. Building and facilitating system capability to create healthy environments: A qualitative process evaluation. Res. Brief. PHIRST LiLaC.

Craig, P., Campbell, M., 2015. Evaluability Assessment: a systematic approach to deciding whether and how to evaluate programmes and policies. What Works Scotl.

DLUHC, 2024. Planning practice guidance. Dep. Levelling Hous. Communities.

DLUHC, 2023. National Planning Policy Framework. Dep. Levelling Hous. Communities.

Gale, N.K., Heath, G., Cameron, E., Rashid, S., Redwood, S., 2013. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Med. Res. Methodol. 13, 117. https://doi.org/10.1186/1471-2288-13-117.

Guglielmin M, Muntaner C, O'Campo P, Shankardass K. A scoping review of the implementation of health in all policies at the local level. Health Policy. 2018 Mar;122(3):284-292. doi: 10.1016/j.healthpol.2017.12.005. Epub 2017 Dec 20. PMID: 29305241.

Halliday, E., Ward, F., Coombes, E., Collins, M., Barr, B., 2022. Building and facilitating system capability to create healthy environments in East Sussex and Southampton: a qualitative process evaluation - A protocol. PHIRST LiLaC.

Hawe, P., 2015. Lessons from complex interventions to improve health. Annu. Rev. Public Health 36, 307–323. https://doi.org/10.1146/annurev-publhealth-031912-114421

Ige-Elegbede, J., Pilkington, P., Bird, E.L., Gray, S., Mindell, J.S., Chang, M., Stimpson, A., Gallagher, D., Petrokofsky, C., 2021. Exploring the views of planners and public health practitioners on integrating health evidence into spatial planning in England: a mixed-methods study. J. Public Health 43, 664–672. https://doi.org/10.1093/pubmed/fdaa055

Lake, A.A., Henderson, E.J., Townshend, T.G., 2017. Exploring planners' and public health practitioners' views on addressing obesity: lessons from local government in England. Cities Health 1, 185–193. https://doi.org/10.1080/23748834.2017.1393243

Lilly, K., Kean, B., Hallett, J., Robinson, S., Selvey, L.A., 2023. Factors of the policy process influencing Health in All Policies in local government: A scoping review. Front. Public Health 11, 1010335. https://doi.org/10.3389/fpubh.2023.1010335

Marmot, M., Wilkinson, R.G., 2009. Social patterning of individual health behaviours: the case of cigarette smoking. Oxf. Oxf. Univ. Press 0. https://doi.org/10.1093/acprof:oso/9780198565895.003.11.

Mills, T., Lawton, R., Sheard, L., 2019. Advancing complexity science in healthcare research: the logic of logic models. BMC Med. Res. Methodol. 19, 55. https://doi.org/10.1186/s12874-019-0701-4

Mills, T., Shannon, R., O'Hara, J., Lawton, R., Sheard, L., 2022. Development of a 'real-world' logic model through testing the feasibility of a complex healthcare intervention: the challenge of reconciling scalability and context-sensitivity. Evaluation 28, 113–131. https://doi.org/10.1177/13563890211068869

NHSE, 2018. Putting Health into Place Introducing NHS England's Healthy New Towns programme. NHS Engl.

Ogilvie, D., Cummins, S., Petticrew, M., White, M., Jones, A., Wheeler, K., 2011. Assessing the evaluability of complex public health interventions: five questions for researchers, funders, and policymakers. Milbank Q. 89, 206–225. https://doi.org/10.1111/j.1468-0009.2011.00626.x

PHE, 2019. Spatial Planning and Health Getting Research into Practice (GRIP): study report. Public Health Engl.

PHE/LGA, 2016. Local wellbeing, local growth. Public Health Engl. Local Gov. Assoc.

PISDP, 2019. UK Standards for Public Involvement: better public involvement for better health and social care research. UK Public Involv. Stand. Dev. Partnersh.

Skivington, K., Matthews, L., Simpson, S.A., Craig, P., Baird, J., Blazeby, J.M., Boyd, K.A., Craig, N., French, D.P., McIntosh, E., Petticrew, M., Rycroft-Malone, J., White, M., Moore, L., 2021. Framework for the development and evaluation of complex interventions: gap analysis, workshop and consultation-informed update. Health Technol. Assess. 25, 1–132. https://doi.org/10.3310/hta25570

Stake, R., 2006. Multiple Case Study Analysis. Guilford Press, Guildford.

WHO, 2024. Promoting Health in All Policies and intersectoral action capacities [WWW Document]. World Health Organ. URL https://www.who.int/ (accessed 4.1.24).

Yin, R., 2017. Case Study Research and Applications: Design and Methods. Sage Publications.

Zhong, J., Liu, W., Niu, B., Lin, X., Deng, Y., 2022. Role of Built Environments on Physical Activity and Health Promotion: A Review and Policy Insights. Front. Public Health 10.