PHIRST Light

NIHR | Public Health Intervention Responsive Studies Teams

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Housing and Wellbeing Coordinators in East Sussex County Housing - Evaluation Protocol

Project Summary

Study Title	Evaluating the Role of Housing and Wellbeing Coordinators in East Sussex County Housing
Local Authority	East Sussex County Council
Planned study period	14 months
Research aim/s	Our primary aims are to evaluate the effectiveness, fidelity and implementation of the ESWE service. We will also conduct an economic evaluation of the service.
Study Methods	Mixed methods, including health economics analysis
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Local Authority Contributors	Dr Joanne Bernhaut - Consultant in Public Health Katie Dawkins - Housing and Homelessness and Community Wellbeing Lead Daniel Eade - Senior Specialist Advisor: Homelessness Prevention Hub -Lewes District and Eastbourne Borough Council Hollie Gerrish - Team lead, East Sussex Wellbeing and Employment
Funder	National Institute for Health and Care Research (NIHR) Award ID: 135190
Protocol version number and date	V1.5 6th June 2023

Plain English Summary

The East Sussex Wellbeing and Employment Service (ESWE) was initiated in June 2021 to provide individualised wellbeing support for people with various degrees of complex needs that are at risk of becoming homeless or are currently homeless. By providing wellbeing coaching focused on individualised needs the ESWE is hoping to address the significant economic burden to health care and emergency and temporary accommodation within the housing services, as well as making sure that customers received the support they need according to their wellbeing and housing status.

We will be using a developmental evaluation approach to facilitate improvements in how the ESWE service is delivered so that wellbeing coordinators can provide better care for their customers, and we can understand if the service is value for money in the long term.

Therefore, our main aims are to provide answers to the following questions:

- What is the impact of the ESWE service on customers wellbeing?
- How is this service experienced by customers?
- To what extent are behaviour change techniques used during coaching sessions?
- How is the service being delivered, what works well and what needs to improve?
- Is the service value for money?

What we are doing

To support this developmental evaluation approach, we will be setting up a group called the "Learning and Development" (LD) working group. This group will include a variety of people including three members of different departments from the local authority, two public contributors and two members of the research team. This group will monitor and guide the implementation of the evaluation to detect any changes to the service or the local service delivery context for them to be assessed and acted on, if necessary, in a timely fashion. Therefore, the LD working group will provide guidance on how to, when to and who to ask questions, what new data is required and where this could be found.

As part of this evaluation, we will use different methods to answer the questions above. These will include surveys, focus groups, interviews, observations, local authority and ESWE records across a 12-month period.

Findings from this evaluation will be communicated widely using a variety of methods through the PHIRST-Light team and the local authority. A formal dissemination plan will be guided by the LD working group.

Contents

1. Evaluation details

1.1 Full evaluation title

Housing and Wellbeing Coordinators in East Sussex County Housing Teams

1.2 Funding

This evaluation is supported by the National Institute for Health and Care Research (NIHR) PHIRST initiative (Public Health Research funding stream).

Funders reference: **NIHR135190**

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2. Background

2.1 Overview of intervention to be evaluated and contextual information.

The service and the specific problem being addressed.

The East Sussex Wellbeing and Employment Service (ESWE) commenced on 7th June 2021 with the aim of providing a seamless county wide service across the 5 districts and boroughs of East Sussex (Eastbourne, Hastings, Lewes, Rother and Wealden). The project is partly funded by Public Health, and partly by Eastbourne Borough and Lewes District Councils. The service was created to:

- **Fill a gap in the provision of wellbeing support using a holistic perspective** to address people's wellbeing, housing and employment needs.
- **Address the lack of wellbeing coaching** support to guide people at risk of or currently homeless throughout the system.
- **Improve** tailored case worker support.
- Address the significant **economic burden** to health care and emergency and temporary accommodation housing services.

The overall aim of the ESWE service is to provide tailored wellbeing coaching for customers[1]. Secondly, it aims to contribute to an integrated service that connects people to existing services according to customers' wellbeing needs, including opportunities for skills development and employment.

This service has been designed to support people (customers) at risk of becoming homeless or who are homeless OR people that have submitted a homelessness application to the East Sussex County Council over the last 12 months. The service is offered to residents (aged 18 years or over) with low, medium, and high levels of need.

Once customers are referred into the service by their local housing officer (which could be at any point of their homelessness journey), a wellbeing coordinator (WBC) will use a collaborative approach, core behaviour change and motivational interviewing techniques to develop a personalised wellbeing plan (PWP) with the customer. The customer and the WBC will set and agree specific SMART goals to build the person's ability to manage their own wellbeing and life needs. This plan might also involve other

[1] Customer, referring to the person using the service, is the preferred term by the service providers.

partner organizations for further specialist support, and it is supported by the use of the Homelessness Outcome Star (HOS) to understand and track the customer's wellbeing journey.

The ESWE service is grounded in four pillars of support. These are:

- Physical and mental health,
- Social Isolation,
- Lifestyle Behaviours,
- Employability and upskilling.

Currently, the ESWE service involves a team of four WBC and one team leader, all of whom were previously employed by One You East Sussex and are co-located within each of the five East Sussex local authority housing needs teams. This new service is hosted by Eastbourne Borough Council and the WBC Lead reports directly to the senior specialist advisor for the new Homelessness Prevention Hub in Lewes District and Eastbourne Borough Council.

In the annual review submitted in June 2022, the ESWE team reported that the service had received 196 referrals from across the five districts (Eastbourne, Hastings, Lewes, Rother and Wealden). These included customers with low (61%), medium (31%) and high (8%) levels of need, with a similar split between men (45%) and women (55%) and covering an age range between 18 and 71 years of age. Since then, the number of referrals has increased significantly (N=393, with 94 active cases currently). This increased in demand could be linked to a number of contextual factors such as:

- The cost-of-living crisis and more people losing their homes.
- Courts "catching-up" with their back log of cases since the start of Covid-19 pandemic, resulting in more tenants likely to be evicted from their properties.
- Increased awareness of the housing officers of the ESWE service.

Thus, the ESWE team is undertaking an internal review to better integrate the service across the five districts and boroughs, to improve the triaging process for the customer to receive the right support according to their needs and to increase their focus on prevention to avoid further deterioration of customer's wellbeing.

Review of existing evidence and societal context of homelessness

Homelessness is an umbrella term that varies by social, geographical, and cultural context. Within the UK specifically, homelessness is defined within the Government's Code of Guidance as a person having "no accommodation in the UK or elsewhere which is available for their occupation and which that

person has a legal right to occupy" (Ministry of Housing, Communities & Local Government; 2018). Included within this definition are a range of potential forms of homelessness beyond rough sleeping. These include a lack of legal right to occupy accommodation, inability to secure entry into accommodation, or being at risk of domestic violence or abuse (Ministry of Housing, Communities & Local Government; 2018a). Although the exact prevalence of homelessness can be difficult to estimate, 24 of the 28 European Union countries report increased homelessness over the last decade (European Social Policy Network, 2019).In the UK a 169% rise in the number of people sleeping rough was observed from 2010 to 2022 (UK Government, 2022a), with an estimated 2,900 people were sleeping rough across England alone (UK Government, 2022b).

Homelessness is a complex social and public health phenomenon. Poverty, poor physical and/or mental health, lack of educational and social support, e abuse and history of incarceration all contribute to increased risk of homelessness. Important bidirectional links exist between poor quality social environments, health behaviours, and health status for those experiencing poverty and homelessness (Watson, Crawley & Kane, 2016). Health outcomes for individuals who are homeless are significantly worse than those of the general public. In 2021 data from the Office for National Statistics (ONS, 2022) suggested that the mean age of life expectancy for men and women who are homeless was 45 years and 43 years, respectively in England and Wales (ONS, 2022). This is over 30 years lower than the general population (ONS, 2022). Data from a UK representative sample showed 63% of people experiencing homelessness had a long-term illness or disability, whilst 82% had previously received a mental health diagnosis (Homeless Link, 2022). Thus, many individuals who become homeless have multiple long-term health conditions.

Studies have demonstrated that beyond health outcomes, factors such as feeling safe, connected to others, and feeling included within society are key predictors of wellbeing in the homeless population (Thomas & Gray, 2012). Qualitative data shows that engaging in social activities alongside retaining a sense of purpose are consistently linked to wellbeing in a recently housed population (Dunleavy et al., 2014). Whilst accommodation security is central to wellbeing, experiences of social isolation and exclusion also play key roles in the wellbeing of homeless individuals. Importantly, permanent supportive housing interventions do not appear to improve wider wellbeing factors such as psychiatric symptoms, substance use, income or employment outcomes above those of usual social care services (Aubry et al., 2020).

In April 2018, the Homelessness Reduction Act 2017 come into effect, creating new requirements for local authorities to assess, prevent, and relieve homelessness. Although not everyone will be provided

with immediate access to accommodation, anyone who is eligible is entitled to access assistance and advice through their local authority. In addition, the Act introduced requirements for various public organisations across the justice, defence, and health and care sectors to refer individuals who are homeless or at risk of becoming homeless to a local authority support team of the individual's choosing (Wilson & Barton, 2019). At around the same time, the Rough Sleeping Strategy was published in 2018 with the aim of eradicating rough sleeping by 2027 (Ministry of Housing, Communities & Local Government; 2018b). Although ensuring adequate provision of secure accommodation is integral to this strategy, the determinants of homelessness are complex and therefore require broader approaches to support general wellbeing in this population.

3. Working in partnership

Partnership working is a core feature of the PHIRST initiative and will be incorporated throughout our evaluation. This evaluation has been co-designed by the PHIRST Light team with East Sussex County Council, and local partners and stakeholders, including service users. Stakeholders will continue working together to deliver and disseminate the evaluation through frequent communication and consultation, in the form of co-production workshops.

3.1 Public contribution

The PHIRST Light research team are committed to ensuring public voices are included throughout the entirety of each evaluation, with an additional emphasis on capacity building for effective and inclusive public contribution within local authorities. Following the principles promoted by the National Institute for Health and Care Research (NIHR) on patient and public involvement (PPI), The PHIRST-LIGHT team have established an overarching Public Advisory Group (PAG) comprising members of the public and local authority service users. All PPI activities are monitored by the PAG, which is co-ordinated by our PPI (Pam Rees) and academic PPI (Dr Jo Morling) leads.

East Sussex Public Advisory group (ESPAG)

In addition to the PAG, we have supported the East Sussex team to form a project specific PPI group to advise on and assist with the evaluation design and delivery. The East Sussex Public Advisory Group (ESPAG), which will be coordinated by two members of the PAG, comprises three service users with lived experience of homelessness, two charity representatives, three service providers and one

community link worker. The 9 members of the ESPAG will provide their perspective on core facets of the evaluation, such as the research methodology and questions through to dissemination planning, to ensure it is relevant and accessible to service users and the wider public. Members of the ESPAG will also be included as key stakeholders throughout the co-production process.

As part of this co-production process, a plain English version of project documents, including different versions of the logic model were shared with the ESPAG members, in different online sessions between November 2022 and March 2023. These sessions included ESPAG specific seminars and three wider stakeholder events, one in November 2022, a second one in February and one in March 2023. The logic model, research aims, objectives and methodology for this study were discussed with participants and refined in response to their feedback.

The main amendments to the logic model resulting from these interactions were:

- The identification of a wider range of barriers at the system and individual level and suitable activities the local authority needs to implement to overcome those barriers.
- A redefinition of the outputs as impacts in the short, mid-, and long term to capture the customer journey and the ever-changing environment of the local authority.
- Greater focus in addressing the needs of the customer and building capacity towards individual independence.

4. ESWE service logic model.

The logic model has been developed by the East Sussex evaluation working group, which includes a core team of researchers from PHIRST-Light, the core team of representatives from the East Sussex local authority (one consultant in Public Health East Sussex, the Housing Needs and Allocations Lead for Eastbourne Borough Council, a Senior Specialist Advisor from the Homelessness Prevention Hub and the East Sussex Wellbeing and Employment Service team lead) and members of the East Sussex Public Advisory Group (ESPAG) . The group have engaged in regular discussions to refine the aims of the study and the service activities of interest. Further input was sought from the wider stakeholder group (including representatives from across the five districts) during three stakeholder events. A core output of this collaborative work has been the logic model (appendix 1), which sets out the inputs, resources, activities of interest, barriers and facilitators, and expected impacts of the ESWE service in the short, mid- and long-term.

5. Key evaluation aims, objectives and research questions.

5.1 Evaluation aims and objectives.

Building on the insight from the review of the l evidence, and the numerous discussions with the local authority, stakeholders and ESPAG members, the overarching aim of this evaluation is to understand how effective the ESWE service is at meeting the wellbeing needs of customers who are homeless or at risk of homelessness according to their levels of need. Secondly, we will assess if the ESWE service is value for money.

To address these aims four main themes and research questions have been identified:

Theme	**Research question**
Effectiveness	What is the impact of the ESWE service on customers wellbeing? And how is this service experienced by customers?
Fidelity	To what extent is motivational interviewing and goal setting delivered during the coaching sessions?
Implementation	How is the service being delivered and what works well and what needs to improve?
Economic evaluation	Is the ESWE service value for money?

Further subthemes and secondary research questions underpinned by the Consolidated Framework for Implementation Research (CFIR) have been described below.

Theme	Sub-theme	Secondary research question
Effectiveness	Knowledge	Do customers know about the Homelessness Outcome Star (HOS)? and how do they feel it helps them achieve their goals?
	Opportunity	How do customers experience the goal-setting process? And do they have access to sufficient resources to meet their goals?
	Capability	Do customers feel that this service increases their ability and confidence to find the support they need independently?
Fidelity	Skills, capability, and knowledge:	How are motivational interviewing (MI) and behaviour change techniques delivered during the coaching sessions by the Wellbeing Co-ordinators (WBC)? and are they delivered according to the accepted principles and practice? How is the complex needs rating system understood by WBCs?
Implementation	Integration, connection and communication	To what extent is the service connected to supporting services and how easy is the referral process?
	Need for change	To what extent is this service needed and does it fill a gap?
	Culture and leadership	How supported do WBCs feel by LA and stakeholders to deliver the service? What needs to improve?
	Adoption and service adaptability	To what degree has the service been adopted as it was intended across the different districts?
	Resources	What resources do WBC have available to support their customers? What are the main resources needed from the WBC perspective for the service to be delivered effectively?
Economic evaluation	Cost and benefits to service users	What is the average cost to the customer of the ESWE service? And how much does it benefit the customer?
	Cost of services involved	What is the cost of the WBC according to their case load and their customers levels of need? What is the cost of the service according to the number of service users? And referrals through social prescribing? What is the cost to the service of supporting customers with low, medium and high levels of need throughout their customer journey?
	Cost-effectiveness for society	What are the costs and benefits to society of supporting customers improve their wellbeing measured in money terms?

6. Study design overview

6.1 Methods

Developmental evaluation

As the ESWE service is in its infancy and undergoing continued development, stakeholders, public contributors and the PHIRST-Light team agreed that the evaluation should follow a developmental approach. Developmental evaluation is an iterative approach to programme evaluation that emphasizes innovation and learning. It is a flexible approach to evaluating innovative programmes whilst in their early stages of development and adapting existing programmes to complex and/or changing environments. Developmental approaches require ongoing monitoring for continuous programme improvement and includes frequent communication between evaluators and programme staff (Patton, 2006). Thus, "plan, do, study, act" (PDSA) cycles (NHS, 2022) will be built into the timeline to a) gather data, b) reflect on findings, c) implement changes to the ESWE service implementation processes or the evaluation.

To support with the implementation of the PDSA cycles a Learning and Development (LD) working group will be created. This working small group will involve key people from the PHIRST-Light team, the East Sussex County Council and two public contributors (ESPAG representatives). Discussions within the LD working group will enable the rapid assessment and response to the changes of the service and to help define the timelines of each of the cycles (e.g., 2,3,4 months). The duration of each of the cycles will depend on the complexity of the changes being implemented at the service delivery or implementation level. For the timely assessment of changes, the LD working group will meet on monthly basis to refine the action plans for each of the three working packages:

- Work package 1: Service effectiveness
- Work package 2: Fidelity and implementation
- Work package 3: Economic evaluation

Consolidated Framework for Implementation Research

The protocol will be underpinned by the most recent version of the Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2022). This allows a selected combination of pre-existing implementation theory constructs into a comprehensive theorical framework. The CFIR spans five domains, 1) the innovation, 2) the outer setting, 3) the inner setting, 4) the individuals involved and 5) the implementation process. The interaction between these domains provides a practical guide to systematically assess ‘what works’ or ‘doesn’t work’, ‘where and why’.

The first domain focuses on the innovation (the service itself) being implemented within the context of the local authority. The inner and outer settings comprise the contexts where the implementation process occurs. Changes in the outer setting (local attitudes, i.e., sociocultural values and beliefs; or local conditions, e.g., economic, political, willingness to change; societal pressures etc) can influence implementation of the service and are typically mediated by the inner context (e.g., local authority's culture, resources, communication, engagement). The fourth domain provides constructs to assess the individuals (e.g., WBC, customers, stakeholders, leadership teams) and their roles in shaping behaviour change (i.e., capability, opportunity and motivation). Individuals make decisions and influence others; they can improve and redefine the service. Individuals can impact implementation in important ways, as they carry mindsets and opinions about the service (e.g., they might like it or not, see a benefit or not) and are influenced by interests or cultural norms and practices (Greenhalgh et al., 2004). Understanding how individuals interact with the ESWE service, and the role they play in behaviour change is key.

Lastly, the implementation process domain provides an opportunity to explore the active change at the individual and local authority level. Individuals may become intervention champions (e.g., WBC, customer with success stories), they may actively promote the implementation process. Local authorities may promote the changes themselves, through leadership, changes in culture, or activities strategies to change or adapt practices and processes. The implementation process might include a series of sub-processes, that happen over time at multiple levels within the organisation for an effective implementation.

6.2 Work packages

Work package 1: Service Effectiveness

To address questions relating to programme effectiveness, work package 1 will include quantitative and qualitative data collection. Quantitative data collection currently occurs through the routine collection of:

1. Demographic data – collected at the initial session with the customer, including age, gender, ethnicity and homelessness and employment status.
2. HOS - The HOS measure is completed and reviewed by the WBCs according to customer progression and goal attainment. The HOS is used as part of the customer's personal wellbeing plan (PWP) and is used by the service to track movement in a customer's journey of change (from feeling stuck' and moving through stages to achieve self-reliance) across all nine

domains, including customer motivation, self-care, physical and mental health, and managing money and tenancy administration. It is completed at the initial session and repeated at various time points as determined by individual WBCs.

3. Wellbeing score – WBCs provide an assessment of customer wellbeing across four wellbeing domains: physical wellbeing, mental health, employability, and social connectedness. The use of a 10-point Likert scale provides a total wellbeing score (out of 40) at baseline and at the end of the customer journey.
4. Complex needs rating - Each customer is given a complexity of needs score which is assessed by the WBC at the initial coaching session using subjective ratings (high, medium, and low complexity).

Additional data collection will occur through the administration of scale measures of customer experience and satisfaction following their coaching sessions. Qualitative data collection will centre around semi-structured interviews or focus groups with service customers with both closed and currently active cases. The planned interview guide will draw from core components of the COM-B model of behaviour change, posited by Michie and colleagues (2011). Customers will be asked about their knowledge of the use of the HOS, their thoughts on improved confidence or capability to find support independently, whether they have experienced greater opportunity to access resources and whether their social connectedness has changed over the course of service engagement. Additionally, we will collect qualitative feedback on customer experiences with the HOS and their understanding of the service aims more broadly. These interviews will occur across each developmental cycle, although the interview guide may be modified dependant on feedback from the initial PDSA cycle.

Work package 2: Fidelity and Implementation

Fidelity

A key aspect of the developmental evaluation is understanding how changes to service delivery impact outcomes over the course of each developmental cycle. Our second work package aims to assess provider fidelity of both the MI and goal setting components of the service during each coaching session. To monitor this, WBCs will be asked to complete a checklist of key activities aligned with the MI model and whether they were completed with the customer following each session. Information regarding the use of the HOS will also be collected as part of this checklist. Development of this checklist will occur in collaboration with the ESPAG members and the ESWE service Team lead and the Homelessness Prevention Hub lead to encompass items that are core to the role of the WBCs. The

checklist will then be piloted by WBCs to ensure the content and structure is clear and easy to apply. Additionally, the WBCs will be asked to audio-record the sessions in which the checklist is used. These provider observations will be used to assess the use of MI core techniques and the use of the HOS by the WBCs. Data from the checklist and the observations will be triangulated for a comprehensive assessment of the WBCs' knowledge, capability and skills of behaviour change techniques. The number of checklists and recording WBCs have to complete will be agreed following guidance from the LD working group.

At present, the 'complexity of needs assessment' is completed by the WBCs using subjective ratings. General guidance is provided to WBCs to facilitate these ratings during their induction training, although a formal framework is not currently used. The complex needs rating is used to inform the development of the PWP thus it will be important to determine whether the WBCs have a common agreement of what each of these categories for complex needs (low, medium, high) entail. To understand these criteria, qualitative data will be collected and analysed to determine the factors that impact WBCs subjective ratings. During the first PDSA cycle, WBCs will be asked to score three cases studies, which will be developed in collaboration with the ESWE service team lead (Hollie Gerrish). An inter-rater reliability assessment will be conducted by asking each WBC to read and score the case studies as low, medium or high, and explain why they have decided to provide that score. Results will be discussed with the LD working group and measures will be implemented accordingly (e.g., structured guidance, training, development of a framework, training session). A similar follow-up exercise will be conducted in the second PDSA cycle to assess the impact of any measures that might be implemented.

Implementation

To determine service level factors that might impact service delivery, we will also aim to further explore implementation constructs aligned with the CFIR model (Damschroder et al., 2009), including aspects such as how well integrated and connected the service is to the other support services within the local authority. It is important to understand how well their communication pathways work and how well it aligns with the current service system. As part of the implementation analysis constructs such as culture and need for change, communication, adoption and service adaptability as well as resources needed to implement the service will be assessed. The assessment of these items will occur through multiple channels as agreed by the LD working group for each cycle, including an open-ended survey for WBCs, leadership teams and other stakeholders that aligns with core CFIR domains. The specific content of this survey will be refined and piloted with the ESPAG members. As part of the first

meeting with the LD working group, we will also develop a checklist of questions focused on barriers and facilitators to service implementation. This checklist will be completed at each LD working group meeting and will aim to capture any important changes within the local authority or the service delivery that might have happened over the previous month and that might impact on the delivery of the service. Example of questions might be: have there been any significant changes to the local authority over the last month that might affect the provision of support through the service? Have there been any changes to the local authority or other stakeholders that might affect the implementation of the service? Have there been any main changes to the service delivery over the last month? Are there any actions needed to assess these changes to determine the impact on the service?

Work package 3: Economic evaluation

This work package will be streamlined into three stages:

Costs and benefits to service users

Within the context of the developmental evaluation, a case study will be conducted during the first PDSA cycle to examine data from participants who have already completed their customer journey. This will enable us to understand the costs and the benefits to the individual going through the service. These data will inform the development of a framework for us to develop a full cost effectiveness analysis of the service.

The case study will aim to outline different costs to participants including the costs associated with the number of visits, transport, and other resource use by customers. Standard Health Economics methods for costing will be employed. As the service will create benefits, we will calculate the value of these benefits in money terms. This case study analysis will include exploratory analysis on how primary outcomes can be valued. The aim of this exploratory analysis is to measure and understand the value of these service to the individual. To do so, expert opinion from study stakeholders will be sought, and the suitability of using the three main economic methods for deriving values (revealed and stated preference plus money weights) will be tested. When the costs and benefits are weighed, mean values will be used, but one-way sensitivity analysis will be employed to test the stability of cost-benefit results as the values associated with the primary outcomes are changed. This case study analysis will include data from the customers that have completed their customer journey by the beginning of the first PDSA cycle and represent the wellbeing journey of these customers. The aim of this case study is to measure and understand the value of this service to the individual.

Examples of quantitative data to be included in this case study include routinely collected data such and wellbeing status, HOS records and data from the PWP, as well as average number of visits/interactions between WBC and customer, travel, social prescribing, or support services. Quantitative data will be supplemented and mapped against qualitative data obtained through semi-structured interviews to assess people's experiences of the service and their customer journey. We will use this data to build a spreadsheet, which will set the bases for the cost analysis of the service and cost-benefit to society.

Cost of services involved.

This second piece of work will focus on understanding the cost of the resources used throughout the delivery of the ESWE service. Data extracted from the Inform platform and the local authority records will provide a structure for the development of a dataset to map out resource use at the customer and WBC level. Examples of quantitative resource use data include number of cases, number of service users and referrals, average sessions per customer. Costs will be created by multiplying units of resource use by appropriate national price weights for each service type. The final analysis will consider: (i) the costs of the customer journey, and (ii) the resources used to support and upskill WBC (e.g., continuous professional development). Results from the case study conducted during the first PDSA cycle and semi-structure interviews with WBC's will help identify any other relevant data sources that can be used to support this analysis.

To assess cost-effectiveness for society

The overall objective of this work package is to assess: What are the costs and benefits to society of supporting customers improve their wellbeing measured in money terms? We will use a dataset created to assess the cost of the services, which will use a combination of data from the case study to inform the development of a pilot spreadsheet of resource use and patient outcomes. This pilot database will contain data that represents the customer wellbeing journey in interaction with their WBC. It will also measure resource use and referrals according to levels of need and identify any movement between categories (low, medium, high). The costs and outcome data will be used to measure the costs and benefits to society measured in money terms. Gaps in the database will be identify during the preliminary data analysis and shared with the LD working team to help address those gaps and improve the collection of data by adding new measures OR ensuring standardisation of data collection.

The cost-benefit analysis will be undertaken in an Excel spreadsheet using Visual Basic for Applications (VBA). As in standard practice within health economics, a model will be built with appropriate cost

and outcome inputs, which will be analysed using an economic "engine" to calculate the relationship between costs and benefits. The analysis will be deterministic but will be accompanied by a "one-way" sensitivity analysis. As the cost-effectiveness for society analysis is only a feasibility study, a full probabilistic sensitivity analysis will not be undertaken. As utility data is not collected during the feasibility study, outcomes will be estimated in money terms not Quality Adjusted Life Years. The results will present as incremental costs and benefits versus: (i) do nothing, and (ii) current best practice. Evidence synthesis using data from the relevant literature and expert opinion will be used to estimate the parameters in the model that cannot be calculated from trial data alone. The final structure and results of the model will be presented to the study stakeholders for comments and feedback, which will be incorporated into the final version of the model produced for this feasibility study.

Sample sizes:

Exact sample sizes will be determined by the working and development group prior to each developmental cycle. We plan to collect fidelity and implementation data from all WBCs (n=4) and their manager (n=1) during all cycles. In line with guidance on conducting qualitative studies (Hennink & Kaiser, 2022), qualitative interviews will be conducted with approximately 9-17 customers per cycle, or until data saturation occurs. The research team have identified 28 key stakeholders within primary and partner organisations who will be approached each cycle for feedback on the programme's implementation.

To detect a small effect size (0.2) of change to wellbeing HOS scores between two time points, a sample size of 199 would be required (with 80% power at a 5% significance level). Since initiating the service in 2021, ESWE has received 393 referrals and currently manages 114 active cases. We will have access to a significant proportion of this routinely collected data and thus should have adequate power to detect change and a large sample to draw from for the qualitative interviews.

7. Analysis plans

In line with the PDSA methodology, the following types of analyses will be conducted during each developmental cycle or at the conclusion of the evaluation, as determined by the LD working group. Following analysis, the LD working group will reflect upon the findings and suggest service changes to the ESWE.

Thematic analysis:

All interviews and written qualitative data will be transcribed and analysed thematically and will follow guidance on co-production of data analysis and interpretation (Hickey et al., 2018). During the first phase of analysis, a researcher will conduct a preliminary scan of the data, allowing generation of initial codes for data extraction. The analysis will then be re-focussed to sort and group the codes into analytical categories or themes. A 'constant comparative' method will be used to compare individual data items with the rest of the data, ensuring that the preliminary themes retained importance with additional interviews (Pope et al., 2000). To ensure reliability of the coding system, a second researcher will independently code and compare 20% of the interview transcripts. During the second phase, themes will be refined to ensure data cohere together meaningfully, whilst themes are clear and distinct. Themes will be reorganised and collapsed as required. Finally, a detailed analysis will be conducted for each theme. This process and the subsequent thematic outcomes will be reviewed in collaboration with PAG members and stakeholders, allowing finalisation of the themes. NVivo 11 (QSR International Ltd, Melbourne, Australia) will be used as a data management tool throughout the analysis process.

Quantitative analysis

Descriptive analysis will be performed on all quantitative variables; frequencies and percentages will be presented for categorical variables and means with standard deviations for continuous variables. Changes to HOS scores and categories on each domain over time and between cycles will be analysed through comparative methods, including paired samples t-tests and $\chi 2$ tests. Inter-rater reliability of the fidelity checklists will be calculated using the Krippendorff's Alpha (Hayes and Krippendorff; 2007)

8. Data management

The University of Nottingham will serve as data controller for the wider PHIRST-LIGHT team and will be responsible for data management and data protection processes. A data management plan has been submitted for ethical approval. Interview data will be collected using encrypted recording devices or via GDPR compliant software (e.g., Microsoft Teams). De-identified data will be used for data analysis and will be stored in a shared OneDrive folder, only accessible to research team members. However, certain personally identifiable information will need to be collected as part of the evaluation. All personally identifiable information, such as contact details or video/audio recordings,

will be stored in separate password protected folders. Contact details will be deleted at the conclusion of the project.

A data sharing agreement will be set up between ESWE and the University of Nottingham to enable the transfer of routine data (i.e., HOS, Inform) electronically. All data will be transferred over secure, encrypted connections. Consent forms and data will be stored electronically or in a secure locked facility for a period of 7 years. After 7 years, all data will be destroyed via deletion or shredding.

9. Ethics and governance

Ethical approval will be sought from University of Nottingham Faculty of Medicine and Health Sciences.

10. Timeline and milestones

The following Gannt chart outlines the key project milestones and completion timeline, although these are dependent on obtaining ethical approval, and the duration of each of the TDSA cycles, according to the needs identified by the LD working group.

Key Milestones	***March 2023***	***April***	***May***	***June***	***July***	***August***	***Sept***	***Oct***	***Nov***	***Dec***	***Jan 2024***	***Feb***	***March***	***April***	***May***	***June***
Ethics application	X															
Developmental evaluation – PDSA 1		X	X	X												
Other PDSA's (TBC)					X	X		X	X	X	X	X				
Analysis completed														X		
Preparation of report														X	X	
Present findings to council															X	X
Submit final report																X

11. Outputs

11.1 Dissemination plan

The PHIRST Light team will work with stakeholders to co-produce an impact and dissemination strategy unique to this project. Potential impact will be mapped by audience groups across the short, medium, and longer-term, including how this impact work will be delivered at each stage. We will actively engage with the ESPAG and the learning and development working group to consider how the evaluation findings are most effectively communicated, alongside formalising a knowledge mobilisation plan.

Broadly, dissemination will occur through the following channels:

- The PHIRST website, including publication of this protocol.
- Public facing summaries of the findings (print and web formats)
- Creative outputs such as video and interactive content
- NIHR final evaluation report
- PHIRST Light and PHIRST social media channels
- Conference presentations and peer-reviewed, open access journal articles
- Dissemination through professional networks
- Local Authority workshops and events

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12. Appendices: Logic model