Bristol and Cardiff PHIRST

Proposal for evaluating the LeicesterSHIRE Community Kitchen scheme

Table of Contents

Overview

The focus of this study will be evaluating the LeicesterSHIRE Community Kitchen (CK) scheme in Hinckley and Bosworth. The study is funded by the National institute for Health Research (NIHR) and will be undertaken by the Bristol and Cardiff Public Health Intervention Responsive Studies Team (PHIRST).

Community Kitchens are community-based cooking programmes in which small groups of people meet regularly to prepare one or more meals together. They are diverse in structure and purpose (Racine & St-Onge, 2000). Some focus on cooking skills or food production while other emphasise the social aspects of participation. Most commonly, participants in community kitchens are trained in budgeting, menu planning, food hygiene, cooking skills and may also receive nutrition education (Sahyoun et al., 2019). CKs are collaborative, participatory programmes that have the potential to foster social skills and support (Loopstra & Tarasuk, 2013). For example, community kitchens implemented in low-income communities in high income countries have highlighted their role in increasing social engagement, access to employment, and mental health (Fano et al., 2004; Racine et al., 2009). Systematic reviews have also demonstrated that community kitchens enhance social interaction by decreasing social isolation (Iacovou et al., 2013).

Leicestershire Community Kitchens

An increased awareness of the positive impact reducing food waste can have for the environment led Leicestershire County Council (LCC) to establish three CKs in 2017 with funding from Sainsburys as part of their Waste Less Save More project. LCC applied the Waste and Resources Action Programme (WRAP), Love Food Hate Waste (LFHW) resources in the CK context in a bid to a tackle and reduce the amount of household food waste (HHFW) being produced by residents in Leicestershire. The overall aim of the scheme for Leicestershire County Council is to engage individuals from all walks of life, in hub-towns and their rural fringe areas, with household food waste issues and build community capacity to deal with food waste effectively and sustainably. It is additionally hoped that participation in the CKs produces a wider range of benefits for the individuals and communities Leicestershire County council serve such as financial and social benefits.

The three CKs that were initially set up by Leicestershire County Council held weekly sessions during which participants were educated and trained to reduce HHFW by applying the six core WRAP resources: 1) meal planning; 2) understanding labelling on food; 3) using shopping lists; 4) storing and using leftovers; 5) portioning properly; and 6) food storage advice, in addition to providing participants with a food waste diary and recipe book. Preliminary results from the three community kitchens established as part of the Waste Less Save More project, suggest community kitchen schemes to be effective interventions for reducing household food waste. For example, LCC report

that over the course of six weeks the CK participants recorded a 33% reduction in HHFW. Participants were also found to report a range of other health and wellbeing impacts as a result of participation, including socialisation, reduced loneliness and increased self-confidence and employability. However, because LCCs primary focus was on the role of CKs in reducing HHFW, the exact health and wellbeing impacts of CK participation is unclear. Consequently, the current evaluation will focus on process (rather than impact); I.e., what health and wellbeing outcomes are likely to be experienced as a result of participation in CKs and how are these health and wellbeing outcomes achieved,

Logic model

A logic model for the health and wellbeing impacts of the CKs was developed (See appendix 1 figure A1) in collaboration with the LCC and wider stakeholders (i.e., Hinckley and Bosworth borough council staff). The logic model sets out the inputs and activities of the community kitchens in addition to the intended immediate and final outcomes of participation. The logic model also suggests the mechanisms through which these outcomes may be achieved in addition to the possible health and wellbeing impacts. This logic model has informed the aims, objectives and methods of the proposed study.

The sequence of events leading up to the outcomes and impacts outlined in the logic model involves a number of inputs including the application and award of funding from LCC to community groups or organisations to establish a CK. Once awarded, LCCs adult education is funded to train volunteers to deliver the community kitchens to residents. The training delivered to the volunteers by LCC adult education was developed by the waste and infrastructure team at LCC in partnership with their adult education tutors. The training is based on a toolkit developed and piloted by WRAP (see the following URL link for further details: https://wrap.org.uk/sites/default/files/2020-12/Love-Food-Champions.pdf)

The trained volunteers then work with the tutors and facilitators (e.g., Hinckley and Bosworth borough council staff) to identify groups or individuals to attend the kitchens in addition to venues with suitable facilities (e.g., kitchens) to host the CKs on a weekly basis.

Once the volunteers have received their training, two are appointed per CK. The two volunteers use several activities including the six WRAP resources to educate and train participants how to reduce household food waste. The outputs of the activities for the residents of Leicestershire are the opportunity to engage in community kitchens, knowledge, skills, and awareness of HHFW and the opportunity, motivation, and capacity to use the activities and resources provided to reduce HHFW (Michie et al 2011). The activities and outputs are therefore intended to lead to attendance at the community kitchens, utilisation of the resources (immediate outcomes) reduced HHFW (final

outcome) and improved health and wellbeing (impacts). This sequence of events is also hypothesised to be influenced by contextual factors such as the location of the community kitchen (e.g., rural, urban) and associated affluency of participants, kitchen facilities available and other training programmes delivered during the community kitchens by outside organisations.

While health and wellbeing impacts are outlined in the logic model, it is unclear exactly what the health and wellbeing impacts are (if any) and how they are achieved (i.e., mechanisms of change) because the aim of the Leicestershire CK scheme, and thus CK activities, to date has focused on achieving the primary aim of reduced HHFW.

A version of the logic model detailing the sequence of events leading to the outcomes and impacts was shared with LCC and Hinckley and Bowell borough council staff during a meeting in November 2021. There was overall consensus with only minor changes being suggested (e.g., more information about the inputs). The logic model was amended according to the suggestions and sent to LCC and wider stakeholders via email for final approval.

Review of existing literature

Cooking interventions have been used to improve eating behaviours, nutritional status, weight related outcomes, and cooking skills (Aycinena et al., 2017; Rees et al., 2012; Reicks et al., 2014). Systematic reviews have repeatedly demonstrated cooking interventions to lead to favourable outcomes (Reicks et al., 2014) amongst the general population and specific patient populations (e.g., patients with eating disorders; Lock et al., 2012).

Community Kitchens are community-based cooking programmes in which small groups of people meet on a regular basis to plan, cook and share healthy affordable meals. Community kitchens are generally designed for anyone to participate and can be run anywhere there is a kitchen (e.g., churches, schools, community buildings). The main difference between community kitchens and other food assistance programmes are their collaborative, participatory aspects and their potential to foster social skills and support (Loopstra & Tarasuk 2013). Community kitchens have thus been implemented by communities as public health strategies to reduce social isolation, improve food security and cooking skills, and empower participants.

The majority of the literature on community kitchens (sometimes referred to as collective kitchens comes from studies conducted in Canada, Australia, and Scotland (Sahyoun et al., 2019). The primary aim of this research has been to examine the impact of CKs on health promotion and food security. The results of these studies suggest CKs to be an effective public health strategy for improving nutrition (Engler-Stringer., 2005; Iacovou et al., 2012; Lee et al., 2010; Marquis et al., 2001). For example, participants have repeatedly been found to report improvements in their intake of nutritious food (Crawford & Kalina., 1997; Engler-Stringer & Berenbaum, 2006; Engler-Stringer & Berenbaum, 2007; Tarasuk & Reynolds, 1999), a greater diversity of food (Engler-Stringer & Berenbaum, 2006)

and a reduction in fast food consumption (Marquis et al., 2001). The dietary impacts from participating in CKs have also been suggested to have flow-on effects to other family members, because CK participants feed their families healthier food (Fano et al., 2004).

Previous research shows there to be a consensus on the positive value of CKs. However, there has been debate over whether participation in CKs increases financial wellbeing and food security (Fano et al., 2004; Tarasuk, 1999; Tarasuk & Reynolds, 1999). Researchers argue that the financial impact of CKs and the association between CK participation and food security requires further investigation because CKs have limited capacity to resolve food insecurity issues as they do not alter the economic status of the household (Tarasuk & Reynolds, 1999).

While previous research on CKs does not tend to focus directly on the social impacts and experiences of participation, social support related themes consistently emerge as outcomes (Engler-Stringer & Berenbaum, 2005; Fano, et al., 2004; Fernandez, 1996; Racine & St-Onge, 2000; Ripat, 1998; Tarasuk, 2001; Tarasuk & Reynolds, 1999). Racine & St-Onge (2000) found that some of the most frequent outcomes reported by participants of a collective kitchen were decreased isolation, friendship development, mutual aid, moral support, increased self confidence and self-esteem and increased participation in other community events/organisations, all of which related to increased feelings of social support. Moreover, Fano et al., (2004) highlight that social interactions and support were the main reasons reported by participants for why they joined a CK programme. Other benefits of participating in a CK programmes have included increased self-confidence, development of skills and thus access to, and securement of, employment (Fano et al., 2004; Lacovou et al., 2013; Racine et al., 2009). Similarly, however, these CK impacts are also less well understood.

Community kitchens and theory

According to social cognitive theory, a behaviour is learnt through observation and modelling. Positive behaviours are likely to be reinforced by significant others and thus repeated (Bandura 2004). Participation in community kitchens involves cognitive, physical, and socioemotional processes. Further, learning to cook in a way that reduces HHFW involves modelling and the acquirement of new skills. Social cognitive theory may help explain why community kitchens are effective interventions to promote health and wellbeing, including diet improvement, self-confidence, and new skills.

The Theory of Planned Behaviour (TPB; Ajzen 1991) may also help explain why participants enrol and continue to attend community kitchens. According to the TPB individuals are more likely to perform a behaviour if they perceive personal value from participation (i.e., favourable attitudes), social expectations to participate (i.e., subjective norms) and perceive themselves to be able to perform the behaviour (i.e., perceived behavioural control).

PHIRST Evaluation aims and research questions

Because the inherent aim of the CKs in Leicestershire is to reduce HHFW, the link between the CK activities and suggested health and wellbeing impacts remains unknown. Consequently, the current study aims to understand not only what the health and wellbeing impacts of participating in CKs are for participants but also how these are achieved and whether the logic model we have developed with LCC is valid. This evaluation will therefore focus on process, rather than impact. The results of which will aim to assist LCC identify the most important health and wellbeing outcomes (primary and secondary outcomes) from participating in the CKs so that routine data collection materials and methods can be set up to help provide evidence of the value of the CK scheme. Helping LCC identify the potential primary and secondary outcomes of the CK would also help them to identify potential future priority locations and populations for CKs based on health need. The current process evaluation has four research questions:

1. What health and wellbeing changes do participants attribute to the CK initiative?
2. How are the health and wellbeing changes achieved? (e.g., what are the mechanisms of change that lead to these health and wellbeing impacts?)
3. How does context effect the mechanisms of change and health and wellbeing impacts? (e.g., what is common to all kitchens and what varies?)
4. What population groups are community kitchens reaching? (e.g., who are intended to benefit from attending, who is attending and why?)

Methods

This will be a mixed methods study. Data collection methods will include a mixed methods survey with CK participants, group observations and individual qualitative interviews with CK volunteers, participants, and Hinckley and Bosworth borough council staff (see Figure 1 for an overview of the methods). Survey data will help identify who is attending the community kitchens while qualitative data will allow a more in-depth exploration of participants experiences. Observations, in particular, will enable researchers to directly observe the contextual influences of the CKs in addition to participant interactions with each other and the volunteers and experiences of participation in the CKs.

Qualitative and quantitative data collection will be done face-to-face, by telephone or online depending on COVID-19 restrictions, participant preferences, availability and access to facilities and resources (e.g., internet and/or computer access). The distribution of participant surveys will be assisted by the community kitchen volunteers and Hinckley and Bosworth borough council staff who

work directly with the CKs. We will, however, work with them to reduce the administrative burden of this as far as possible.

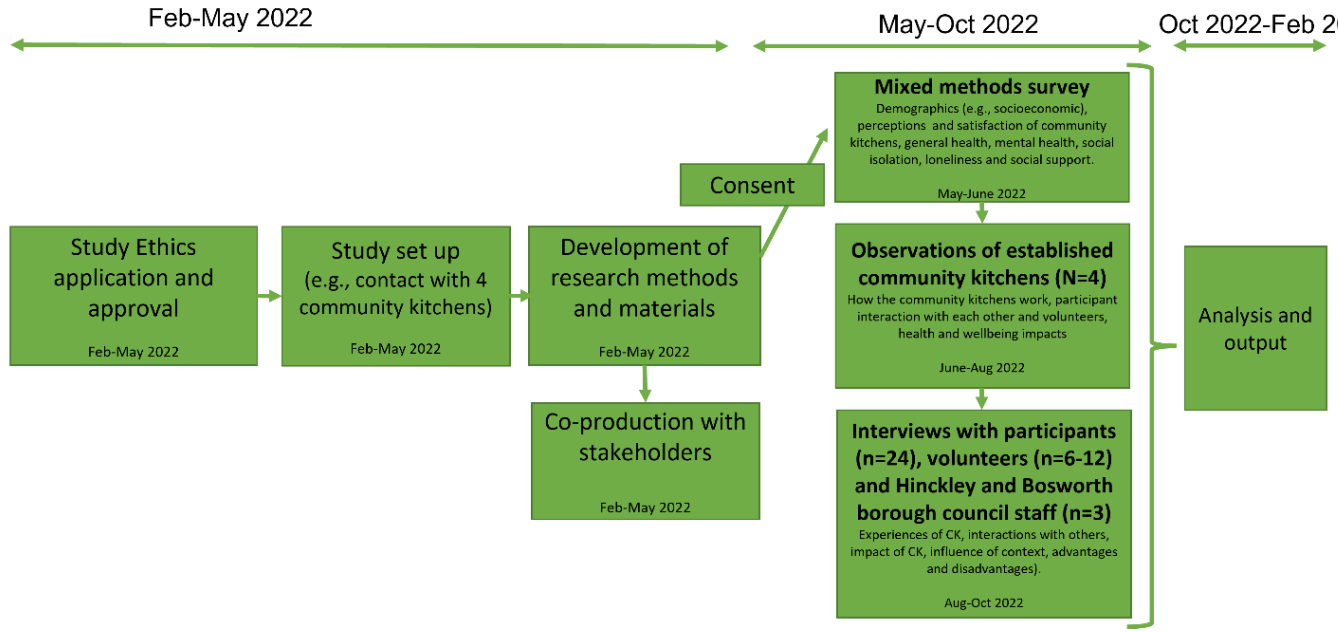

Figure 1. Overview of the methods, materials, and study time points

Patient and Public Involvement and Engagement (PPIE) and Co-production

We will work with LCC and Hinckley and Bosworth borough council staff to identify three previous CK participants and three members of the wider community to help develop our study methods and materials. Participants will be selected based on their gender and location (i.e., rural, or urban) to ensure CK participant representativeness.

This group will be asked to participate in an online session to co-produce the research methods and materials (e.g., recruitment strategy, wording of items in the mixed method survey interview, schedules for qualitative work and development of an observation schedule for the community kitchens). Initial drafts of the methods and materials will be sent to colleagues in advance of the meeting for them to digest to aid discussions during the session. We anticipate this session will last approximately one to two hours, after which revised versions of methods and materials will be drafted and re-circulated (via email) to the team for them to review and approve. During this session, colleagues will also be consulted about participant ability and access to resources to ensure other data collection methods are available to avoid exclusion (e.g., individuals without internet access, individuals with low literacy). Participants will be reimbursed £25 for their time. Two of the six individuals that constitute our PPIE group will also be asked to remain involved for the duration of the study by becoming a member of the study team.

We will also continue to work with LCC, Hinckley and Bosworth council staff in co-production of the study methods and materials. They too will become members of the study team. Co-production with

CK participants, LCC and wider stakeholders will ensure that the research tools are relevant, inclusive, and accessible in addition to ensuring that they achieve the study aims.

The study team will meet frequently to discuss the study and the development of the Dissemination, Impact, Involvement, Communication and Engagement (DIICE) plan for the study outputs (as discussed in the outputs section of this proposal).

Data collection

Survey (R1, R3, R4)

The first method of data collection will be a survey distributed to all community kitchen participants (approximately *n*=45). Surveys allow researchers to collect a large amount of data on a broad range of topics in a relatively brief period of time. Consequently, surveys will be used to gather data on participant demographics (e.g., gender, age), socioeconomics (e.g., employment, educational status, household assets, income, food expenditure/security), general health, mental health, social connectedness, and social support using standard survey items (e.g., SRH; Idler and Benyamini, 1997). Data will also be gathered on participants perceptions of the aims of the community kitchen and the health and wellbeing impacts of participating. Several standard survey items for physical and mental health exist in addition to social isolation loneliness and support. We will review the questionnaire items with our PPIE stakeholders and adapt where necessary to ensure that all areas of interest are covered but the survey is not too onerous for participants to complete.

The survey will be distributed at the beginning of the evaluation and will be designed to be accessible to participants to self-complete. Survey software will be used that allows self-completion via computer, tablet, or mobile phone. To avoid excluding participants without online access, a paper version of the survey will also be available. Participants who are unable to complete a paper or online survey (e.g., individuals with low literacy) will be offered the opportunity to complete the survey via the telephone or face to face with one of the University of Bristol (UoB) researchers.

Recruiting participants from across all six community kitchens is important to provide a general overview of the individuals who are attending the community kitchens in addition to their perceptions of the community kitchen purposes and impacts. Initial discussions with the Task and Finish Group have suggested that all CK participants do not attend each week and that getting participants to complete extra administrative activities may be a challenge. Therefore, we anticipate that making participants aware of the survey in addition to getting them to complete it may involve several reminders. Initial recruitment strategies include:

- CK volunteers asking participants to complete the survey on arrival at the community kitchens weekly.

- CK volunteers distributing paper copies of the survey and a link to the online version of the survey at the end of the CK session weekly.
- Sending email reminders
- University of Bristol researcher recruiting participants directly during CK observations

Recruitment for the surveys will be done primarily by the CK volunteers and Hinckley and Bosworth Borough council staff. Community Kitchen volunteers and Hinckley and Bosworth council staff will be provided with information about the survey, paper copies and a link to the online version. They will be asked to encourage participants to complete the survey when they first arrive at the CK session in addition to reminding participants to complete the survey if they have not already done so at the end of the session. All participants will be given a paper copy of the survey a pre-paid envelope and a link to the online version of the survey. Therefore, those who do not complete the survey during the session will have the necessary information to be able to complete the survey in their own time and post it back to the University of Bristol research team without any cost being incurred.
The survey will include a full participant information sheet, detailing the study aims, objectives, study team, use of data, data confidentiality and a consent form. It is anticipated that the survey will take approximately 15 minutes to complete.

Group observation (R1, R2 R3) –
Marshall and Rossman (1989) define observation as "the systematic description of events, behaviours and artifacts in the social setting chosen for study" (p.79). Observations enable the researcher to describe existing situations through observing and participating in those activities. Observations provide researchers with ways to check for nonverbal expressions of feelings, determine who interacts with whom, grasp how participants communicate with each other and check for how much time is spent on various activities (Schmuch, 1997). Observations also allow researchers to observe events and obtain information that participants may not directly reveal or share with the researcher during an interview. Consequently, observations are considered an ideal method for data collection for the current study to develop a holistic understanding of the community kitchens, the contextual influences, the health and wellbeing impacts and the mechanisms through which they are achieved (DeWalk & DeWalt, 2002).
Four of the six established community kitchens will be observed towards the beginning of the evaluation (see Figure 1). The four kitchens have been selected based on participant characteristics and location (see Figure 2). Two of the selected kitchens are gender specific (i.e., one for men only, one for women only). The other two kitchens are mixed gender, but one is in a rural area, with presumed more affluent participants, and the other is in an urban area, with presumed less affluent participants.

Figure 2. The four selected CK, participant characteristics and CK location

Observations of the four selected kitchens will involve the researcher observing adherence to the core elements of the community kitchen (i.e., activities and WRAP resources), how the community kitchens work, what is happening and why, what are regular and irregular activities, participant interactions with each other and the volunteers and what impact they may be having on the health and wellbeing of participants. Researchers will use an observation framework to gather detailed field notes. Additionally, observations will provide an opportunity for the researchers to familiarise themselves with participants and the CK setting. This is assumed to facilitate the research process and provide the researcher with an opportunity to directly observe the influence of contextual factors. Observations may additionally provide the researcher with additional questions to be included in the qualitative interviews in addition to equipping the researcher with information and experiences that can be directly referred to during the interviews. Group observations may also aid recruitment for the mixed methods survey and qualitative interviews.

The University of Bristol researchers will arrange a date with Hinckley and Bosworth borough Council staff, and the community kitchen volunteers to go along and observe a session. The researcher will make unobtrusive manual recording (e.g., taking detailed notes) during the CK while participating in the group activities and inviting participants to vocalise their thoughts and perceptions of the community kitchen. The researcher will also make detailed notes immediately after the session. The data gathered from the observations will be used to inform additional questions to be included in the semi-structured interviews. A written report of the observations will be shared with the participating community kitchens once all data collection methods have occurred. This will help ensure data accuracy by providing participants with the opportunity to feedback on whether they perceive our observation to be consistent with their experiences.

Interviews (*R1, R2 R3)*

To gather in depth participant perceptions of the health and wellbeing impacts of the CKs, the mechanisms through which these are achieved and contextual influences, semi-structured qualitative interviews will be undertaken with individual participants of the community kitchen. A minimum of four participants from each of the six established community kitchens (*n*=24), will be recruited to participate in face to face or online interviews with the research team (depending on COVID-19 restrictions, preferences, availability, and access to facilities). Participants will be recruited based gender and area of residence (e.g., rural/urban) or presumed affluence. Each interview will occur after

the observations have been completed, towards the end of the evaluation. It is anticipated that each interview will last approximately 30-60 minutes. The interviews will be guided by a topic guide, informed from previous research, PPIE discussions and data from the CK observations and survey. Questions will explore the participants experiences of participating and the perceived health and wellbeing impacts of community kitchens. Specifically, open ended questions will centre on participant experiences, social interactions, perceived impacts of the intervention, the influence of contextual factors and the perceived advantages and disadvantages of the community kitchens
To gather additional in-depth information, one or both volunteers from each kitchen (*n*=6-12) in addition to the Hinckley and Bosworth borough council (BC) staff who work directly with the community kitchens (*n*=3) will also be recruited to participate in a qualitative interview (face to face or online depending on COVID-19 restrictions, preferences, availability, and facilities). Similarly, to the interviews with participants, the interviews with volunteers and Hinckley and Bosworth BC staff will explore perceptions of the benefits of participating in community kitchens, the mechanisms of change, the health and wellbeing impacts that result from participation and who CKs benefit (i.e., population that benefits most). Participants will be reimbursed £15 for their time.

Data Analysis

Mixed methods survey

Quantitative data will be descriptive in nature. The sample is anticipated to be too small to examine the relationships between variables.

Observations

Observation data will be synthesised, and a report written. In analysing the descriptive data, the researcher will review what was witnessed and recorded along with what participants said assigning codes based on the research questions. Assigning codes will reduce the data and enable the researcher to explore patterns across community kitchens and induvial participants.

Interviews

Each of the qualitative interviews will be transcribed verbatim imported into NVivo software and analysed using thematic analysis (Braun & Clarke 2019). Thematic analysis is an accessible, flexible, and increasingly popular method of qualitative data analysis. The steps of thematic analysis, according to Braun & Clark (2019) are:

1) transcription and familiarisation with the data
2) inductive coding to attach meaningful labels to textual data and generate initial codes
3) review all the transcripts codes for patterns or themes
4) definition of the themes

Researchers will meet at regular timepoints during data analysis to cross check the codes and themes generated against extracts of the data. Any disagreement between researchers will be resolved through discussion. Textual data analysis will be presented as a summary accompanied by illustrative verbatim quotations.

Data management plan

The university of Bristol will be the data controller for this study.

The project will generate quantitative survey data and qualitative data in the form of open text box survey questions, interviews, audio recordings and observation notes. Observations will be manually recorded onto an observation framework and interviews audio recorded using encrypted Dictaphones. All audio files fill be uploaded onto a password protected laptop (if away from the office) and uploaded onto an access restricted folder on the University of Bristol secure server. Once uploaded they will be deleted from the recorders.

Transcription of interviews will be undertaken by one of four external transcription companies which have been approved to process data subject to the Data Protection Act, for which the University is the data controller. They have entered a formal "Personal Data Processing Agreement" drawn up by the Secretary's Office. Only members of the research team, including those who may become part of the team in the future, will have access to all the study's data. Individuals beyond the research team will not have access to the data at any point during the study. To enable anonymity, identifiable information will be replaced by a unique participant identifier. These identifiers will also be part of file names.

Any paper copies of surveys along with observation notes and other study materials and data (e.g., digital camaras), will not be left unattended at any time unless they are securely stored (e.g., locked filing cabinet).

All data gathered (i.e., qualitative and quantitative) will be stored on the University of Bristol's secure server and data analysis will take place on password protected computers that only the research team have access to.

In accordance with Research Councils UK guidance, all consent forms will be stored securely in electronic form or as locked paper copies for a period of 10 years. After 10 years, electronic documentation, and data will be destroyed via deletion from the University of Bristol's secure server. Hard copies of the study documentation (e.g., paper surveys) will also be destroyed by shredding and confidential waste disposal.

Anonymised data will not be destroyed but will only be available for future research by reasonable request. Participants will be informed of this via the participant information form and participants will

be asked explicitly for their consent for this to happen on the consent forms for the study and within the survey questionnaire.

Ethics and governance

The study will be registered with the research governance team at the University of Bristol. Ethical approval has been obtained from the University of Bristol's Faculty of Health and Sciences Ethics Committee (approval code 10175). The ethics approval will ensure the following:

Informed consent

Informed consent will be gathered from participants at each stage of the study. Prior to completion of the survey, participants will be provided with a study information sheet detailing the aims and objectives of the study, what data will be collected and how it may be used. They will then be asked to consent to participate within the survey questionnaire. Survey items will not be accessible for online completion until consent has been provided.

Informed consent will also be collected from CK group participants and volunteers prior to any observations being carried out. Volunteers from the chosen kitchens in addition to Hinckley and Bosworth County council staff will be asked to obtain participant consent prior to the planned observation date. This will involve providing participants with an information sheet and accompanying consent form. Consent forms will be made accessible in paper and online format in advance of the observation. The researcher will not carry out the observation until all participants have completed the consent form. If an individual does not consent to participate, they can choose not to attend that particular CK session, or the researcher will make sure the participant is aware that they will not take manual recordings of anything they say or contribute during the session. On the day of the observation, the researcher will introduce themselves and request another consent form is completed to ensure participants have not changed their mind and continue to consent to participate. Prior to the interviews, participants will once again be provided with a study information sheet and consent form.

Voluntary participation

Participation in this study will be on a voluntary basis. Participants will however receive £15 in return for participating in the cognitive interviews.

Confidentiality and anonymity

Any identifiable information will be held confidentially. Once the data has been downloaded (survey), transcribed (interviews) and written up (observations) any identifiable information will be replaced with unique participant identifier for data storage and analysis.

Recruitment

LCC, CK volunteers and Hinckley and Bosworth borough council staff will play a central role in the identification and recruitment of CKs for observations and individual participants to participate in the interviews. Hinckley and Bosworth borough staff will be asked to approach the volunteers of the chosen kitchens and together they will distribute the information and consent forms to participants. Individual participants will be recruited to participate in the interviews by asking them to leave their email address or contact phone number at the end of the survey or by contacting the researcher directly (I.e., via email or study phone). The researcher will also recruit participants for the qualitative interviews during the observation**.**

Analysis and dissemination

Analysis will be performed on anonymised data that is stored on a secure server. No identifiable information will be shared beyond the research team. Participants will be made aware that the information they provide will be used for research purposes and shared beyond the research team, but no information will be able to be traced back to them individually.

Research ethics review and compliance

Before the study recruitment begins, the principal investigator will ensure that all the ethical approvals are in place. Any amendments to the study will be sent for ethical review and renewed ethical approval.

Risk assessment and reporting adverse events

A full risk assessment will be carried out in advance of the study as per standard protocol at University of Bristol. This will include assessments of risks to both participants and the safety of the field researcher and any adverse events during field work will be reported according

Other

Because observations can collect information about aspects of participants lives that they may not directly share with the researcher, the results from the observations will be shared with the participants and given the opportunity to feedback on whether they perceive the analysis and our interpretation to be consistent with their experiences. Participants will be asked to provide an email address that the UoB research team can contact them via as part of the consent process. The UoB researchers will send participants a written report of the observation after all data has been collected using this email address and ask participants to feedback on perceived accuracy etc. Participants will also be informed that they can withdraw from the study at any time up until their data has been anonymised.

Timeline and milestones

	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Ethics preparation and submission to REC	x	x											
Co-production of study materials and methods		x	x										
Recruitment and consent of target groups			x	x									
Surveys				x	x								
Observations					x	x	x						
Qualitative interviews							x	x	x				
Analysis					x	x	x	x	x	x	x		
Results report and participant feedback									x	x	x	x	x
Report writing													

Outputs

Bristol and Cardiff PHIRST have developed a Dissemination, Impact, Involvement, Communication and Engagement (DIICE) template (Appendix 2), which will be completed for this study in partnership with LCC and the wider stakeholder and PPI. This will ensure that study outputs are accessible and relevant to a range of audiences. We anticipate that outputs will include:

1. PHIRST project report
2. Finalised logic model incorporating the outcomes, impacts and mechanisms of change identified.
3. Public facing summaries of the findings made available online or in print
4. Report for LCC detailing findings, recommendations, and directions for future monitoring of the health and wellbeing impacts from CKs.
5. Peer reviewed journal articles
    - Process evaluation of community kitchens as a health and wellbeing intervention
6. Presentation to LCC and stakeholders.

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Appendix 1

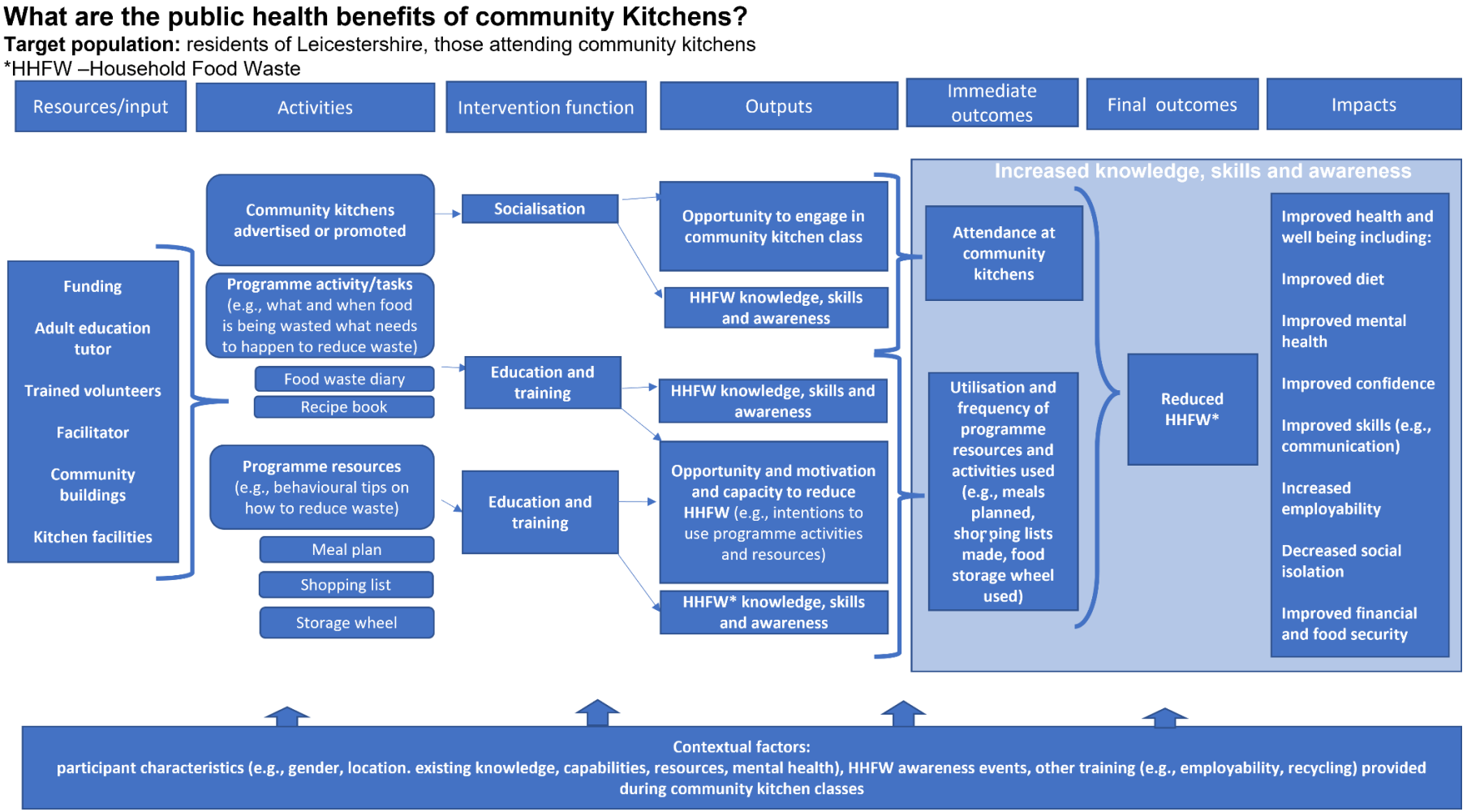

Figure A1. Community Kitchens logic model

Appendix 2

Bristol and Cardiff PHIRST
Dissemination, Impact, Involvement, Communication and Engagement (DIICE plan)

Purpose: Bristol and Cardiff PHIRST will develop a bespoke Dissemination, Impact, Involvement, Communication and Engagement (DIICE) plan for each PHIRST study we undertake. The DIICE plan will be co-produced with key stakeholders (including members of the Task and Finish group and if appropriate, other members drawn from the local authority, relevant third sector, participants, and wider groups). Our principles of co-production are shown in Appendix 2.1. The plan will consider how the findings of the research will be disseminated locally, where the work was conducted, as well as to wider regional and national audiences, and those with a special interest in the topic. Plans will be reviewed by the Bristol and Cardiff PHIRST Management Group and shared with our colleagues at NIHR who are responsible for managing the PHIRST teams. DIICE plans should also take into account the publication policy (Appendix 2.2).
We will pilot this plan with Project 1 and amend it in the light of this pilot. In addition, agreement has been reached on a joint PHIRST teams' website but at the time of formulating this DIICE plan template plans for this website are at a very early stage of development. We will therefore also review the plan following its piloting to take account of the structure of the new website and other PHIRST teams approaches to dissemination, impact, involvement, communication and engagement.

1. Study details	
Name of study:	
Study Lead:	
Other researcher(s)	
Local authority:	
Study start date:	
Study end date:	
Version number and date of DIICE plan:	

Page Break

2. Engagement
Please detail how specific audiences will be engaged, and how. You may want to consider engagement with:

- Policy makers: e.g. working with PolicyBristol, or Wales Centre for Public Policy to produce and disseminate two-page Policy Briefings highlighting the key policy messages.
- The research community: e.g. presenting review findings at scientific meetings such as the annual Society for Social Medicine, the UK Society for Behavioural Medicine and Lancet Public Health conferences.
- Public health practice: e.g through: (i) research networks (e.g. DECIPHer and NIHR SPHR); (ii) joint academic and service senior lecturer posts in public health in UoB and placements and co-location with Public Health Wales; (iii) bi-annual meetings with Directors of Public Health in the region; and (iv) training activities (South West public health specialists; PHS' and DECIPHer short course programmes); and (v) teaching (e.g.

MSc in Public Health); (vi)links with NIHR SPHR and Social Science Research Park research capacity development work.

- Third sector organisations: e.g. those concerned with the focus of the study.
- Members of the public: e.g. through local and regional science outreach events (e.g. British Science Association, Pint of Science, ESRC Festival of Science). The Elizabeth Blackwell and Cabot Institutes at the University of Bristol can support public engagement activities.

Target audience	Planned engagement activities	Lead(s)	When?

3. Dissemination

Please give details of the planned outputs. Consider matching output type to the target audiences identified above in section 2. Please ensure that authorship takes account of the publication policy (Appendix 2.2). Outputs may include:

- a report for the NIHR Journals Library (required)
- peer-reviewed paper(s)
- blog
- briefing
- webinar
- slide set
- podcast
- conference presentation
- toolkits or other resources emerging from the study

Dissemination activity	Lead(s)	When?

4. Communication

Please detail how you will alert audiences to study publications, events, or other outputs. This may include:

- Press releases: (UoB and CU Media team can help with these)
- Twitter accounts: e.g. UoB centre for Public Health; DECIPHer, NIHR; PHIRST, any study team, stakeholder or collaborator accounts
- Network newsletters
- Blogs

Communication type	Lead(s)	When?

5. Involvement

Please detail how members of the public and practice community have been involved in the study outputs. This may include co-production activities during the study itself, as well as direct involvement in creating outputs and their dissemination. Please see Appendix A4.1 for PHIRST principles of co-production.

Please detail the type of activity (e.g. co-production of research design; consultation on research output(s)); who was involved; and the impact of this involvement on study outputs, dissemination or impact.

Activity	**Who was involved?**	**Impact**

6. Impact

Please detail how the study may have impact (academic[1], economic or societal). This may include

- instrumental impact – influencing the development of policy, practice or services, shaping legislation and changing behaviour
- conceptual impact – contributing to the understanding of policy issues and reframing debates
- capacity building through technical and personal skill development[2]

[1]The University of Bristol has useful guidance on tracking academic impact

[2]ESRC/defining impact.

Appendix 2.1: Co-Production Principles

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Appendix 2.2: B&C PHIRST Publication Policy

Background

A primary aim of PHIRST is to ensure that the study findings are shared with our target audience(s) when available (e.g. the research community, public health practitioners, third sector organisations and the public, outlined in section 2. above). This document is designed to provide **guidance** on how the PHIRST publications will be managed. A similar approach will also be taken for presentations and other outputs.

A publication group for each individual PHIRST study will comprise

- the lead researcher named on the DIICE plan, and
- the lead applicants e.g. Professors Campbell, Murphy and Jago.

The publication group will, where required, make final decisions on authorship and be responsible for monitoring the quality of all study outputs.

Who can be an author?

We will follow the SPHR authorship policy which is modelled on the ICJME guidance. Specifically, authors should have made the following contribution:

1. Substantial contributions to conception and design, acquisition of data, or analysis and interpretation of the data.
2. Sufficient participation in the work to take public responsibility for appropriate portions of the content.
3. Drafting of the output or revising or critically for important intellectual content.
4. Final approval of the version to be published.

The people who are eligible to be authors are PHIRST project staff from Bristol and Cardiff Universities who have worked on the individual PHIRST study named in this document for at least 3 months. Any other staff member, including those on the PHIRST Management Group, or individual study management group (or equivalent) who is engaged with the study for at least 3 months is also eligible to be an author. Local stakeholders, such as staff from the local authority or other organisations related to the individual study, or public stakeholders (including any involved in co-production activities) may also be authors if they meet the criteria outlined in 1-4 above.

The author order will be based on the criteria below.

- The lead author be decided by the extent to which each author meets the criteria for author roles, but it is intended that the publication group will agree the initial key authors (first, second and last) and responsibilities for each paper before writing commences.
- Final authorship shall be confirmed at the point when a final or near final draft is established.
- Any member of the research team who does not feel that they have made a sufficient contribution to the publication to warrants being names among the authors may (and will normally be expected to) withdraw their name.
- The study publication group will, where required, make final decisions about authorship.

Approval

To maintain the highest possible standards all outputs (which should be listed in full in section 3 of the main document) must be approved by the publication group prior to publication (this includes submission to journals, abstract/poster submission to academic conferences, publication of any project resources, presentation slides, webinar scripts, or equivalent). The draft paper will also be sent to the local authority contact (if not a co-author) to provide any feedback prior to submission. Three weeks will be allowed for this. Please note that while we welcome local authority feedback the NIHR contract does not allow a local authority to block publication.

Author responsibilities

Lead author responsibility

The lead author is responsible for producing the first draft of any output. This may include performing the analysis or using analysis provided by others. The lead author will then circulate drafts for comment by co-authors. When the lead author feels that the publication is ready it will be shared with the publication group for approval. Once approval is obtained the lead author must submit the paper to the NIHR and DHSC for approval at the point of submission.

Co-authors roles

As outlined above all co-authors are expected to read and contribute to each output. This should be done in a timely manner. When approval to submit a paper is requested, co-authors (and any publication group member who is not a co-author) should respond with either approval or approval withheld. If approval is withheld the co-author needs to provide a rationale. All co-authors should respond to requests for approval within **two weeks.**

NIHR Open Access requirements

All papers must comply with the NIHR Open Access Policy. This means that all papers should be published in a journal that makes it available using the Creative Commons Attribution (CC BY)

licence and allows immediate deposit of the final published version in other repositories author restriction on re-use.

Funding disclaimer
All publications need to add the funding disclaimer.
This study/project is funded by/ supported by the National Institute for Health Research (NIHR) Public Health Intervention Responsive Studies Team (PHIRST) (Grant Reference Number XX?). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

NIHR requirements prior to publication

- A copy of the paper/article/other output must be sent to phirst@nihr.ac.uk 28 days before it is due to be published.
- (We will probably need to add something about PHIRST comms/website here when available)

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