

NIHR PHR

The Community Food Assets Study

Protocol for Study

Title: What are the most beneficial models used by community food assets to prevent the need for emergency food aid? A longitudinal qualitative study conducted in two multi-cultural populations in the North and South of England

Short title: The Community Food Assets Study

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1. PLAIN ENGLISH SUMMARY

Background:

One in five families with children in the UK live in a household where they cannot regularly access affordable and healthy food, known as 'food insecurity'. This negatively affects physical and mental health. Organisations across the UK called 'community food assets' provide support with emergency food and/or by preventing people needing emergency food. This might be done, for example, by helping people to claim available benefits or providing credit for their utility bills. Only about half of those who need support use a food asset, in part because people feel ashamed. Local governments have asked us to identify which types of food assets are best at preventing people needing emergency food and what it is specifically that they do to help people who are food insecure. We will also look at how easy food assets are to approach and whether they support everyone in need.

Aim:

To investigate what approaches used by community food assets are most likely to help prevent the need for emergency food in two multi-cultural populations in the North and South of England and use the research to inform local authorities as to how best to invest in these or other resources.

Methods:

Research in Bradford and Tower Hamlets (London):

1: Researchers will listen to food asset users and people working in voluntary organisations and local governments to understand how different organisations work together and the role they play in peoples' lives. This will produce a picture of the complex food aid system, highlighting the pathways and processes through which food assets help (or hinder) preventing food insecurity.

2: Over 12 months, researchers will work as volunteers at five food assets to understand how they work and to meet users, volunteers and staff. After three months, researchers will carry out 'go-along' interviews with families, spending time with them to understand their lives and the role food assets play. Researchers will also spend time with families who are food insecure but do not use food assets to understand why, and how they manage. All families will take photos, videos and other media of things that are important to them about food. All the above will help us understand which food asset approaches are most effective (how and in what ways) and how accessible and inclusive they are.

3: Throughout the project, we will consider how our findings are able to make the biggest difference; from ensuring our questions are relevant and needed, choosing our methods and sharing our results to change policy and practice.

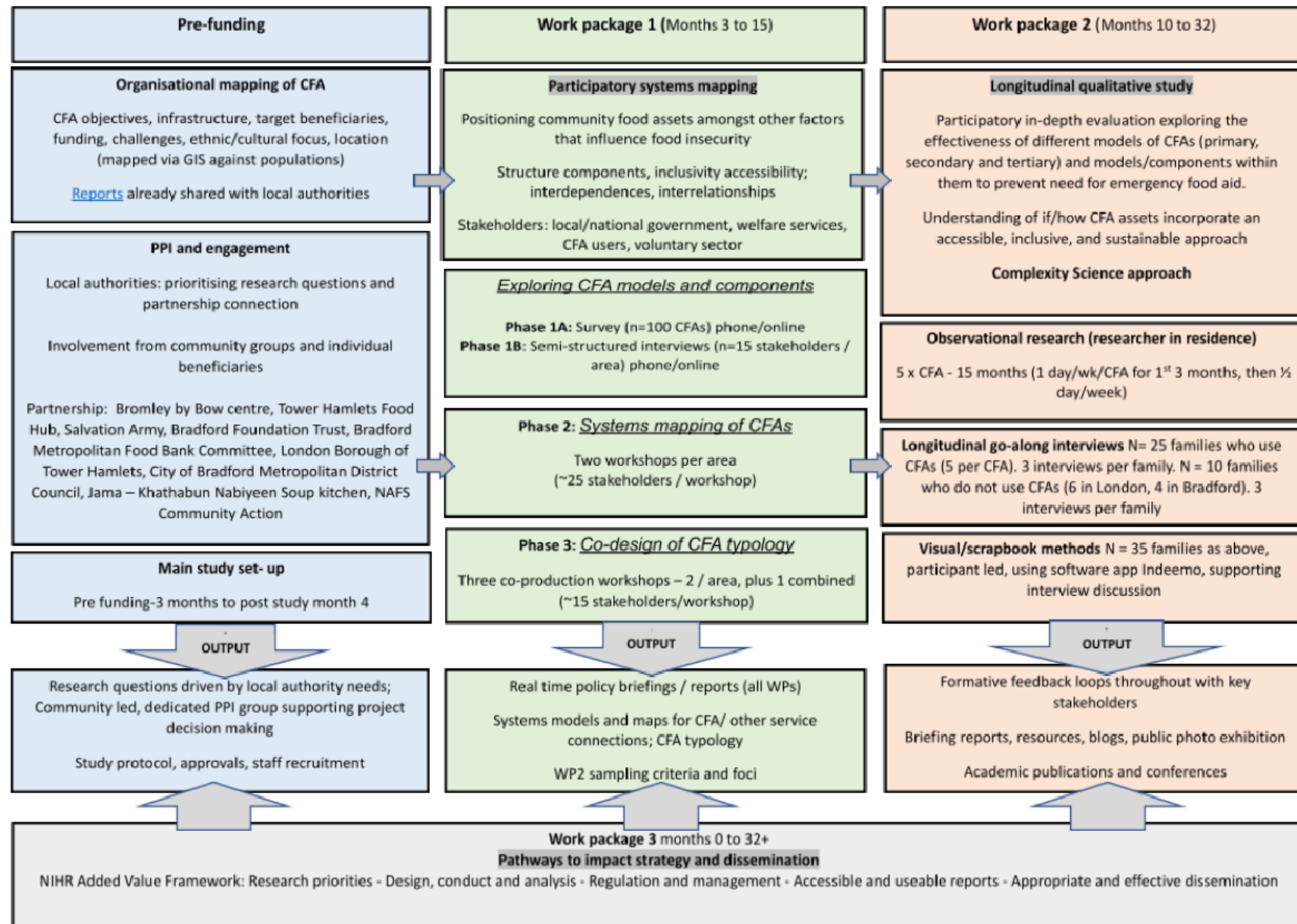
Public involvement:

People receiving food aid and those working in local government, voluntary organisations and food assets have all told us that this research is essential. We changed our original plans to make sure that researchers volunteered within food assets to build trust with people using them. We will continue to work alongside food asset users and our project team includes someone who has experienced food insecurity.

Impact/dissemination:

Part 3 of our methods (above) has been developed specifically to ensure that our research can make the biggest difference. We will provide regular updates and findings to everyone involved, including local and national government, voluntary organisations, communities and academics. These will be tailored to the audience and will highlight which food asset approaches prevent the need for emergency food. We will also host public exhibitions of the photos/videos that families share with us.

○ FIGURE 1. STUDY DESIGN FLOW DIAGRAM



2. GLOSSARY OF TERMS

CFA	Community Food Assets
UKPRP	UK Population Research Programme
LA	Local Authority
REC	Research Ethics Committee
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NIHR	National Institute for Health Research
PHR	Public Health Research
SOP	Standard Operating Procedure
SMG	Study Management Group
WP	Work Package
WHO	World Health Organisation

3. BACKGROUND

PROBLEM:

Community food assets (CFAs) are local food infrastructures that can respond to community food insecurity (though can be locally or nationally managed) (1). They are varied in their approach and include emergency food distribution, community gardens, urban farms, community kitchens, food banks and other community food organisations (2). There has been rapid growth of CFAs over recent years (3) and particularly since the COVID-19 pandemic (4). Many people in need do not use CFAs, (perhaps due to stigma and shame) (5) whilst it is argued that CFAs may lead some people to come to depend on emergency food aid rather than being proactively supported out of food insecurity. Formal food banks, which operate via recipients receiving referrals from professionals (e.g. Trussell Trust) have been widely studied, but there is very little research to support understanding of what models or components of CFA are most effective at reducing reliance on emergency food (primary prevention) and associated health impacts among diverse groups. By 'models' we mean the mode of delivery of food aid (e.g. drop in, online support, home delivery or referral). By 'components' we mean activities and actions (e.g. welfare advice, employment support, food vouchers, emergency provision of food). Local authorities that we work with and the Department of Food, Environment and Rural Affairs (DEFRA) have expressed to us that there is a need to better understand the preventative capabilities of CFAs to better target resources. Efficient and effective targeting of resources is particularly crucial given the current cost of living crisis (6).

IMPORTANCE:

HEALTH NEED: Food insecurity is a cause and consequence of poor health (7-9) and places a significant burden on healthcare services (7). Families with young children are particularly at risk (10-12). COVID-19 has precipitated a significant and sustained increase in food insecurity (13), which is projected to continue (14). CFAs have been essential in responding to rising food insecurity (4, 13, 15, 16); however, which CFA operation models or components are most effective at preventing food insecurity in both the short- and long-term is not known (17).

SUSTAINED INTEREST: There is ongoing and high-profile policy interest in the impact of food insecurity on well-being (18). Public Health England (PHE) recommended a strategic and comprehensive response (19) and the recent government Levelling Up white paper recognises the need for affordable, accessible and healthy diets (20). These are also likely to be key priorities in the awaited Food Strategy white paper and the Health Disparities white paper, key to which will be addressing geographical inequalities in this area. Our research addresses this directly by considering the impact of CFAs among multi-ethnic populations in the North and South of England. DEFRA are key partners within the proposed work and have emphasised a need to gain a better understanding of sustainable and scalable CFA models and approaches in order to inform spending decisions.

KNOWLEDGE GENERATION: There is limited research on a) which models and approaches of CFAs are most effective at preventing continued dependency on emergency food aid and b) the inclusivity, access and impact of varying types of CFAs. Our research will generate rich evidence on both of these to inform culturally appropriate, sustainable community-based policies which can be applied to other (ethnically diverse) populations. Our approach will cover the whole prevention spectrum; considering components which attempt to prevent food insecurity via ensuring that people have access to adequate

security. This includes those described as providing primary prevention of food insecurity (e.g. preventing the need for food aid by supporting educational or employment opportunities), and secondary prevention (e.g. preventing food insecurity from worsening through social security advice). We will explore how each of these might work alongside the provision of tertiary support; (i.e. the mitigation of the immediate impact of food insecurity via provision of food).

EXISTING EVIDENCE: Our research settings are in Bradford and Tower Hamlets. Both areas are ethnically diverse with high levels of poverty and ill-health (21) 25% of children living in Bradford and 39% in Tower Hamlets live in poverty (22). Pre-COVID, 14% of Born in Bradford cohort families (BiB) were food insecure (23) but this increased to up to 20% (24). At about the same time, half of the families who responded to a survey in Tower Hamlets reported an ability to afford a balanced meal (Cameron, p.c.). We have identified ethnic differences in the complexity of the issue and suggested a potential protective effect of ethnic minority social networks for some groups (23, 25-27). Our work with families indicates that some groups are less likely to use CFAs even at times of need, particularly those of Bangladeshi heritage. This work also identified an emerging need in middle income families following the pandemic, with an increased risk of food insecurity reported in families earning between £20,800 and £51,999 per annum. We have mapped the location and objectives of a large, varied and complex network of different types of CFAs across Bradford (5) relatively few of which are food banks (28), perhaps reflecting adaptation to the cultural and religious needs of the population. Comparable mapping work has been done in Tower Hamlets, suggesting similar complexity (28). We continue to work closely with both local authorities and this work has already influenced action planning to better support families.

4. INTERVENTION DETAILS

(Described using the TiDieR checklist):

WHAT: CFAs include a diversity of models and components, including provision beyond emergency food aid (5); which will be explored and characterised in WP1. Services / components provided vary greatly between and within models (types of provision). Broadly speaking, they include provision of 'emergency' assistance (e.g. food banks, food/parcel delivery services, surplus food redistribution and soup runs), 'non-emergency' assistance with food (e.g. community cafes, community supermarkets [offering low cost or pay-as-you-feel food] and community gardens) and wider social or welfare support. For many organisations, food provision is largely dependent on donations and therefore varies in terms of the offer, its nutritional value and its cultural and/or religious acceptability. This can be 'topped up' by financial support from local authorities, though again, this is not consistently implemented between or within local authority areas.

WHO: CFAs use varying approaches for supporting different populations. In theory, they are available to anyone who needs them. However, some CFAs, particularly food banks, operate on a referral basis from care professionals or organisations such as social workers, health visitors, schools or Citizens Advice. Such referrals can be instigated from the person in need (i.e. seeking support from Citizens Advice) or identified by the care professional. Other CFAs, particularly 'non-emergency' provision and organisations which are not part of a wider network, tend to provide support without the need for referrals (including those supported by local authorities or community ownership funds). Evidence collected by the Trussell Trust indicates that people are more likely to seek support if they are families with children, do not have a network of family or friends, have had substantial life challenging experiences (homeless, relationship breakdown, bereavement etc.), experience mental health issues, and/or are experiencing issues with their benefits (29). This is consistent with national data which describes the characteristics of people experiencing food insecurity, which is most prevalent in families, low-income households and those in

receipt of social security, and among people with severe life-limiting disabilities or illness (11). Food insecurity is also greater in some ethnic groups, particularly Black/African/Caribbean/Black British or Asian/British Asian households (30). However, there is limited information about the use of CFAs amongst different ethnic groups and some agreement that use is under-representative of the populations in greatest need (27). In our exploratory work within Bradford, we identified gaps in the provision of cultural or religious acceptable/appropriate foods in areas of greatest ethnic diversity; predominantly due to the over-reliance of food donations and failure by some providers to adequately recognise and respond to the cultural needs of minority groups. Bangladeshi families in Tower Hamlets are also less likely to use CFAs compared to White British/Irish background families. Despite the awareness of access barriers (e.g., language, disability), there is a lack of evidence regarding inclusivity or acceptability of the provision of social or welfare services within CFAs for differing ethnic groups.

HOW: Taking advice from our local authority partners and our partnership with the Faculty of Public Health Food Special Interest Group, we will focus on the following prevention approaches: Primary: aims to prevent the need for food aid by lifting people out of poverty (e.g. employment advice and support). Secondary: aims to prevent food insecurity getting worse (e.g. welfare advice). Tertiary: mitigate the short term impact of food insecurity (e.g. emergency food aid).

WHERE: CFAs are available in a wide variety of settings.. In our scoping work in Bradford, and in Tower Hamlets, we identified services running from schools, religious settings, food banks, community halls and other community hubs. Many areas offer combined support via a Food Hub model, where operations are coordinated across multiple settings. This approach often offers an array of services, including the provision of emergency food, in addition to providing financial support and signposting to additional resources. Hub models also usually help to manage food donations and collection and delivering services.

WHEN AND HOW MUCH: CFAs include both well established organisations and those that are set up responsively. While there is no doubt that emergency food is essential during times of crisis, many CFAs are working towards a reduction in the need to rely on this approach via secondary prevention support, as well as involvement in wider campaigning activities and policy engagement. Indeed, it is a vision of the Trussell Trust to reduce the need for emergency food by 2025 through targeted support that addresses the underlying reason for hunger while the Independent Food Aid Network (IFAN) has pioneered a cash-first approach to food insecurity which aims to bypass the need for emergency food aid entirely.

MODIFICATIONS: COVID-19 played a substantial role in how CFAs were used and demonstrated their ability to be flexible. There was a substantial growth in those providing emergency food, and a reduction in those providing additional support. In Bradford during lockdown, 116 community organisations' primary stated motivation was to provide emergency food assistance (16). Of these, 59 were newly set up to respond to increasing demand. Thirty were forced to close; the majority of which previously offered a face-to-face model of social or welfare support and non-emergency food aid in the form of prepared meals. The ability of services to alter operations to meet the needs of the newly food insecure population was found to be highly dependent on funding. For instance, provision of home delivery services to cater to self isolating individuals requires access to a mode of transit and the ability to cover wider costs, like vehicle insurance. In March 2020, Tower Hamlets council launched an emergency food hub programme, delivering donated food and other poverty relief items to 26+ food banks, community-based organisations, schools, and food providers who in turn reoriented and upscaled existing services to accommodate elevated demand (28).

As we enter a recovery phase for COVID-19, many services that provide a social interface of food provision and advice services are beginning to re-open. Although this may represent a positive change in terms of the available support, this new phase has inherited infection rates without control measures, the long-term impact of COVID on inequalities, and a heightened cost of living crisis; all of which will likely lead to increasing dependency on CFAs.

5. AIMS AND OBJECTIVES

5.1 AIM: To investigate what approaches used by community food assets are most likely to help prevent the need for emergency food in two multi-cultural populations in the North and South of England and use the research to inform local and national government as to how best to invest in these or other resources.

5.2 PRIMARY OBJECTIVES:

1. To conduct stakeholder workshops to position the role of CFAs amongst other factors that influence food insecurity, including the types of approaches used to prevent the need for emergency food aid; exploring inter-dependencies in the system and generating a typology of approaches (Work package 1).
2. To undertake a longitudinal qualitative study to understand whether, how and in what ways different CFA models and components (identified in Obj 1) provide primary, secondary or tertiary prevention of food insecurity and the impact these have on the food security status of families (Work package 2).
3. To deliver a pathways to impact strategy that ensures our findings have the greatest benefit so that (a) the most effective prevention models and components can be adopted by CFAs, (b) food vulnerable communities can access the most effective and culturally appropriate resources and (c) local and national government can best target available funds and reduce the over-reliance on emergency responses (Work package 3).

6. DESIGN

This protocol describes research with three integrated work packages involving: systems mapping (WP1), a multiple method longitudinal qualitative study (WP2), and a work package specifically dedicated to impact and implementation (WP3). Methods and activities are all underpinned by a complex systems thinking approach (31). We will evaluate the inherent complexities of five CFAs across Bradford and London, within the wider food and welfare systems in which they sit, whilst paying attention to the specific populations and communities they serve and the factors that prevent dependence on emergency food aid (31-35). We have developed a dynamic logic model (36) which highlights our assumptions about how CFAs produce their outcomes, allowing for dynamic and adaptive directions to emerge and/or flex.

7 Work Package 1: Systems Mapping

7.1. Research questions

1. What are the different organisational models and components of CFAs?
2. What do the social and economic systems in which CFAs operate look like?
3. What are the key organisational components and political pathways for successful/unsuccessful implementation of services provided to achieve inclusivity, accessibility and to move clients away from emergency food aid?

7.2. Summary

Systems mapping (survey) and qualitative interviews with typology generation.

7.3. Theoretical underpinning

We will take a systems approach in order to explore feedback loops and causalities, and highlight potential points of successful intervention, where small changes in one part of the system can directly or indirectly affect other elements, or result in significant wider change. Thus, a systems approach will enable us to explore which decisions, shifts and policy interventions have the potential to change the system in the most effective way for a more targeted use of CFA resources (identifying actions to achieve policy targets, trade-offs and synergies in CFAs). This will allow the research team to explore interactions or interdependencies between the CFA organisations, identify complex drivers of the use of food aid (e.g. socio-economic/health factors), and investigate outcomes of food aid organisations (e.g. individual and community level food security).

7.4. Methods

WP1 has three phases: Phase 1: starts by building a picture of the differing models and components of CFAs through a survey with community food assets. Phase 2: will build on this to develop a systems map of CFAs via stakeholder workshops and interviews with key stakeholders; exploring links between different agencies and considering how interdependencies may impact on the ways that they are able to support beneficiaries. Phase 3: will use the information collected in both phases to co-design a typology of models and components used by CFAs; highlighting which of these are intended to prevent the need for emergency food aid. This will be accompanied by a glossary as a useful tool to support decision making in national government (requested by DEFRA).

7.4.1 PHASE I: EXPLORING CFA MODELS AND COMPONENTS

Precis: An exploration of CFA models and components adopted to address food insecurity, and the system in which CFAs operate, in Bradford and Tower Hamlets via a structured survey of CFAs, and semi-structured interviews with key stakeholders.

Timescale: Months 4 to 11 (June 23 to Jan 24)

Approach:

Phase 1 will directly address the research questions: what are the different models and components of CFAs; and what does the system in which CFAs operate look like? Phase 1 will provide a detailed descriptive picture of CFA organisations (N = >100) via a structured survey in the two locations,

conducted online and, where necessary, via phone. Informed by piloted survey methodology in Bradford and Tower Hamlets (16), it will assess CFA models/components adopted to address food insecurity; methods employed to improve accessibility and inclusivity; networks and interdependencies between CFAs; and, following a direct request from DEFRA, consider the sustainability and potential scalability of varying CFAs models.

Sampling:

Informed by piloted methods (16), Phase 1 will combine publicly available information (e.g. information openly provided on organisational websites) with survey data completed by CFA representatives. Individuals from CFAs who agree to complete the survey will be asked to recommend other CFA organisations to approach (snowballing approach). This will be done until data saturation is reached (based on our previous similar work, this will include survey completion by approximately 100 organisations). We will nominally ask one person from each organisation to complete the survey although a collective response across several people in order to provide a full response is also an option.

Data collection:

Data will be collected via a structured online survey questionnaire. The questionnaire will address the nature and frequency of service provision, the demographics of service users, accessibility and cultural specificity of the service, and connections with other service providers. Where online is not possible, the survey will be conducted via phone (researcher administered). Participants will be provided with full information about the study before agreeing to take part. This information will be repeated before the survey is conducted, at which point participants will be asked to complete a consent form.

7.4.2. PHASE 2: SYSTEMS MAPPING OF CFAS

Precis: Systems mapping participatory workshops and interviews with key CFA stakeholders to explore models, components, accessibility and interactions, and to develop a draft map of the social and economic systems in which CFAs operate.

Timescale:

Months 11 to 12 (Sept - Dec 23)

Approach:

Phase 2 will apply a systems approach in a participatory way, capturing multiple perspectives of the food insecurity welfare system. It will address research questions: what do the social and economic systems in which CFAs operate look like; and what are the key organisational components and political pathways for successful/unsuccessful implementation of services provided to achieve inclusivity, accessibility and to move clients away from emergency food aid? We will address relationships and interdependencies within the food insecurity welfare system; the sustainability and scalability of both individual CFAs and the system as a whole; and barriers and enablers to success at both an organisational level and a system level to move beneficiaries away from the need for emergency food. Critically, Phase 2 will identify potential pathways through which success happens and the factors which may underpin and hinder success.

Sampling:

Phase 2 will involve two phases A and B. In Phase 2A, two workshops per location (25 stakeholders

per workshop) with key national and local stakeholders will be conducted. Building on relationships established in Phase 1, stakeholders will be invited to the workshops via sampling from a range of sectors. We are aware that the inclusion of CFAs providers and beneficiaries in the same stakeholder workshop could create uneasy power dynamics and could be uncomfortable for those who hold less power in this relationship (CFA beneficiaries). We will aim to include beneficiaries who have families and will provide support to ensure that they are comfortable and feel as though they have adequate information, assistance and, if requested, training to participate. The workshops will be followed by semi-structured interviews (N=30) [phase 2B] to probe the key themes in the systems mapping workshops and further explore interdependencies between different services (going beyond the immediate CFA system). Interviews will be both descriptive and exploratory. Interviewees will be recruited from national and local voluntary organisations; welfare services; national and local government; the food sector; CFA beneficiaries; and other delivery organisations (N=30), including those who take part in our workshops. We will apply a sampling framework to ensure representation (i.e. role/sector, location, approach). In addition to invitations using existing networks (and those identified during Phase 1), participants will be signposted by our partners (e.g. DEFRA, local authorities).

Data collection:

Each workshop (~3 hours) will involve an exploratory and confirmatory group model building process. In the first exploratory part, participants will be asked to identify factors involved in the system and describe how these relate. Results of Phase 1 will be used as probes to inform discussion. The second confirmatory part of the workshop will review both the findings of the exploratory component, in addition to the Phase 1 findings. Participants will be asked to reflect on and assess the factors, relationships and system developed in the first part. A draft map will be built during the session, which will be reviewed and finalised in Phase 3. In Phase 2B, data will be collected via a semi-structured interview conducted face-to-face or via phone/Zoom, as appropriate. The interview will last approximately one hour, conducted at a time and place convenient for the interviewee, recorded and transcribed verbatim. Participants in Phases 2A and B will be provided with full information about the study before agreeing to take part. This information will be repeated before the workshop or interview is conducted, at which point participants will be asked to complete a consent form.

7.4.3. PHASE 3: CO-DESIGN OF CFA TYPOLOGY

Precis: Participatory workshops with local and national stakeholders to co-design typology and glossary of CFA models and components.

Timescale:

Months 11 to 13 (Jan to Mar 24)

Approach:

Phase 3 will consolidate the findings from Phases 1 and 2 to co-design a typology and glossary of CFA models and components. This will be achieved via the delivery of one workshop per location (local stakeholders), followed by a final workshop with local and national stakeholders to finalise the typology, glossary and systems map (3 workshops in total).

Sampling:

Each workshop will include ~15 stakeholders; sampled from interviewees and participants involved in Phases 1 and 2. Continuity of participation will be critical to creating relationships and an environment in which participants are comfortable to speak openly and are familiar with the process of workshop co-production and aim of the research programme.

Data collection:

Local (face to face/hybrid) will predominantly adopt a confirmatory approach; (~1.5-2 hours each), in which participants will be asked to consider findings to co-construct a draft CFA typology and accompanying glossary. A final online national workshop (~1-2 hours) will then review and agree the typology, glossary and systems map developed in the previous workshops.

7.4.4. ANALYSIS

Phase 1 data will be analysed descriptively, including basic quantitative representations of models and components; open text response will be analysed thematically. GIS will also be used to geographically map services in the two locations. Phase 2A will present a systems map as a type of causal loop diagram (37) and data will be analysed qualitatively; generating themes from workshop discussion. We will also quantify the structure and strengths of the interpersonal networks between stakeholder members and organisational structures using a network analysis approach (38). Leverage points will be explored by applying a new framework, the Action Scales Model, which will enable us to work with our partners and stakeholders to conceptualise, identify and appraise actions within our CFA systems map (39). Phase 2B data will be analysed thematically and results will be written up for publication. This work will provide a stand alone output that will be shared (see WP3) and will support the focus of WP2.

8 WORK PACKAGE 2: LONGITUDINAL QUALITATIVE STUDY

8.1 Research questions

Primary research question:

1. Which CFA models or components are most beneficial at reducing food aid dependence in families? How and in what ways?

Secondary research questions:

2. How do different CFA models and components interact with the wider system, and to what degree is this interaction beneficial to food aid recipients, local authorities and food organisations?
3. When explored longitudinally, what is the role that different CFA models and components play when thinking about people's mental and physical health and their own sense of food security?
4. Does the way that differing models and components of CFA interact with, and benefit, families differ across different populations groups (level and longevity of food insecurity; family composition, ethnicity and religion)?
5. Do specific CFA models and components i) confer positive or negative unintended consequences ii) introduce, reinforce or weaken health inequalities?

8.2. Summary

A longitudinal qualitative study involving three integrated methods

8.3. Theoretical underpinning

Our complexity science/systems thinking approach will be underpinned by Hawe's (2009) "theorising

interventions as events in systems” (31) to understand which CFA models, components and prevention approaches are able to reduce dependence on forms of emergency food aid. Systems thinking enables us to move towards the main proponents of a high quality study being one which has a robust theoretical underpinning, with flexible methods, pragmatic adaptation and generative learning (40) and away from simplistic linear cause and effect assumptions (33).

One of Hawe’s key assertions is that an intervention (in our case, CFAs) should be disruptive in some way, either leaving a lasting footprint or ‘washing out’ depending on how well the dynamic properties of the system have been harnessed. Hawe purports that complexity tends to lie in the setting in which the intervention is introduced, and with which it interacts, rather than strictly with the intervention itself (30). Research sites/ communities are viewed as complex ecological systems which are contingent on setting, social networks and temporality. There must be an appreciation that change in complex systems often happens non-linearly. Hawe offers four courses of enquiry to shape a potential complex systems analysis: 1) Uncover how the intervention couples with context 2) Track changes in relationships 3) Focus on the distribution and transformation of resources 4) Assess displaced activities. To be clear, in this proposed study, one of our main interests relates to the impact that a CFA has on the system within which it operates and the lives of the individuals with which it interacts. Our theoretical approach is critical to understand whether, how and why different CFAs are able to bring about sustainable change.

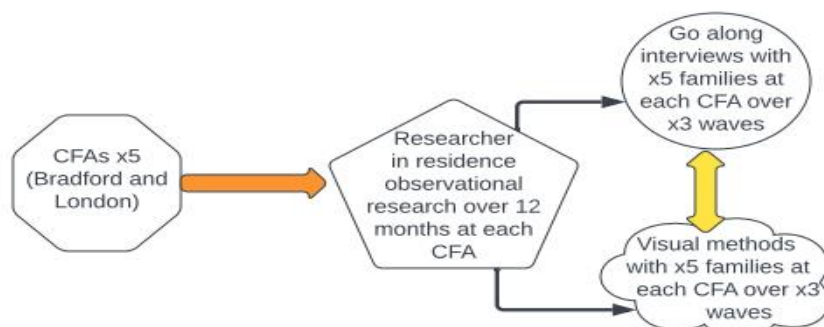
8.4. Sampling of CFAs and link between WP1 and CFA sampling in WP2

Five CFAs will be purposively sampled to ensure that primary, secondary and tertiary prevention approaches are all included. This will include three CFAs in Bradford and two in London, identified and sampled via the systems mapping and typology of CFA components conducted in WP1. We will intentionally recruit a diverse range of CFAs and include under-researched forms of CFAs, such as those which are responsive to local populations (for example, in terms of religion or ethnicity), perhaps have developed organically to meet local needs, and are informal in nature. Including informal CFAs in our sample is important because we know from the literature that some of the most vulnerable people in need of food aid never present to a formal food aid provider (25). The full extent of CFAs are not yet known but could include: religion based (church, mosque etc) food aid, community supermarkets, community cafes, soup kitchens, allotment schemes and more formalised/ franchised food banks. Importantly, any of these CFAs could deliver aspects of primary and secondary prevention such as: co-located welfare or employment support. Individual CFAs could include components of one, two or all three approaches, reflecting real work complexity.

8.5. Methods

In order to answer our research questions, the qualitative methods used need to be: a) deep and immersive b) inherently participatory c) longitudinal d) explicitly relational and forming a genuine partnership, trust and rapport with CFA beneficiaries and volunteers/workers. Methods such as brief focused ethnographies and one-off semi-structured interviews would only allow a brief dip ‘in and out’ of the field and are therefore insufficient here. Garthwaite (2016) notes in her seminal work ‘Hunger Pains’ about her two year ethnography spent at a formal food bank in the North East: “I felt like I was intruding on a very personal and private moment in people’s lives, often at a whole new low” (41). PPI representatives told us that building a trusting and long standing relationship with CFA beneficiaries was of utmost importance and that we should not expect this to be a quick or easy process. We propose three main integrated longitudinal qualitative methods: 1) Observational research via a Researcher in

Residence model 2) Go along interviews with CFA families and non-CFA families 3) Visual/ scrapbook study with both the above family groups



8.5.1. OBSERVATIONAL RESEARCH VIA RESEARCHERS IN RESIDENCE

Precis: A 12 month fieldwork period during which study researchers take on the role of ‘researchers in residence’ and become CFA volunteers, in order to embed themselves in the daily life of each CFA. This will happen at three CFAs in Bradford and two CFAs in Tower Hamlets.

Timescale: Months 13 to 24 (Mar 23 to Feb 24)

Approach:

We will adopt a Researcher in Residence (RR) approach (42) whereby the ethnographic researcher becomes embedded in and part of the CFA volunteer team. First used in healthcare research, this approach encourages real relationship formation, trust and rapport to develop between the researcher and those around them at the CFA, including beneficiaries, staff and volunteers. This contrasts to suspicion often levelled at the “researcher from the university” who stereotypically stands silently watching people whilst writing in their notebook. At heart of the purpose of the RR model is the idea that the key relationships are between research, policy and practice. This means that generative learning from the research can feed straight into local policy decisions and immediate CFA practice, rather than the core output only being for an academic audience. It potentially also further increases reciprocity on an organisational level and can offer CFA management useful learning in exchange for hosting a researcher.

Sampling of CFA beneficiaries, workers and volunteers:

Detail of how the five CFAs will be sampled is given in Section 4.4.3. Sampling of individuals at each CFA will be opportunistic and near universal. The RRs will have natural conversations with people they meet as they undertake the volunteer work assigned to them by the CFA. At the start, the RRs will aim for a maximum diversity approach. As time goes on, there will be a narrowing of focus (both purposive and theoretical), leading to a selection of participants who will be invited to take part in repeated go-along interviewing (Section 4.4.5.2). Regarding sample size, the researcher is likely to come into contact with scores if not hundreds of people (some fleetingly, other more substantively) during the time they spend at the CFAs.

Data collection:

Over a 12 month period, the RRs will spend time grounding themselves in the CFA, observing everyday

life and talking to people informally (42). RRs will be experienced qualitative researchers with a background in ethnographic research and who have previously worked with marginalised people. There will be 1.5 RR in Bradford and 1 RR in London.

At the beginning, each RR will spend around a day a week at each CFA they are hosted by for approximately three months (equating to 3 days of observations per week across all CFAs in Bradford and 2 days of observations in Tower Hamlets). As familiarity grows, the time spent in each CFA is likely to reduce down to around half a day a week for the remaining duration of fieldwork. During the first three months, the researchers will naturally meet CFA beneficiaries and begin to form relationships with people to undertake 'go along' interviewing. CFA staff/volunteers opinions and experiences will be gathered through informal conversations that opportunistically arise over approximately 12 months.

Observational foci:

The RRs will take on volunteer work at each of the CFAs to embed themselves (the extent and nature of this would be in agreement with each individual CFA). This could include practical elements such as receiving deliveries of food aid, sorting food, making food parcels and distributing food aid. It could include being trained in support strategies such as: supporting people to claim benefits or seek employment or signposting to other services. There is an intrinsic relational element to the RR role which will involve listening to people who may be in crisis, understanding people's frustrations and fostering a warm and supportive environment, often involving a cup of tea. Undertaking all of the above does not mean that the RR therefore becomes 'biased' as a key requirement of the role is continual reflection of their independence. We will draw on the findings of WP1 to ensure that a wide variety of CFA components are being observed.

Consent procedure:

Consent procedures follow that of Garthwaite (2016) (41). The RR will meet with CFA staff and volunteers prior to fieldwork commencing and written signed consent will be obtained from the CFA manager. Field notes will not be made regarding any interactions with CFA staff or volunteers who decline to take part in the study and where possible the RR will schedule their day a week at the CFA around this. CFA beneficiaries will encounter the RR as a volunteer and, wherever possible, the RR will introduce into the conversation that they are a researcher, tell people about the study and gain verbal consent for their story to be included in field notes. This may not be appropriate for fleeting contact or when CFA beneficiaries are in distress. We will ensure that field notes are never identifiable.

8.5.2. LONGITUDINAL GO ALONG INTERVIEWING

Precis: Go along, participatory interviews will be conducted over three waves with 25 families who access CFAs and 10 families who are food insecure but do not access CFAs

Timescale: Months 15 to 26 (May 23 to Apr 24)

Approach:

Go along interviewing is a person centred, participatory and interactive method that focuses on understanding changing experiences (43). This will involve a narrative interviewing style and following people's everyday lives to understand their food insecurity status in relation to supportive strategies

(including CFA models and components). The “go along” part relates to the researcher going (travelling) alongside the participant as they go about their everyday usual activities with researcher and participant talking along the way. This contrasts with a static one off interview where both participant and researcher sit down in one place (or over video/phone). Go along interviewing has been used in a diverse range of topics such as: exploring leisure experiences for people with mental health issues (44) older patient’s transitions from hospital to home (45) as well as exploring food practices and insecurity in later life (46).

Sampling of CFA beneficiaries:

Around five CFA beneficiaries with children per CFA will be recruited (25 families across both sites from three CFAs in Bradford and two CFAs in London). Our definition of ‘family’ is a parent or several parents with at least one dependent child under the age of 18. ‘Dependent child’ can be in any sense: biological, step, adopted etc. Evidence demonstrates that people with dependent children are more likely to be food insecure than those without children (11). It is likely that we will recruit parents when they visit the CFA but generally without children alongside them (especially during term time), but we are primarily interested in the family unit. Our higher order sampling strategy is that of the CFAs themselves (Section 4.4.3) as the population characteristics of their user base will then influence the sampling of individual families. We will aim to recruit a purposive spread of families primarily ensuring we have diversity in terms of ethnicity, religion and disability and making sure to include single parents. Our chosen city sites Bradford and London will enable this due to high levels of ethnic minority CFA beneficiaries and also disability (40% of all food parcels distributed at the Bradford city centre Trussell Trust food bank are halal food). In multi parent households, we will only include families where both parents are actively interested in taking part in the study.

Sampling of non-CFA beneficiaries:

Six families in Bradford and four families in London who are food insecure but do not or choose not to use CFAs will also be recruited. We will ask people in our existing networks (including community groups, schools and those who are working in the food system in both cities) with assistance identifying these families. Additionally, we will attempt to snowball outwards from the participants who do use CFAs to ask if they have relatives, friends or neighbours who may fit these criteria. Non CFA beneficiaries are likely to be a convenience sample.

Data collection (CFA beneficiaries):

We anticipate each family will take part in around three go along interviews lasting from half a day to a full day each. The three waves of go along interviewing will be evenly spaced out over a 12 month fieldwork period, where appropriate. Any variance in the number of go along days (minimum of two and maximum of four) will be driven by participant preference. We expect data to consist of between 38 and 75 ‘go along’ days with a mixture of field notes and audio recordings, predominantly weighted towards field notes. We use the term ‘audio recordings’ to capture a broad range of data which may naturally occur in the field. This may range from a few minutes duration about a matter that the participant deems significant for the researcher to record, through to a duration of 30-40 minutes where important context may be lost if an audio recording is not made (over and above field notes being taken).

We will interview people over the longitudinal period regardless of whether they are still using the CFA they were originally recruited from. We want to understand broadly whether they have moved out of, are slipping in and out or have stayed living in food insecurity and the complex factors that may have enabled this. In particular, we want to know which CFA models or components are most beneficial in

moving people away from food insecurity, and how this is being achieved, or not. The go along interviewing method is therefore integral to our complexity science approach, as we understand how different parts of the system are bolstering participants' food status (or not). We will over-sample our go-along interview participants in the first wave of recruitment to ensure we manage to retain a sufficient number of families in the third wave for the dataset to be meaningful.

Data collection (non-CFA beneficiaries):

This will be the same process as above. Data for non-CFA beneficiaries will consist of between 15 and 30 'go along' days. We are interested in interviewing people in the second and third wave who may have started using CFAs, due to our complexity science approach. We appreciated the panel's guidance to include non-CFA beneficiaries in our sample to provide a more balanced insight. To be clear, we are not aiming for a direct comparison of these two groups but rather to provide further contextual information as to why CFAs models may not be suitable or accessible for everyone who experiences food insecurity.

Interview foci:

This is likely to be broadly similar for both groups. It is difficult to specify precise topics in advance for go along interviewing as the researcher aims for a naturalistic conversation based on the activities which the participant undertakes that day. Conversations may focus on: health, food, relationships, culture, ethnicity/race, discrimination and racism, religion/faith, shopping, housing, stigma and shame, isolation, the benefits system, inequalities. The researcher will frame some questions on macro, meso and micro level moderators in our dynamic logic model and from key domains arising in our WP1 systems map. The conversation will be participant driven.

Consent procedure:

We will take written, informed consent from one person in the family unit, but will check verbally with other people who are likely to be observed that they explicitly consent. We will make it clear that consent is not universal and that participants can ask the researcher at any time to not write field notes about a particular situation/event. If children are present, parental permission and child assent will be sought as appropriate.

8.5.3. VISUAL /SCRAPBOOK STUDY

Precis: A predominantly visually driven sub-study using a mobile phone app (Indeemo) where data (photos, videos, audio, other media) is collected by participants themselves over three waves.

Timescale: Months 15 to 26 (May 23 to Apr 24)

Approach:

Visual methods have been used previously in qualitative research projects focusing on food insecurity such as: older people's susceptibility to malnutrition in the UK (46); the experience of food insecurity among single men in Scotland (47) and the experience of food insecurity among parents who were veterans in USA (48). Photo elicitation is a technique whereby study participants are asked to take photographs of things that are meaningful to them regarding the research topic and the photograph is then often used as a catalyst for discussion in a further research encounter, such as a go along interviews. Photographs simultaneously incorporate a sensory element better suited to food based research than a one off interview where participants may struggle to articulate everyday taken for granted assumptions regarding food (49).

Sampling:

We will invite all participants who are involved in the go along interviews to take part in the visual study. We are mindful that a small number of families may not want to submit photos/videos due to cultural or privacy reasons. Our minimum sample for this visual methods stage is therefore around 20 CFA using families and eight non-CFA using families.

Data collection:

All go-along interview participants will be invited to use a mobile phone ethnography app (Indeemo) to take self-selected photos and videos of things that are *meaningful to them* regarding food. The purpose of this is twofold: 1) photos and/ or videos may be used as a catalyst to engender discussion points during the go along interview akin to photo elicitation techniques and/or 2) they may stand alone as a visual depiction of what food and food insecurity means to the participant. Indeemo allows text or audio to be added as a caption to photos or videos, creating a “scrapbook” effect. We will demonstrate this scrapbook option to participants but will put them in control of whether they want to use captions or not. Participants will use Indeemo over a one week period over three waves, loosely matched to go along interviewing timescales. Participants will receive a daily soft prompt through the app from the research team. The minimum photo/video submission will be one medium/go along interview episode (no maximum).

Co-applicant Kapetanaki has previously successfully used this app based approach on a similar research project (50). Ownership of a smart phone remains high, including in low-income populations (51); however, our preparatory work with CFAs for this grant application indicates that some populations (particularly asylum seekers) may not have access. We will therefore provide smart phones to those who do not already have their own and fund phone data to all participants. Participants will receive support to help them navigate the app, where appropriate. Indeemo is structured like a social media app, so it is likely that most participants will be familiar with its interface style. PPI respondents highlighted that the use of photo/videos offers a means to communicate that does not rely on language or literacy.

Visual/media foci:

Participants may take photos of food they enjoy eating, food they eat on a day to day basis based on their circumstances, making a meal, buying or procuring the ingredients, children’s meals or children’s food preferences, a visit to the supermarket or local store or café/pub/restaurant, a visit to a CFA or interaction with other services, an abundantly or sparsely stocked fridge or cupboard, specific dietary requirements such as halal, gluten free or vegan/vegetarian. In Machray’s (2019) study about the food insecurity of single men in Scotland (47), one participant took several photos of a pan of pearl barley cooking on the stove. When asked why he had chosen to take this photo, he elaborated that he dislikes pearl barley but had nothing else in his cupboard to eat. This then opened up a conversation between the researcher and participant about food scarcity. Participants may wish to also photograph non-food related phenomena which impact on their ability to buy or enjoy food (such as official paperwork etc) which are important to their lives and the content of which may have shaped their relationship with food insecurity.

Consent procedure:

The Indeemo app has the ability to embed a digital information sheet and consent form as the front page. We will ask one participant per family to provide written informed consent regarding the upload of

their media within the app. We will ask for explicit consent for use of each individual photo or video selected for display in our travelling exhibition (see WP3).

8.6 ANALYSIS

Timescale:

Formative feedback loops = Months 13 to 32 (May 13 to Oct 24)

Summative descriptive and theoretical analyses = Months 25 to 32 (Mar to Oct 2024).

Data collected include field notes and audio recordings made by the researchers and photos/videos/other media taken by participants. We will use Dedoose for data management and storage (a computer assisted data qualitative software package which allows importation of photos and videos). Analysis will be carried out by the researchers in collaboration with the core members of the qualitative research team (LS and MB). Researchers (including our PPI co-app) will meet regularly to foster reflexivity and positionality, provide peer support, and contribute to analysis.

8.6.1. Formative: Regular feedback loops will embed into our analysis, with rapid findings predominantly derived from the Researcher in Residence observations. Headline findings will be fed back sensitively in an iterative loop cycle to local authorities, CFA workers/volunteers and people who use CFAs via briefing reports, presentations and targeted conversations.

8.6.2 Summative: We will bring together the data collected across all three qualitative methods and analyse them as a holism.

Descriptive analysis will generate a targeted understanding of a) what works, for whom, when and why, and b) which CFA models/components are most beneficial. We will structure the analysis using the pen portrait technique which is specifically designed to integrate the data from multiple qualitative methods collected over time to answer applied research questions (52). The fundamental principles of the pen portrait technique are to: draw on all the methods used, narrate interactions and events of importance at key time points, describe change occurring over time, and provide a well-rounded and holistic account of the phenomena being studied. Joint PI and WP2 lead Sheard developed this analytic technique after finding no guidance in the methodological literature about how to analyse change over time when combining multiple qualitative data sources. A crucial element is to notice what is happening between different waves of a longitudinal project and include explicit analytic commentary on this.

Theoretical analysis will reach high level conclusions by focusing our analytic attention on Hawe's (2009) "theorising interventions as events in systems" (31); abductively coding our data against the 'four courses of enquiry' contained within this. We will move backwards and forwards in iterative cycles between the theory and empirical data. This will involve understanding longitudinally: how CFAs sit within their wider context, track/map changes to key relationships over time, understand how resources are distributed and/or transformed, uncover displaced activities. This will allow us to understand system level impact when CFAs are viewed as complex ecological systems containing dynamic properties.

'Sense checking' of both the descriptive and theoretical analysis will come from PPI, CFA beneficiaries and strategic stakeholders at early and interim stages. We will place emphasis on iterative development of three dynamic logic models (one per prevention strategy) to propose CFAs underlying logic.

9. WORK PACKAGE 3: PATHWAYS TO IMPACT STRATEGY AND IMPLEMENTATION

9.1. Summary

We have built a dedicated “pathways to impact” work package to generate societal, academic and economic impact which runs throughout the whole project and is guided by the NIHR Adding Value Framework (53).

9.2. Co-design workshops

9.2.1. RELEVANCE TO THE NIHR ADDING VALUE FRAMEWORK

Our aim is to consider impact in every element of the project with momentum to continue beyond the end of the project through the establishment of long-term partnerships; facilitate via materials that can be used on many occasions and recommendations targeted at policy making bodies such as local authorities, the Food Standards Agency and DEFRA. **Research priorities** have been informed from consultation with local authorities and local organisations in both areas. We have established a dual site monthly working group as part of the NIHR PRP funded ActEarly consortium. **Design, conduct and analysis** of the proposed work will be continually guided and monitored by our PPI group and partners; achieved through update emails, PPI meetings and via discussion in our monthly management group (including our PPI co-I). **Regulation and management** of the research will ensure that risks are proportionate to outcomes and relevant approvals are in place. A risk management plan will be in place for both researchers who collect data and participants. **Methods and findings accessibility and use** will be ensured by storing the anonymised data following the appropriate consent processes in an open-access repository. Our methods will be clearly to support any follow up or replication studies contributing to academic impact. **Findings dissemination** will optimise impact via a variety of outputs.

9.2.2. PATHWAYS TO IMPACT STRATEGY

Our ‘pathways to impact’ strategy will produce accessible and usable outputs which reach key stakeholders and wider society so that primary prevention can be strengthened and change can be made towards food secure communities. All outputs will be created with accessibility in mind and plain English text will be used for outputs intended for the general population and policy makers.

9.2.3. IMPLEMENTATION OF PATHWAYS TO IMPACT

Table 1 provides an overview of the outputs/impact activities, their target audiences and their place within the study. Further detail is then provided below.

Table 1: Overview of impact activities and target audiences

Impact Output/Activity	When will take place	Target audience
Actionable toolkit	End of project	Policy makers / local and national government (Tackling poverty programme; Health and Well-being Boards; Public Health; Anti-poverty coordination group), DEFRA (Access to Food) and CFAs (national and local)

Impact Output/Activity	When will take place	Target audience
Systems map, CFA typology and glossary	End of WP1	Policy makers / local and national government (as above), CFAs and academic communities, Faculty of Public Health Food Special Interest Group
Travelling public exhibitions	End of project and beyond	General public (open access), families, policy makers / local authorities (Tower Hamlets and Bradford), CFAs and beneficiaries
Co-creation interpretation stakeholder workshops	End of WP2	WP1 & WP2 key stakeholders (local/national government, welfare services, CFAs, beneficiaries, voluntary sector)
Academic publications Academic conferences presentations	End of WP1 & end of project	Academic community and policy makers (including, local and national government), Faculty of Public Health Food Special Interest Group
Policy brief	End of project	Policy makers / local and national government (as above)
Other research briefs	End of project	CFA beneficiaries and food supply chain members (including commercial food outlets, volunteer organisations; (e.g. Rethink Food)
Formative feedback loops	During WP1 & WP2	Policy makers / local and national government (Tackling poverty programme; Health and Well-being Boards; Public Health), DEFRA (Access to Food), CFA staff/ volunteers, beneficiaries, Faculty of Public Health Food Special Interest Group
Social media presence, website, press & community radio	During the whole project	General public, families (e.g. via links with cohorts like Born in Bradford), academic community and policy makers

9.2.3.1 Co-creation interpretation stakeholder workshops:

We will facilitate two co-creation, end-of-study stakeholder (n=~25) workshops (one in each location-though presenting combined findings) to debate and critique study findings, recommend changes, and highlight what a) an exit strategy for food aid and b) a food system which supports dignified and inclusive access to food might look like. Participants will include all the above mentioned audiences and other stakeholders revealed through our system mapping. Stakeholders will work in small groups, facilitated by the research team to critique and elaborate on them. Findings drawn from this event will inform the final analysis and outputs.

9.2.3.2 Outputs:

Actionable Toolkit: We will produce an 'Actionable Toolkit' written for local authorities (e.g. Tackling poverty programme; Health and Well-being Boards; Public Health; Anti-poverty coordination group), DEFRA (Access to Food) and CFAs (national (e.g. Trussell Trust) and local). This will provide information on the typology (and glossary) of different CFA components and guidance on what works for whom, when and where. We will work in collaboration with our partners and PPI to determine the format and approach of the toolkit, though envisage a freely accessible website (requiring registration) as a key resource.

Travelling Public Exhibitions: We will develop a Travelling Public Exhibition for display in both locations. This will be a powerful platform to share our findings with the wider public, encourage a dialogue on the topic and to give voice to the most vulnerable within these communities. The exhibit will comprise of our participants' data, captured through WP2. In addition to images, videos and stories (audio clips) captured by participants along with real life story vox pops will be compiled so that visitors can understand the impact of food insecurity and reflect on what we can do as a society to create food secure communities. No materials will be shared as part of the exhibition without the participants' consent. WP1 and WP2 stakeholders will be invited to attend the exhibition and invitations for the wider public will be made through social media and local networks (e.g. Born in Bradford, Better Start Bradford, Bromley by Bow Centre) to ensure publicity at a local and national level (including families). The exhibition will take place in local venues in Bradford and in London. It will also be available for display beyond the study timeline, where we will secure additional (local) funds to re-use this output over time as part of events such as (inter)national conferences and local events, (e.g. the York Festival of Ideas, Born in Bradford festival etc).

Other outputs: We provide here a list of planned outputs, but anticipate that more will be produced throughout the process, in response to national/local policy/publicity and via engagement opportunities (identified via our PPI and partners):

- Policy Brief: A policy brief will be produced for dissemination, at the end of the research, for key policy making bodies such as DEFRA (Access to Food (UK Food Security Report and Economically Viable), the Food Standards Agency (FSA), relevant APPGs, UK Food Security Assessment, National Food Strategy team, the Faculty of Public Health Food Special Interest Group and local government (e.g. Tackling poverty programme; Health and Well-being Boards; Public Health; Anti-poverty coordination groups).

- Academic publications: We will work on academic papers during the project, as well as at the end of the study. Due to the interdisciplinary nature of the project, we will target food, public health, marketing/management and sociology outlets. We aim for a minimum of three papers in high quality outlets, such as Food Policy, BMC Public Health and Sociology of Health & Illness.

- Academic conferences: We will disseminate our findings to relevant reputable conferences across the duration of the study and at the end. We aim for a minimum of two conferences at national and international level, such as British Sociological Association, Faculty of Public Health and Transformative Consumer Research.

- Other research brief(s): Depending on our data we will aim to produce research briefs that may be relevant to audiences such as the CFA beneficiaries and the food supply stakeholders on how to support

food secure communities.

9.2.3.3 Impact activities:

- **Formative feedback loops:** We have planned proactive engagement with local authorities, DEFRA, CFA workers and beneficiaries to disseminate interim findings on a rolling basis via draft reports, presentations and informal conversations. This will be supported through open and ongoing communication throughout the research. It will both, help to improve of our methods/approach and provide them with updated insights during our study, as part of the co-creation process.

- **Social media:** We will have an active presence on social and mainstream media through blogs, press releases, social media posts and a project specific website. To reach a broad academic and non-academic audience, we will create an accessible website for the project and promote this via social media, the webpages of our respective Universities (and linked projects with families, including Born in Bradford and ActEarly), local authorities, partners and CFAs. We will regularly post blog stories on the website and seek permission to link to these from our partner organisation website (also be disseminated via social media). We will regularly share updates via our personal social media accounts on Twitter, FB and LinkedIn and we will set up a project specific social media account (platform decided in consultation with our PPI group). At key points of the project, we will disseminate findings with a news release with the help of the university's Press Offices.

- **Long-term impact:** Long-term impact of the project will be ensured via continued strong CFA, local authority and central government partnership (including DEFRA and FSA). These will support multi-level implementation of our recommendations. During the course of the project, we will be mindful in identifying ways to maximise impact to support food secure communities and we will address these ideas in our end-of-project outputs. In addition, we will keep disseminating our reports, toolkits and recommendations and contributing to policy advocacy activities. We will use our findings to inform future projects about food security. As noted above, the travelling exhibition can take place beyond the project's duration to maximise the impact of our findings.

10. WITHDRAWAL

The right of participants (including stakeholders and participants in WP2) to refuse participation without giving reasons will be respected. They will remain free to withdraw from the study at any time without giving reasons and without prejudicing their relationship with any relevant organisations.

11. PARTICIPANT SAFETY

The interests of all participants, including CFA beneficiaries and their families, the researchers will be guarded by the normal duties of care, following appropriate information and clinical research governance approval procedures. This includes enhanced DBS as appropriate. We will work with CFAs to support the development of their risk assessments for beneficiaries participating in the research.

12. DATA MONITORING

Data will be monitored for quality and completeness by the co-leads and research fellows. Missing demographic data will be chased until it is received, confirmed as not available or the study is at analysis.

A data monitoring committee is not necessary. However, in addition to supporting the design and implementation of intervention, the oversight committee will review data or safety issues that arise. Unless these are deemed to need an urgent response (e.g. breach of data protection), matters will be discussed during each planned committee meeting.

13. QUALITY ASSURANCE, ETHICAL CONSIDERATIONS AND PERMISSIONS

Safeguards will be put in place to ensure that participant confidentiality is preserved at all times. The UoY and University College London will act as the joint Data Controllers under the General Data Protection Regulations (GDPR). Both universities will ensure that participant information is safeguarded, and an appropriate confidentiality and data security agreement will be in place within the collaboration agreement. The information provided to participants will identify those individuals who will require access to their data and identifiable details and appropriate permission from the consenting participant will be obtained. Research staff at both locations will be responsible for ensuring that any data/documentation sent from the field is appropriately anonymised and/or protected in accordance with 2018 Data Protection Act (and successor legislation).

University ethics approval will be obtained from the University of York ethics committee and all research will meet regulatory requirements in line with principles of the Declaration of Helsinki, and the Research Governance Framework for Health and Social Care. Approval will also be sought for any substantial amendments required during the course of the study. Detailed protocols, participant information sheets, and consent forms will be developed. Approval will be sought and documented prior to any participants entering the study.

14. CONFIDENTIALITY

All information collected during the course of the study will be kept strictly confidential. Information will be held securely on paper or electronically with the Department of Health Sciences (University of York) and the Social Research Institute (UCL Institute of Education, London). Both sites will comply with all aspects of the 2018 Data Protection Act and GDPR. Operationally this will include:

- Details of consent
- Where anonymous documentation is required, sites are responsible for ensuring only the instructed identifiers (e.g. postcode) are present before sending to the University of York.
- Site names, address and demographic information number will be collected when they are recruited into the study, but all other data collection forms that are transferred to or from the University of York will be coded with a number and will include two identifiers (the participant's initials and date of birth)
- If participants withdraw consent from further collection of data, the existing data that they have provided up to the date of withdrawal, will remain on file and will be included in the final study analysis.

15. ARCHIVING

At the end of the study, data will be securely archived at each University for a minimum of 5 years.

16. STATEMENT OF INDEMNITY

This study is sponsored by the University of York and the University of York will be liable for negligent harm caused by the design of the study.

17. STUDY ORGANISATIONAL STRUCTURE

17.1 TEAM

Study management and oversight:

The research will be led by the joint Lead Investigators, and day-to-day management, study coordination, data management, and analysis oversight will be provided by the study team, comprise the chief investigators, co-applicants (including our PPI representative), researchers, who will meet face-to-face or via teleconference, monthly during set-up, and approximately - to 6-monthly during recruitment and data collection (or as required by study progress). A management group will meet monthly, reporting to an independent steering committee chaired by Kristin Bash (senior public health specialty registrar and co-Chair of Faculty of Public Health Food Special Interest Group). A representative from DEFRA will also attend steering committee meetings and observers from PHR will be invited to all meetings. A Data Monitoring and Ethics Committee (DMEC) will not be convened due to the low risk nature of the research; however, a DMEC function will be adopted within the steering committee to oversee data, safety and ethics. Serious adverse events will be recorded but are not anticipated as this is a qualitative study.

17.2 RESPONSIBILITIES

Sponsor

The Sponsor is the organisation that takes responsibility for confirming there are proper arrangements to initiate, manage, monitor and finance the study. The Chief Investigators are both employed by the University of York.

Chief Investigators

The Chief Investigators are responsible for the design, management and reporting of this study, the whole research programme and its constituent parts. Specifically they are responsible for oversight of:

- Overall supervision of the study, in particular, maintenance of confidentiality and study progress
- Scientific and clinical input to the study documentation
- Oversight of documentation submitted to external bodies (including the original and any subsequent submissions to ethics and Centres)
- Review and reporting of research misconduct
- Ensuring that the study is conducted in accordance with the principles of Good Clinical Practice
- Maintenance and archiving of study documentation
- Ensuring all appropriate permissions are in place prior to recruitment
- Trial reporting to the appropriate authority / body – including misconduct, end of study, early termination, adverse events, serious breaches of GCP.
- Oversight of data Management and analysis.

Research Fellows

Study-specific research fellows (University of York and University College London (UCL) will have responsibility for:

- Maintenance and archiving of study documentation, including a Study Master File
- Preparation of study documentation
- Preparation of applications for ethical review (in consultation with co-applicants and Sponsor)
- Preparation and submission of protocol amendments, and dissemination of approved amendments as appropriate
- Developing and providing information sheets
- Liaising with collaborators and partners to recruit stakeholders and participants
- Co-ordinating workshops and interviews
- Undertaking participatory research and data collection
- Undertaking analysis
- Supporting dissemination activities
- Managing oversight committees (steering committee and public advisory committee)
- Monitoring consent

Co-applicant Group

This comprises the Chief Investigators, all co-applicants and research teams (research fellows within University of York and UCL). Bryant (Joint lead), will oversight and expertise in evaluation and food/nutrition research. Sheard (Joint lead) will support the oversight, providing expertise in qualitative methods, and WP2 lead. Power will provide food insecurity and CFA expertise, and will be the WP1 co-lead; Doherty will provide food systems expertise and is another WP1 co-lead; Pickett will lead on inequalities work; Islam will be the lead public involvement (organising meetings/workshops and supporting members); Mirza is public involvement co-app (food asset beneficiary); Cameron will be the for Tower Hamlets and will support the London based RF; Dunlop and Kershaw are our local authority representatives; and Kapetanaki will provide expertise in social marketing and food policy and will be the WP3 lead.

Local research teams

Local research teams based in York and London will be responsibility for the set-up, on-going management, and promotion of the project. This includes: (i) protocol completion, (ii) data collection requirements, (iii) obtaining ethical approval (iv) completing cost estimates and project initiation, (vi) facilitating the steering committee meetings, (vii) monitoring of site conduct (vii) interpretation of results and contribution to publications.

Partnership

We have established a partnership with DEFRA, who are committed to guiding the process and dissemination (see Letter of Support). DEFRA is particularly interested to learn more about models and approaches that are used by CFAs to support decisions around how best to spend available funding. With this, they have advised us to consider sustainable and scalable approaches. We have agreed to share our reports with DEFRA (including feedback loop reporting). We will continue to work closely with local authority partners in Bradford Council and Tower Hamlets, who will facilitate the relationship with

CFAs and support the co-design of resources/policy documents. The Faculty of Public Health Food Special Interest Group have also agreed to partner, providing expertise, oversight and supporting impact activities. Additionally, we have established partnerships with a variety of community partners. In Bradford: Foundation Trust, Salvation Army, Bradford Metropolitan Food Bank Committee, Jama Khathabun Nabiyeen Soup kitchen, NAFS Community Action. In Tower Hamlets: Bromley by Bow community centre, and Food Partnership sub group 'Fair Food for All Group, Food Hub (including >20 organisations).

17.3 PROJECT OVERSIGHT

17.3.1. STEERING COMMITTEE

The steering committee will be responsible for monitoring: study progress, adherence to protocol and safety. They will also discuss optimal approaches to deliver the project, provide insight into the wider landscape for the project (including changes to policy) and will support dissemination to promote impact. The committee will meet once during the set-up period and six monthly thereafter for the duration of the research (18 months). Members will be officially recognised via collaboration agreements to meet funder obligations. The Chief Investigators (MB/LS) and other members of the internal project team (as appropriate) will attend all committee meetings and present and report progress as observers. The Board will determine, agree and operates in line ToR (agreed by at their first meeting).

17.3.2. PARENT ADVISORY COMMITTEE

In addition to local authority driven research questions, our focus and methods have been extensively considered by CFAs, beneficiaries, other people living with food insecurity and by community research advisory committees in both areas. We will work closely with CFAs, beneficiaries and partner organisations throughout, including a CFA beneficiary representative as part of our immediate team (Mirza). This will be supported by partnership organisations, a dedicated co-applicant (Shahid) and training (54).

Set-up: We will implement guidance from our recently published co-production strategy (<https://actearly.org.uk/actearly-co-production-strategy>). During setup, we will continue to consider the mechanisms by which data will be collected, asking our PPI representatives and well connected community activists from a variety of backgrounds to consider how to implement our proposed data collection methods. As the aims of this research are unique and targeted towards a certain need, we will create a specific PPI group (7-10 people) which will comprise of people who are affected by food insecurity with a smaller selection of people who have extensive experience of working/volunteering in this area. This allows us to have a meaningful and engaging meeting with a diversity of perspectives and backgrounds. It also means if some people send apologies then a meeting can still go ahead.

A challenge in recruiting CFA beneficiaries for PPI is the associated stigma often felt by those using such services. We have listened to the challenges people have described and will progress recruitment to the PPI group with full support from our nominated PPI representative who has experience of using and volunteering within CFAs. Recruitment will also utilise a tried and tested approach that we have successfully used in multiple other projects, including the use of existing networks, and through CFAs, where we will ask staff/volunteers to consider people who access their services who may be interested in supporting this research by contributing as PPI members. We will produce a one-sided page with details about what this entails with contact details for co-applicant (Islam) who will meet people on a one-to-one basis to explain the project, highlight the kinds of work the group will be involved with and identify

training needs.

Study initiation: In our first meeting with the PPI group, we will spend time familiarising members with the purpose and objectives of the research and allow people to get to know each other. We will consider a stepped approach providing a 'light touch exercise' in the first meeting, where arts and crafts based approaches will be used to consider the issues of food insecurity and the impact of this on health. Earlier sessions with our PPI members will then focus predominantly on supporting our protocol, including the best ways to recruit participants.

Data collection: The PPI co-I and PPI group will play a central role in advising about and collecting data, including advising about the types of questions (and approaches used) within workshops (WP1) in addition to the approaches/themes of discussion for go-along interviews. We also intend to provide training to PPI group members so that they can support data collection, (qualitative interviews and gathering data at the workshops). We anticipate that participants will be put at ease if interviews are supported by people who can relate to their experience; thus opening up opportunities for a discussion about the topic with a degree of confidence. This is a method one of the co-applicants (Islam) has previously applied in a mental health setting and it was favourably viewed by both the service beneficiaries who were interviewers and interviewees (55).

Write up and dissemination: Our plans for dissemination will always include advice and input from PPI members, including creative approaches such as open space meetings, podcasts, and attendance at community radio stations. There will be opportunities at different stages of the project for PPI members to contribute to written material (including blogs, magazine articles and academic journals). Where PPI members have made a contribution to research, they will be offered an opportunity to be named as authors (55). Members of the PPI group will be invited to the exhibitions described in WP3 and will be given an opportunity to actively participate in dissemination within these events (either by pre-recording video to play as part of the exhibition, or via live panel discussions that may sit along the visual displays).

18 DISSEMINATION & IMPACT

Based on the Added Value framework pillar '**Appropriate and effective dissemination**' we will ensure our findings have the greatest chance of impact. This will be integrated within our bespoke pathways to impact strategy, described above within WP3.

Accessible and useable outputs will be generated throughout the duration of the project as it has been described under WP3.

All the above outputs are designed to inform and engage with the audiences identified during WP1, CFAs and CFA beneficiaries (service beneficiaries), during, at the end and post grant. Details of how this will be achieved are described in WP3 methods (Section 4.5).

By dedicating a WP on impact, we are ensuring that all relevant audiences at local and national level have access to our findings. All planned outputs will be accessible and relevant to the various audiences we have identified in WP1 and WP2 (Table 1). Particularly, the public exhibition, the press releases and the online dissemination of our findings as described under WP3 will be used to reach society as a whole. The research/policy briefs, the toolkit, the workshops and the proactive engagement activities (formative feedback loops) will have more specific target audiences aiming at local and national

stakeholders.

Societal/economic impact:

Findings will support the development and/or redesign of policies to support CFA delivery to reduce reliance on emergency food (primary prevention). This will be achieved through our engagement with CFAs and CFA beneficiaries during the duration of the study and the dissemination of our findings via our proposed toolkit. Our planned exhibition will not only provide a means to share findings, but engage all stakeholders to consider their implications.

Policy impact:

Findings could be used to inform appropriate food and social policies to reduce food insecurity at a national level and better understanding to provide targeted resources and reduce over-reliance on emergency responses at a local level. This will be achieved through policy briefs and presentations/promotion of our toolkit to policy makers at various levels.

Academic impact:

We will contribute to literature and discourse around the topics of food security, food aid and welfare policies within public health and sociology, service design and provision.

Scalability:

All aspects of the proposed work will capture information about the characteristics of CFA beneficiaries and organisations, in addition to the systems in which they operate in order to explore the translation of our findings. However, rather than dismissing transferability due to key differences, we will highlight what works best for whom and in what situation. This will consider aspects of transferability including, population, intervention, implementation context, environmental context and researcher conduct (as described by Munthe-Kaas and Nguyen (56)). To support this process, we have developed sampling strategies for the recruitment of WP1 participants, CFAs and CFA beneficiaries to ensure that we include a range of stakeholder characteristics. We also plan to provide multilingual materials for CFA beneficiaries and the general population with the support of multi-lingual teams who are focused on addressing inequalities.

Thus, we will ensure that our findings are relevant to similar CFAs across the country to support decision making in local governments. At the same time, our accessible outputs and recommendations will be developed to optimise the implementation of approaches that ensure CFAs improvements across the UK, so that these are best placed to effectively contribute to primary prevention of food insecurity. A key part of this will be policy briefs, which will feed into local and national policy making processes related to food insecurity, food aid and welfare policies.

All participants and CFAs will receive a copy of our tailored reports with recommendations and will be invited to the exhibitions. Stakeholders who will participate in the workshops will receive relevant research briefs and reports. Those who are on social media will be informed about the project's social media handles and how they can follow our updates.

19 PUBLICATION POLICY

Authorship and acknowledgement

The success of the research depends upon the collaboration of all participants. For this reason, credit for the main results will be given to all those who have collaborated in the research, through authorship and

by contribution. Uniform requirements for authorship for manuscripts submitted to journals will guide authorship decisions. These state that authorship credit should be based only on substantial contribution to:

- conception and design, or acquisition of data, or analysis and interpretation of data
- drafting the article or revising it critically for important intellectual content
- final approval of the version to be published
- and that all these conditions must be met (www.icmje.org).

In light of this, the Chief Investigators, and relevant staff will be named as authors in any publication, and an appropriate first author agreed through discussion amongst the co-applicant group. In addition, all collaborators/partners will be listed as contributors for, giving details of their roles in planning, conducting and reporting the research. The stakeholders and co-design team should be acknowledged in all publications (latter named if agreed by individuals), as should the funding programme (as detailed below). Other key individuals will be included as authors or contributors as appropriate and at the discretion of the co-applicants.

Individual collaborators must not publish data concerning their participants which is directly relevant to the questions posed in the research until the main results have been published. Local collaborators may not have access to data until after publication of the main results.

Processes for the drafting, review and submission of abstracts and manuscripts

The agreed first author of abstracts is responsible for circulating these to the other members of the co-applicant team for review at least 15 days prior to the deadline for submission.

The agreed first author of manuscripts is responsible for ensuring:

- timely circulation of all drafts to all co-authors during manuscript development and prior to submission
- timely (and appropriate) circulation of reviewers' comments to all co-authors
- incorporation of comments into subsequent drafts
- communication with the Partnership Board

The first author is responsible for submission of the publication and must relevant parties informed of the abstract's or manuscript's status. The Partnership Board will be kept informed of rejections and publications as these occur. On publication, the first author should send copies of the abstract or manuscript to the steering committee chair, the co-applicant team, the Sponsor and to all other co-authors, and ensure communication with the funder as outlined below.

Author contributions

At the earliest possible stage the proposed contributions of authors to a planned paper will be mapped out using the Credit Taxonomy to determine order of authorship. This will be facilitated by the Work-package Lead and Chief Investigator. Generally the first author will be the person who has contributed the most to a paper and the last author will be a senior position (for example the chief investigator or work-package lead as appropriate). As a rule of thumb the order of remaining authors will correspond to effort involved in producing the proposed output. Where appropriate joint first author positions and joint senior author positions can be considered.

For core papers related to the NIHR grant (e.g. answering the projects research questions as outlined in the grant proposal) it is expected that Work-package Leads and the Chief investigator will have substantial input into producing the final outputs. For these core outputs, where a first author opportunity has been given to an early career researcher or researcher new to the project it may be appropriate for the senior author to take the corresponding author role.

All proposed authors should be asked to complete their Credit Taxonomy contributions upon receiving the first draft of the paper. These should then be reviewed by the first author and Work-package Lead / Chief Investigator and the proposed order of authors should be finalised when the second version of the paper is circulated.

It is important to recognise the contributions may change throughout the research lifecycle due to unanticipated events, for example due to team changes or if the project has changed in focus or scope. Open communication about changes is vital to ensure that proposed changes to the inclusion and order of paper authors are transparent and agreed by all authors.

Where there are any disputes over the content, authorship or contributions of a paper, these should be raised immediately with the lead author. Where there is no resolution, the dispute will be raised with the work-package lead and chief investigator. If there is still no resolution it will be raised with the steering committee group where a final decision will be made.

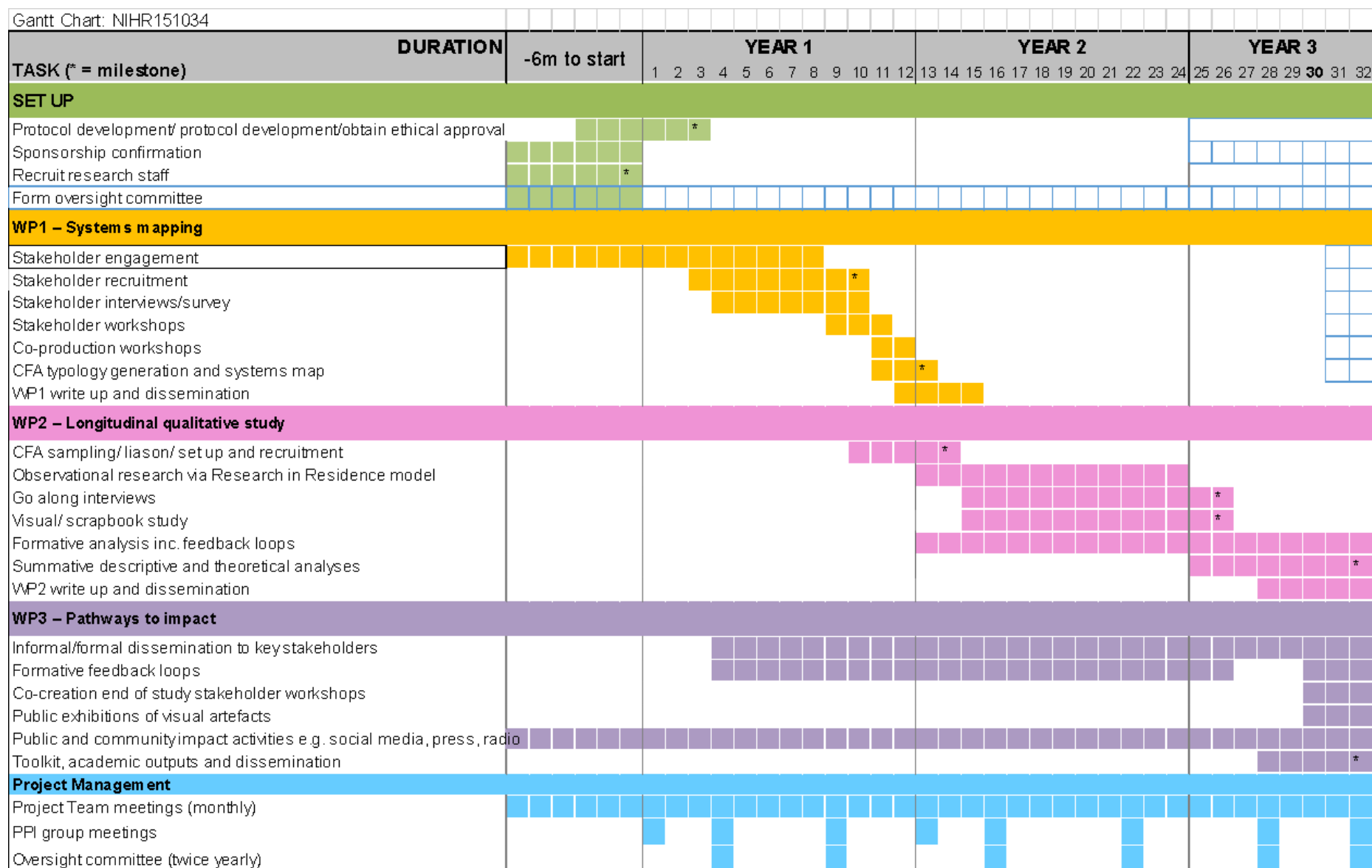
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The following text needs to be included within all publications:

This study/project is funded by the NIHR Public Health Research programme (NIHR151034). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

Please also acknowledge any other NIHR support your project may have received; for example, from our Clinical Research Network or an NIHR Clinical Research Facility or Biomedical Research Centre

20 GANTT CHART



21 REFERENCES

1. Soma T, Shulman T, Li B, Bulkan J, Curtis M. Food assets for whom? Community perspectives on food asset mapping in Canada. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*. 2022;15(3):322-39.
2. Baker L. Food asset mapping in Toronto and Greater Golden Horseshoe Region. *Integrating Food into Urban Planning*. Cabannes Y, Marochinno C, editors: UCL Press; 2018.
3. Lambie-Mumford H. *Hungry Britain: The rise of food charity*. Bristol: Policy Press; 2017.
4. Bramley G, Treanor M, Sosenko F, Littlewood M. *State of Hunger: Building the evidence on poverty, destitution and food insecurity in the UK*. 2021. <https://www.trusselltrust.org/wp-content/uploads/sites/2/2021/05/State-of-Hunger-2021-Report-Final.pdf> Accessed
5. Power M, Doherty BOB, Small N, Teasdale S, Pickett KE. All in it Together? Community Food Aid in a Multi-Ethnic Context. *Journal of Social Policy*. 2017;46(3):447-71.
6. Goodwin S. Food aid charities fear the worst as the cost of living crisis takes hold. *Bmj*. 2022;376:o416.
7. Stuff JE, Casey PH, Szeto KL, Gossett JM, Robbins JM, Simpson PM, et al. Household Food Insecurity Is Associated with Adult Health Status. *The Journal of Nutrition*. 2004;134(9):2330-5.
8. Tarasuk V, Cheng J, Gundersen C, de Oliveira C, Kurdyak P. The Relation between Food Insecurity and Mental Health Care Service Utilization in Ontario. *Can J Psychiatry*. 2018;63(8):557-69.
9. Holben DH. An Overview of Food Security and Its Measurement. *Nutr Today*. 2002;37(4):156-62.
10. Loopstra R, Reeves A, Tarasuk V. The rise of hunger among low-income households: an analysis of the risks of food insecurity between 2004 and 2016 in a population-based study of UK adults. *J Epidemiol Community Health*. 2019;73(7):668-73.
11. Pensions DfWa. Family Resources Survey: financial year 2019 to 2020 2021. In: Gov.UK, editor. UK Data Archive. 2019-to-2020/family-resources-survey-financial-year-2019-to-20202022.
12. O'Connell R, Brannen J. *Families and Food in Hard Times: European Comparative Research*: UCL Discovery; 2021.
13. Rachel Loopstra. Vulnerability to food insecurity since the COVID-19 lockdown: Preliminary report. King's College London; 2020 14th April. Accessed
14. Office for Budget Responsibility. Coronavirus analysis. 2020 14.07.20. <https://obr.uk/coronavirus-analysis/> Accessed
15. IFA. N. Independent food banks and increased need for emergency food parcels since the outbreak of COVID-19 2020 <https://www.foodaidnetwork.org.uk/ifan-data-since-covid-19>. Accessed
16. Graven C, Power M, Jones S, Possingham S, M. B. The impact of COVID-19 on the provision of food aid in Bradford. 2020 in vulnerable Groups. 2021. <https://www.bradfordresearch.nhs.uk/findings-and-resources> Accessed
17. Power M, Doherty B, Pybus KJ, Pickett KE. How COVID-19 has exposed inequalities in the UK food system: The case of UK food and poverty version 2. Emerald Open Research. 2020.
18. EFRA Committee. COVID-19 and food supply. First Report of Session 2019–21. 2020. <https://committees.parliament.uk/publications/2187/documents/20156/default/> Accessed 22.10.20
19. Public Health England. Tackling food poverty on a local and national level. 2013. <https://publichealthmatters.blog.gov.uk/2013/12/23/tackling-food-poverty-on-a-local-and-national-level/> Accessed 16.10.20
20. Department for Levelling Up Housing and Communities. *Levelling Up the United Kingdom*. 2022. <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom> Accessed 21.11.22
21. Public Health England. Local Authority Health Profile 2019: Health Summary for Bradford. 2019. <https://fingertips.phe.org.uk/static-reports/health-profiles/2019/e08000032.html?area-name=bradford> Accessed 16.10.20
22. Public Health England. Public Health Outcomes Framework. 2018/19. <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/13/gid/1000049/pat/6/par/E12000003/ati/101/are/E08000032/cid/4> Accessed 16.10.20
23. Power M, Uphoff EP, Stewart-Knox B, Small N, Doherty B, Pickett KE. Food insecurity and socio-demographic characteristics in two UK ethnic groups: an analysis of women in the Born in Bradford cohort. *Journal of Public Health*. 2017;40(1):32-40.
24. Dickerson J, Kelly B, Lockyer B, Bridges S, Cartwright C, Willan K, et al. Experiences of

- lockdown during the Covid-19 pandemic: descriptive findings from a survey of families in the Born in Bradford study [version 2; peer review: 2 approved]. Wellcome Open Res. 2021;5(228).
25. Power M, Uphoff E, Kelly B, Pickett KE. Food insecurity and mental health: an analysis of routine primary care data of pregnant women in the Born in Bradford cohort. *J Epidemiol Community Health*. 2017;71(4):324-8.
 26. Yang TC, Sahota P, Pickett KE, Bryant M. Association of food security status with overweight and dietary intake: exploration of White British and Pakistani-origin families in the Born in Bradford cohort. *Nutrition Journal*. 2018;17(1):48.
 27. M. P. Hunger, Whiteness and Religion in Neoliberal Britain An Inequality of Power. Press BU, editor2022.
 28. Vafai Y, Cameron C, Mansukoski L, Berwick B. The impact of the COVID-19 emergency food hub programme on food insecurity in Tower Hamlets. ActEarly study report. . 2021.
<https://actearly.org.uk/wp-content/uploads/2021/12/ACFrOgAdFXXpho7DV4l0V2lrRPWemfOr9Q0TirH5Xb3W0tAL58u7w23-5zPEYWIZ5z8FZA1xko-Lp8utRXmVvAYeppspTaEEV6yl69alialiWOpcP8YrKSI7u-d0yo52Vq1gqLEhfWj17ZLeXMr3.pdf> Accessed
 29. Sosenko F, Littlewood M, Bramley G, Fitzpatrick S, Blenkinsopp J, Wood J. State of Hunger: A study of poverty and food insecurity in the UK. 2019. <https://www.stateofhunger.org/wp-content/uploads/2019/11/State-of-Hunger-Report-November2019-Digital.pdf> Accessed
 30. Affairs D. United Kingdom Food Security Report 2021: Theme 4: Food Security at Household Level 2021
 31. Hawe P, Shiell A, Riley T. Theorising interventions as events in systems. *Am J Community Psychol*. 2009;43(3-4):267-76.
 32. The Health Foundation. Evidence Scan: Complex Adaptive Systems. 2010 August.
<https://www.health.org.uk/sites/default/files/ComplexAdaptiveSystems.pdf> Accessed
 33. Egan M, McGill E, Penney T, Anderson de Cuevas R, Er V, Orton L, et al. NIHR SPHR Guidance on Systems Approaches to Local Public Health Evaluation. London: National Institute for Health Research School for Public Health Research; ; 2019. Accessed
 34. Kim D. Systems Thinker resources: Leverage Networks, Inc. ; Last accessed 16.10.20
<https://thesystemsthinker.com/category/how-to-guides/>. Accessed
 35. Project TDM. Systems Thinking: Concepts and Frameworks: The Five Learning Disciplines Last accessed 16.10.2020 <http://donellameadows.org/systems-thinking-resources/>. Accessed
 36. Mills T, Lawton R, Sheard L. Advancing complexity science in healthcare research: the logic of logic models. *BMC Medical Research Methodology*. 2019;19(1):55.
 37. Binder T, Vox A, Belyazid S, Svensson M, Haraldsson H. Developing systems dynamics models from causal loop diagrams. 2004.
 38. Borgatti SP, Mehra A, Brass DJ, Labianca G. Network analysis in the social sciences. *Science*. 2009;323(5916):892-5.
 39. Nobles JD, Radley D, Mytton OT. The Action Scales Model: A conceptual tool to identify key points for action within complex adaptive systems. *Perspectives in public health*.0(0):17579139211006747.
 40. Greenhalgh T, Papoutsis C. Studying complexity in health services research: desperately seeking an overdue paradigm shift. *BMC medicine*. 2018;16(1):95.
 41. Garthwaite K. Hunger Pains. Bristol: Policy Press; 2016.
 42. Marshall M, Pagel C, French C, Utey M, Allwood D, Fulop N, et al. Moving improvement research closer to practice: the Researcher-in-Residence model. *BMJ Quality & Safety*. 2014;23(10):801-5.
 43. Carpiano RM. Come take a walk with me: the "go-along" interview as a novel method for studying the implications of place for health and well-being. *Health Place*. 2009;15(1):263-72.
 44. Burns R, Gallant KA, Litwiller F, White C, Hamilton-Hinch B. The go-along interview: a valuable tool for leisure research. *Leisure Sciences*. 2020;42(1):51-68.
 45. Hardicre NK, Birks Y, Murray J, Sheard L, Hughes L, Heyhoe J, et al. Partners at Care Transitions (PACT) -e xploing older peoples' experiences of transitioning from hospital to home in the UK: protocol for an observation and interview study of older people and their families to understand patient experience and involvement in care at transitions. *BMJ open*. 2017;7(11):e018054.

46. Dickinson A, Wills W, Kapetanaki AB, Ikioda F, Godfrey-Smythe A, Halliday SV. Food security and food practices in later life: a new model of vulnerability. *Ageing and Society*. 2021;1-26.
47. Machray K, editor Photo elicitation and food insecurity ,. BSA Medical Sociology conference proceedings 2019; University of York.
48. Kamdar N, Hernandez D. Photo-elicitation: Reflections on a method to study food insecurity among low-income, post-9/11 veterans. *Public Health Nursing*. 2022;39(1):336-43.
49. O'Connell R. The use of visual methods with children in a mixed methods study of family food practices. *International Journal of Social Research Methodology*. 2013;16(1):31-46.
50. Hassen H, Kapetanaki A, Spotswood F. Adapting to food insecurity in lockdown University of York; 2022. <https://www.york.ac.uk/media/uymms/management/business/policy-briefs/2021-22/Management%20Perspectives%20Policy%20Brief%202022-1%20University%20of%20York%20Management%20School,%20Adapting%20to%20food%20insecurity%20in%20lockdown,%20Hassen,%20Kapetanaki,%20Spotswood.pdf> Accessed
51. O'Dea S. Percentage of households with a mobile phone in the United Kingdom (UK) in 2018, by gross income group. Statista,. 2020. <https://www.statista.com/statistics/289305/distribution-of-mobile-phones-in-the-uk-by-income-group/> Accessed
52. Sheard L, Marsh C. How to analyse longitudinal data from multiple sources in qualitative health research: the pen portrait analytic technique. *BMC Med Res Methodol*. 2019;19(1):169.
53. NIHR, The Ensuring Value in Research Development and Collaboration Forum. NIHR Adding Value in Research framework. 2019.
54. Richardson C, Akhtar I, Smith C, Edmondson A, Morris A, Hargreaves J, et al. Effective involvement: a report on the evaluation of a research awareness training package for public involvement in health research. *Research Involvement and Engagement*. 2019;5(1):21.
55. Heyman B, Lavender E, Islam S, Adey A, Ramsay T, Taffs N. The journey effect: how travel affects the experiences of mental health in-patient service-users and their families. *Disability & Society*. 2015;30(6):880-95.
56. Munthe-Kaas H, Nøkleby H, Nguyen L. Systematic mapping of checklists for assessing transferability. *Systematic reviews*. 2019;8(1):22.