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Identifying Local Priorities for Research with Linked Routine Data: An Online Workshop Method

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Abstract

Introduction

Priority setting with patients, public and professionals is essential for research utilising routinely collected data, as this ensures data are being used in the public interest. However, it is challenging to identify research priorities that are relevant to a wide range of local stakeholders and can be addressed with routinely collected data.

Objectives

To describe and present the results of a priority setting exercise aiming to identify research priorities for Born in Bradford for All (BiB4All), a routine data linkage cohort of mothers and babies born in Bradford, a city in the north of England.

Methods

We developed a two-hour online workshop to engage a range of stakeholders across Bradford, including parents, early years practitioners, commissioners, and service providers. The workshop method combined elements of existing priority setting approaches to ensure priorities were identified in an inclusive, timely and deliberative way, and supported stakeholders to develop their understanding of using linked routine data for research.

Results

The workshop identified seventeen important and urgent research priorities around child and maternal health for research with locally linked routine data. Key topic areas included maternal and infant mental health, the long-term impact of the Covid-19 pandemic on maternal and child health outcomes, inequalities in access to services, and infant feeding experiences.

Conclusions

The identified research priorities have been shared widely amongst interested networks and have shaped the BiB4All research agenda, demonstrating the feasibility of the stakeholder engagement method. They also have important implications for policy and practice. For policy, they provide an understanding of the key issues faced by local communities, which can steer policy priorities and investment in evidence generation. For practice, involvement in the workshop has generated a greater understanding of how local service data can be used for research and to inform improvements to service delivery.

Keywords

child health; maternal health; linked data; routine data; stakeholder involvement; research priorities; BaBi Network; Born in Bradford

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Introduction

Setting priorities for health and care research is essential for directing limited resources toward critical areas of need and for achieving maximum health gain for communities [1, 2]. In the United Kingdom (UK), research priority setting at a local level has become increasingly important, particularly after the inception of Integrated Care Systems (ICSs). ICSs are partnerships of local organisations that work together to plan and pay for health care services, with the aim of improving the lives of the population they serve [3]. There is clear focus on research and data throughout the ICSs' strategies, including a greater emphasis on the use of research evidence to inform health and care decision-making across the system [4]. This is supported by the statutory duty of Integrated Care Boards, the legal entities that govern ICSs, to *'facilitate or otherwise promote research on matters relevant to the health service, and the use in the health service of evidence obtained from research'* [4].

In addition, there has been increasing interest and investment in linking existing routinely collected data across public services for research, and to support local health and care decision-making [5, 6]. This includes broad ranging data collected by health, education and social care services as part of their service delivery [7]. Linking these data together at a local level can provide a greater understanding of population health needs, including if, how, and for whom commissioned local services are working [8]. Moreover, the UK government published the 'Data saves lives: reshaping health and social care with data' policy paper in 2022, stating their commitment to using data in a safe and transparent way for research, to improve the health and care of the population [5]. Their aim is a health and care system that is underpinned by high quality and readily available data. Hence, identifying research priorities that are important locally is crucial to supporting both the ICS and government data and research strategies.

Public, patient and professional involvement is an important aspect of local priority setting for health and care research [9, 10]. Bringing in the perspectives of members of the public, health care professionals and commissioners into decision-making can: (i) help ensure funding is directed towards research that meets critical evidence gaps; (ii) encourage accountability and a shared responsibility for implementing the research; (iii) improve the relevance and legitimacy of research and; (iv) lead to better health outcomes [1]. Research has also demonstrated that public, patient and professional involvement is particularly important when linking and using routinely collected data for research, as members of the public in the UK are broadly supportive of their data being used when it is in the public interest and can lead to tangible societal benefits [11, 12].

When identifying priorities for research with routinely collected data, at a local level, there are several important considerations. Firstly, routinely collected data are vast and complex and the concept of using these data for research is relatively new. Therefore, when prioritising research topics with a range of stakeholders, it is important that the process allows for knowledge to be developed around routine data and how it can be linked and used for research. This enables stakeholders to effectively engage in the process. Secondly, the approach to identifying research priorities needs to balance having enough time for the desired stakeholders to engage in the process, whilst accommodating other demands on their time. To allow for varying perspectives on what is important locally, it is essential that the approach of defining local research priorities is inclusive, accessible, and supports stakeholders from a range of backgrounds to be engaged. Finally, it is important that research priorities are identified efficiently, to ensure the research topics remain relevant in a fast-changing local policy environment.

There are a range of existing priority-setting approaches designed to meet the needs of different contexts and decision-makers, three of which are summarised in Table 1. Other methods of collecting and selecting research priorities include bespoke interviews, focus groups, workshops, and surveys, where these may be conducted online or face-to-face [1].

However, there are limitations of applying the methods summarised in Table 1 for identifying research priorities for research with routine data. The Delphi method, while effective for achieving consensus among experts [19], is limited within this context as it relies on independent survey completion without opportunities for discussion or collaborative learning. In-depth group discussions are essential for developing stakeholder understanding of routine data and its potential for research, particularly among non-experts who may be unfamiliar with routine data or data linkage concepts. In this context, it is crucial that non-experts are consulted, to ensure data are being used for research that is in the public interest. The James Lind Alliance and the Child Health and Nutrition Research Initiative approaches, while demonstrated to be effective in their respective contexts [14, 15, 22], are limited for routine data research priority setting due to their extended timeframes. Given the UK government's emphasis on using up-to-date information to ensure they can plan and commission services that provide what each local area needs and to support effective ICSs [5], priority-setting for routine data research needs agile approaches than can respond to evolving policy landscapes and emerging health challenges. Additionally, both methods are potentially less feasible for engaging local stakeholders in the iterative priority setting processes that are recommended for routine data research, where priorities may need regular updating as new data sources become available and local contexts change.

Therefore, this paper reports on a priority-setting exercise that was designed to identify research priorities for child and maternal health, in the context of a routine data linkage cohort of mothers and babies in Bradford; 'Born in Bradford for All' (BiB4All). The priority-setting exercise combined elements of existing approaches to allow research priorities to be identified in an inclusive, timely and deliberative way with multiple stakeholders. This paper describes the findings from our priority setting exercise and identifies key lessons for others wishing to use this approach or identify research priorities for linked routine data research.

Methods

Transparent reporting of health research priority setting exercises, which directly involve stakeholders in the process, can strengthen the acceptability and implementation of the

Table 1: Summary of three common priority setting approaches in health research

Approach	**Description**	**Evidence of effectiveness**
James Lind Alliance	This approach establishes Priority Setting Partnerships, which bring together patients, carers, and clinicians to agree on the most important areas for research for a specific topic area. The James Lind Alliance process can take up to 18 months to complete and involves forming a steering group to oversee the process. The steering group first gathers research questions via online surveys from patients, carers, and health professionals. These research questions are then narrowed down by cross checking with current research and further surveys, where individuals can vote on their most important question. Finally, a Priority Setting Partnership workshop brings together patients, carers, and health professionals to jointly agree on the top 10 questions most important for research. During the workshop, stakeholders use cards to rank the priorities from least to most important [13].	While there is no single comprehensive formal evaluation of the James Lind Alliance approach, multiple studies have documented its effectiveness in engaging diverse stakeholders and achieving consensus [14, 15]. There is also evidence that James Lind Alliance priorities influence research funding [16]. However, studies have identified challenges with the approach, particularly in engaging groups routinely excluded from health research and managing complex discussions of ‘uncertainty’ among diverse participants [17].
Delphi	The Delphi method involves administering a survey to a group of experts over several rounds. After each round, the results of the survey are reported back to the group, and the next round involves administering another survey. The process stops when there is a convergence in opinion or when a point of diminishing returns is reached [18].	Delphi studies have been shown to be effective and reach a large number of stakeholders [19]. However, this method is less appropriate when consulting with non-experts or in contexts where personal contact and discussions amongst contributors are desirable, as surveys are completed independently. A recent systematic review of 287 Delphi studies highlighted methodological concerns. They found considerable differences in how these studies are conducted, making assessments and comparisons difficult [20].
The Child Health and Nutrition Research Initiative	This approach aims to inform investors in research about the risks associated with each potential investment. Technical experts independently score each of the research options based on specified criteria [21]. This method provides a useful process for developing criteria for which to prioritise research questions. This process can take several months to complete and is not appropriate where rapid priority setting is required or when consulting with non-experts.	A review of the first 50 applications of this method found it to be (i) transparent and replicable, as it defines the context and priority-setting criteria; (ii) democratic, as it relies on crowdsourcing; and (iii) inclusive, by fostering ownership of the results [22]. They also noted several concerns including that the response rate of researchers, policymakers and programme leaders ranges between 30-70%, which can lead to significant response bias.

Table 1 describes three priority setting approaches: The James Lind Alliance, Delphi, The Child Health and Nutrition Research Initiative.

research priorities identified, ensuring efforts and funding are invested in generating evidence that is of importance to all stakeholders. Hence, this section is structured according to the The REporting guideline for PRIority SEtting of health research (REPRISE) guidelines to facilitate comprehensive reporting of methods [1].

Context

The priority-setting exercise presented in this paper was developed and applied in Bradford District, in the North of England, to identify research priorities for the BiB4All cohort.

Bradford has a young and multi-ethnic population of over 550,000 people and high levels of deprivation [23]. Bradford has higher than average infant mortality rates (6.09 per 1000 compared to 3.95 per 1000 in England), above average obesity in pregnancy rates (24.1%, 22.1% in Bradford and the rest of England respectively) and a higher rate of smoking in pregnancy (16.5%) compared with the rest of England (12.8%) [24]. In addition, infant mortality is highest for babies of Pakistani origin, who account for almost half the babies born in Bradford [25]. Born in Bradford (BiB), an internationally recognised research programme, was established to understand what keeps families in Bradford happy and healthy, with the intention of tackling some of the key issues faced by this community [26]. BiB currently hosts three birth cohort studies, including BiB4All, which together track the lives of more than 60,000 Bradfordians.

BiB4All opened to recruitment in 2019 and is the founding site of a network of electronic birth cohorts across England called the 'Born and Bred in (BaBi) Network' [8]. Every pregnant person in receipt of antenatal care at Bradford Teaching Hospital NHS Foundation Trust (BTHFT) is invited to join the BiB4All cohort, by their midwife, as part of their standard care. As this cohort is embedded into routine clinical practice, it is not possible to state a definite sample size. However, at the time of this priority-setting exercise in March 2021, BiB4ll had 4,405 mothers and 3,416 children, with an average recruitment rate of 177 mothers per month. This active consent process enables identifiable routine data about the mother and her child, from multiple sources, to be linked for research. Routine data sources that can be linked together for BiB4All participants are shown in Figure 1.

In addition to consent for data linkage, BiB4All gathers consent to contact participants about other research opportunities, such as future evaluation of interventions or service improvements. The aim of BiB4All is to link and use routinely collected data about mothers and their children to support local policy and practice and tackle local challenges.

The success of BiB4All led to this model of recruitment and data linkage being replicated in other local areas, with the support of the BiB4All team, which resulted in the BaBi Network [8]. BaBi cohorts are clustered within ICSs and therefore have the potential to support ICSs with their ambition to use evidence to inform their decision-making. As such, BiB4All (as well as the BaBi cohorts in Leeds and Wakefield) has the potential to provide the necessary evidence to support the strategies of the West Yorkshire ICS.

The first step to using BiB4All to inform local policy and practice, is to understand what the most important and urgent local research priorities are in Bradford, that BiB4All data can address.

BiB has a long-standing foundation of community engagement and co-production research with both families and professional stakeholders that has led to meaningful impact locally [28, 29]. For example, the Community Representatives Research Advisory Group, made up of community representatives residing in ethnically diverse, socioeconomically deprived inner-city wards of the Bradford District, was established for the Born in Bradford's Better Start cohort. The group included local parents, leaders of local groups, projects and charities and a local councillor. The advisory group were involved in all stages of the cohort development including the design of study materials and methods for engaging and recruiting parents and played a key role in the interpretation and dissemination of findings [30]. The priority-setting approach presented in this paper drew on BiB's expertise of engaging the community in research and utilised existing groups to ensure a range of perspectives were captured during this exercise.

Scope

This paper focuses on identifying research priorities around child and maternal health, as data from the BiB4All cohort have the potential to address topics in this area. However, this method may be useful in identifying local priorities in other contexts.

Within this context, we sought to engage multiple stakeholders who have experience and/or expertise in child and maternal health outcomes. This included stakeholders based in Bradford, as well as those based in local areas setting up a BaBi cohort at the time this priority setting took place (BaBi pilot sites). This offered the opportunity for stakeholders in these local areas (Leeds, Doncaster and Wakefield) to learn more about the potential of their local cohorts to support decision-making in their local areas. Each of these stakeholders likely had a different set of priorities, therefore, it was important that the priority setting exercise engaged, accommodated, and balanced their different perspectives.

To ensure BiB4All data are being used to meet local needs, there were no constraints on the type of priority or research topic that could arise as a result of the exercise.

Governance and team

This priority setting exercise formed part of a PhD project [31] and was co-produced with the BiB4All study team, who met regularly to implement the planned work [32]. The governance structure comprised multiple levels of oversight with clearly defined roles and responsibilities for both immediate implementation and long-term follow-up of identified priorities.

The project team included the BaBi Network Academic Director, Clinical and Research Governance Director, Programme Director, Senior Research Fellow and PhD researcher. The doctoral researcher served as project lead, with primary responsibility for workshop design and implementation, supported by the BaBi Network directors who provided strategic oversight and methodological guidance. The Clinical and Research Governance Director helped ensure ethical and governance compliance. All members of the project team facilitated stakeholder access and community connections.

During the initial planning stages, the doctoral researcher met fortnightly with the BaBi Network Directors to develop and refine the workshop approach, with emerging ideas and designs presented at regular BiB4All team meetings for broader team input and approval. Advice and expertise were also sought from researchers at BiB with skills in co-production, community engagement, and research agenda setting. In addition, this work was supported by specialist Patient and Public Involvement and Engagement team members from

Figure 1: Routine data sources that have the potential to be linked for BiB4All participants

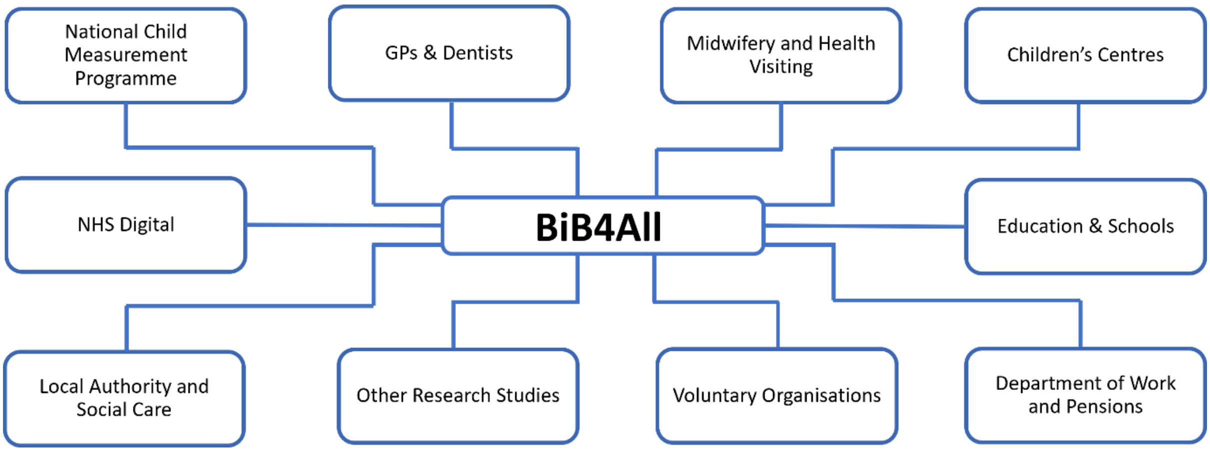


*Figure adapted from 'BiB4All' by Born in Bradford [27].
Figure 1 shows a number of routine and research data sources that could be linked for participants recruited to the BiB4All cohort. General Practitioner is shortened to GP and National Health Service is shortened to NHS in the figure.

the National Institute for Health and Care Research Applied Research Collaboration (NIHR ARC) Yorkshire and Humber, who met with the project team and helped ensure inclusivity in the approach.

A key aspect of the governance structure was the commitment that the doctoral researcher would address one of the identified priorities as part of their PhD research. The rest of the project team took collective responsibility for ensuring the other identified priorities became the focus of future research work and funding applications, by making them an agenda item at BiB4All team meetings and engaging with existing local stakeholder groups.

This governance approach was designed to ensure that identified priorities would be actively pursued rather than simply documented. The structured accountability, with specific team members committed to advancing different priorities, established the foundation for the ongoing stakeholder engagement and iterative priority-setting processes discussed later in this paper, ensuring that the workshop outputs would translate into research activity.

Framework for priority setting

To identify research priorities around child and maternal health that BiB4All data could be used to address, we required a timely and inclusive approach that:

a) Supported stakeholders to develop their knowledge of routine data

b) Involved a group discussion to encourage a range of stakeholders to share their expertise regarding data that are collected as part of their services and their differing research needs

c) Allowed stakeholders to work together to reach a consensus on local research priorities

We also sought an approach that could be used by other local areas, including the wider BaBi Network, and could accommodate varying levels of experience in defining research priorities. Additionally, this work took place during the Covid-19 pandemic, meaning we needed a method that could accommodate the necessary restrictions and pressures on the health and care workforce.

None of the existing priority-setting approaches met all these requirements. As such, the 18-month timeframe for the James Lind Alliance approach was incompatible with our need to rapidly identify priorities to inform the BiB4All research agenda. Additionally, the James Lind Alliance approach focuses on treatment uncertainties within specific clinical conditions, whereas we needed to identify broader research priorities across child and maternal health that could be addressed using routine data linkage. The Delphi method was unsuitable for our aim to build stakeholder understanding of routine data research potential. We needed face-to-face interaction to educate participants about linked data possibilities and enable collaborative discussion about data collected across local services. Additionally, the multiple-round format would have been challenging for busy healthcare professionals and parents with limited time availability. The Child Health and Nutrition Research Initiative requires technical research expertise that many of our intended stakeholders (parents, service providers) would not possess. Therefore, this approach would have excluded valuable community perspectives and local knowledge. Our priority was inclusive engagement rather than expert-driven technical assessment, and we needed to accommodate participants with varying levels of research knowledge.

As a result, we developed a pragmatic two-hour online workshop method, which was underpinned by established processes and followed the UK National Standards for Public Involvement [9].

We opted for a workshop-based approach as the James Lind Alliance suggest that bringing people together in this format enables them to exchange knowledge and information and make decisions based on a wider set of experiences [13]. As such, the James Lind Alliance Priority Setting Partnership workshops engage stakeholders in small groups, where each participant in the small group, in turn, contributes their ideas about questions or topics they feel are most important for research and these are noted down by the facilitator. This informed our approach to identifying research topics for linked data research.

We decided to limit the workshop to two hours to minimise participant burden. This decision was also based on the success of Forbes *et al.*, who used a short online workshop method to prioritise child and maternity evidence-based interventions with a range of stakeholders during the Covid-19 pandemic [33].

To prioritise the identified research priorities within this context, we selected a criteria-based approach, where participants were asked to prioritise research topics based on a criterion of urgency and importance [34]. Importance was defined as something that has the potential for a large impact or is significant to improving child and maternal health outcomes locally and urgency was defined as something that is time dependent or requires immediate action. These criteria were selected as they best met the needs of the project.

The workshop method was piloted with colleagues at the University of York to ensure the planned tasks were achievable within the timeframe.

To our knowledge, this paper is the first to report on the use of this approach to engage multiple stakeholders across early years settings, to identify research priorities for child and maternal health to be answered using data from a specific data linkage project.

Stakeholders and participants

Relevant stakeholders with expertise in child and maternal health were identified by members of the BiB4All research team and contacted via email. This included early years practitioners (such as midwives, health visitors, general practitioners, neonatologists, paediatricians, obstetricians, gynaecologists and other specialists in child and maternal health), commissioners, and service providers. Strong links to the local community and stakeholder groups, established by the BiB team through their broader portfolio of work, were utilised for inviting members of the public in Bradford to attend. Partners from the BaBi pilot sites were also invited to attend. Additionally, we adopted a snowballing approach, where we encouraged those invited by the BiB4All team to share the email invitation with colleagues who may be interested in attending or to nominate a representative if they were unable to attend.

Email invitations included a link to an Eventbrite page for people to register their interest in joining the workshop. This enabled us to gather information such as the person's professional background and their contact details, and ensured we had a balance of stakeholder perspectives.

The workshop was attended by thirty-four individuals from a range of stakeholder backgrounds including midwives ($n = 5$), health visitors ($n = 4$), clinicians ($n = 3$), commissioners ($n = 5$), researchers ($n = 5$), parents ($n = 7$) and other backgrounds (public health specialist, policy manager, project manager, business intelligence and a representative from a violence and reduction unit) ($n = 5$). The majority of attendees were from Bradford ($n = 18$), with others based in Doncaster ($n = 8$), Leeds ($n = 1$), Sheffield ($n = 2$) and Wakefield ($n = 5$). Representatives from Sheffield provided services across the broader Yorkshire and Humber Region as part of the 0-19 Network.

Public contributors (parents) who attended the workshop were reimbursed for their time according to the BiB Public Participation Payment Policy for involvement in research. Public contributors were also supported to attend a free two-day 'Public Involvement in Health Research' training programme to help increase their confidence and skills in involvement and engagement [35]. In line with BiB guidance, professional contributors were not reimbursed for their time as they attended in their professional capacity, and they represented their organisations during the work.

Identification, collection, and prioritisation of research topics

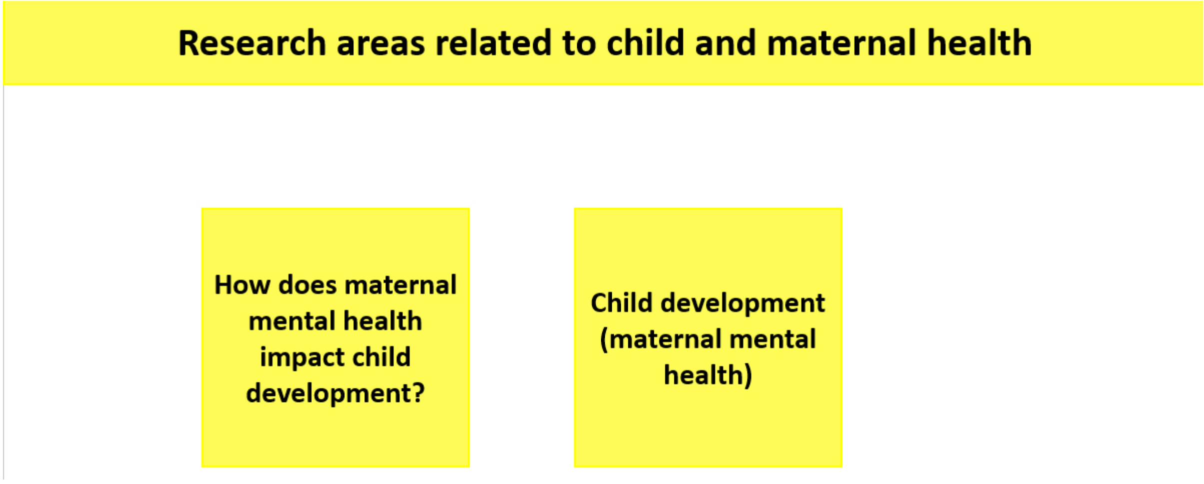
The workshop was hosted online, in March 2021, using the videoconferencing platform, Zoom. The decision to host the workshop online was a pragmatic one, as this research took place during the Covid-19 pandemic, when in-person meetings were not feasible, and there was a greater use of videoconferencing to communicate among the general population.

The workshop was facilitated by five people with roles in the BiB4All research team. In advance of the workshop, facilitators were trained on how to use Zoom, briefed on their role during the workshop and provided with a guidance document for reference during the workshop. Those who were signed up to attend the workshop were provided with an information sheet prior to the workshop, which summarised (a) the aims of the BiB4All cohort, (b) what they could expect from the workshop and (c) how the workshop outputs would be used.

The workshop was recorded to ensure all contributions were captured in the outputs. Attendees were informed that the session would be recorded when they signed up to attend and were reminded of this at the start of the workshop.

The workshop started with a welcome and introduction from the meeting chair and a short ice breaker activity. This was followed by a background presentation designed to ensure participants had enough information to conceptualise the use of linked data for research and participate in the workshop. The presentation explained the aims of the BiB4All cohort and provided case studies on how linked routine data can be used for research. The key components of the presentation were: 1) a comprehensive overview of the data sources linked for BiB4All participants; 2) an explanation of the types of information collected in each source; and 3) examples of research using linked data. We presented a study by Pettinger *et al.*, which used routine data to explore if children who born prematurely and, in the summer, show a potential 'double disadvantage' in their early development [36]. We explained that this question could only be addressed by linking maternity and education data for those children. We also discussed a study conducted by our colleagues at BiB, who investigated the proportion of women identified as experiencing poor mental health during the perinatal period. By linking data from maternity, health visiting, and primary care records, they found significant variability in identification across sources, with many women flagged in one record but not others. This

Figure 2: Google Jamboard example



Research areas related to child and maternal health

How does maternal mental health impact child development?

Child development (maternal mental health)

Figure 2 shows a screenshot of a Google Jamboard. It has the title 'Research areas related to child and maternal health' and a virtual sticky note which denotes an example research topic 'how does maternal mental health impact child development'.

highlighted the importance of linked datasets for gaining a holistic understanding of health service usage. Following the presentation, attendees were encouraged to ask questions and clarify their understanding of the how routine data can be used for research. This was a crucial step to ensure a shared understanding and an inclusive approach. Developing this understanding was important as previous research has revealed that people find it difficult to conceptualise the use of linked routine data [37]. Furthermore, while stakeholders may know what data their own services collect, they do not always know how it can be connected with other sources. The core lesson for participants was that linking routine data from different sources allows researchers to answer complex questions about health and social outcomes that cannot be addressed with a single dataset.

The remaining part of workshop was split into two parts, each lasting 20 minutes. The first part used Zoom's breakout room feature to place attendees from similar stakeholder type backgrounds into small groups of between four and six individuals. Each group had a facilitated discussion in areas of child and maternal health they felt were important for linked data research to address. Attendees each had the opportunity to share their thoughts. Attendees' ideas were noted down on a Google Jamboard by a facilitator, which was an online space that permitted those with granted access to insert a virtual sticky note, mimicking how ideas would be represented if the session was held face-to-face. Facilitators shared their screen with attendees showing the Google Jamboard. An example of how ideas were captured on Google Jamboard is shown in Figure 2.

A standardised format was used to record attendee's ideas, so that all members of the research team could easily understand the ideas. As such facilitators were asked to note the outcome variable followed by brackets containing the exposure variables, where possible, or to note down the full research question. Both are shown in Figure 2.

This standard format was also detailed in a guidance document for facilitators, alongside a list of prompts that could be used to stimulate discussion.

After this task, attendees were returned to the main online meeting room and a member from each group discussed the key ideas generated by their group.

The second part of the workshop placed attendees into new, multidisciplinary breakout groups with between four and six members. Each group was randomly assigned a selection of ideas from the first session and asked to collectively prioritise these suggestions in order of urgency and importance, using the matrix shown in Figure 3 [34]. This task was also completed using Google Jamboard and virtual sticky notes, which were shared on screen by the group's facilitator. It was emphasised to attendees that ideas ranked lower on the scale of importance and urgency would not be dismissed and that the purpose of the exercise is to decide which of the ideas should be addressed first. This provided an organised way of prioritising the research topics, that enabled a discussion around why these topics are considered urgent and important.

Attendees returned to the main online meeting room and a representative from each group was asked to present their most important and urgent idea.

After the workshop, a member of the BiB4All team reviewed the Google Jamboards alongside the meeting recording to ensure all research ideas and discussions were captured. Duplicate questions were removed, and ideas were summarised into relevant themes, an approach based on Braun and Clarke's approach to thematic analysis [38]. To ensure quality and consistency, a second team member independently reviewed both the content of the Jamboards and the thematic summary, confirming that the identified themes accurately represented the workshop discussions. Any discrepancies were discussed and resolved through consensus between the two team members. A summary report was then produced detailing the ideas considered most important and urgent for research with the BiB4All cohort, as well as the other ideas that were generated during session one. This summary report was circulated to:

a) The workshop attendees, who then shared these widely amongst their local networks.

Figure 3: Urgency and importance matrix

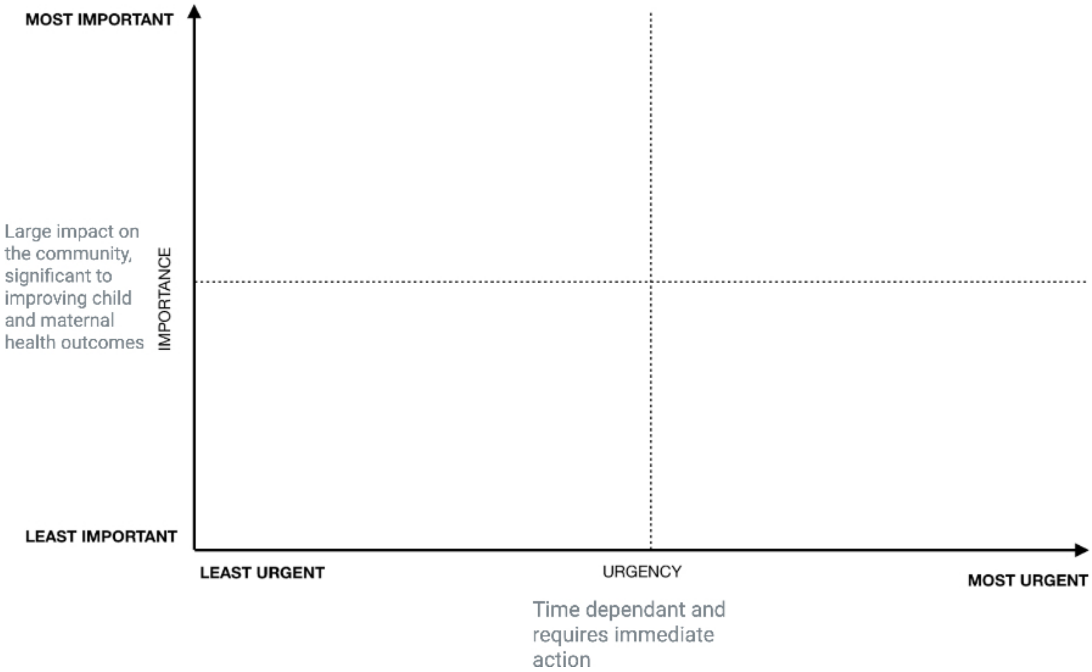


Figure 3 shows a matrix with' importance' on the vertical axis (ranging from 'least important' at the bottom to 'most important' at the top) and 'urgency' on the horizontal axis (ranging from 'least urgent' on the left to 'most urgent' on the right). The matrix is divided into four quadrants by dotted lines intersecting at the centre, creating a framework for prioritising research, based on their relative importance and urgency.

b) Those working with linked data in Bradford [39] and the Early Life and Prevention theme of the NIHR ARC Yorkshire and Humber, who conduct research related to the early years of life [40].

c) The BaBi Network, which motivated other BaBi sites to host their own prioritisation workshops.

Results

Seventeen important and urgent research priorities were identified and organised into key themes. Table 2 presents a taxonomy of the identified topics and themes, indicating which stakeholder group identified the priority and whether it was answerable with the BiB4All data available at the time of the workshop. We used the categories 'potentially' and 'no' to indicate whether a topic was answerable with the available BiB4All data. This is because assigning a definitive 'yes' is challenging without undertaking the full analysis, as a question's feasibility is contingent upon factors like data quality and coverage, which are best understood through direct engagement with the data and those who collect the data.

Table 2 shows that the key themes were maternal and infant mental health, diet and childhood obesity, inequalities, infant feeding and labour and delivery. Many of the identified priorities related to the long-term impact of Covid-19 on health and this reflected the context in which these priorities were elicited. The majority of the urgent and important priorities were first posed by midwives (n = 10) and five out of the seventeen priorities were considered 'answerable' with the available BiB4All data. Many of the priorities were not able to be addressed due to insufficient data pre-pandemic, as the cohort began recruitment in 2019. In addition, several priorities were not able to be addressed as the outcome or exposure variable is not well documented in routine service data.

Supplementary File 1 details the research ideas shared that were not prioritised as urgent and important.

Evaluation and feedback

A short feedback form was circulated following the workshop to capture stakeholders' views of attending the workshop, to inform future priority-setting exercises.

Fourteen out of the thirty-four participants responded to the post-workshop feedback form. Overall, respondents were positive about the workshop and commented that it was well organised. The pre-workshop information was described as clear and timely and when asked if they enjoyed the workshop, all respondents answered 'yes'. Four individuals felt more time was needed in the breakout rooms; however, others felt the time was adequate. Facilitators of the workshop felt that the session went well and was valuable for understanding how BiB4All data can be used to support local need. Facilitators felt this method could be adapted and used by other BaBi sites, with minor modifications, including localisation of the background presentation.

Implementation

The identified priorities informed a pipeline of research projects for the BiB4All research team. One of the identified priorities was addressed as part of a PhD project, which aimed to understand whether linked routine data could be used to support local decision-making [31]. The lead doctoral

Table 2: Ideas indicated as most important and urgent at the workshop

Research topic	Stakeholder group	Answerable with Available Routinely Collected Data from BiB4All?
Mental Health		
Explore the effects of women entering maternity services with pre-existing severe mental health on parent/infant relationships, bonding, prevention of separation.	Midwives	No – data on outcomes were unavailable or challenging to quantify with routine data
Investigate the impact of parental mental health on problems such as coping with sleeping and fussy eating.	Health Visitors and Clinicians	No – data on outcomes were unavailable or challenging to quantify with routine data
Examine the impact of parents with mental health difficulties not meeting the threshold for adult mental health services and the impact on family relationships and emotional wellbeing. Consider the impact of implementing a therapist that can provide links to crucial services.	Health Visitors and Clinicians	No – data on outcomes were unavailable or challenging to quantify with routine data
Explore the impact of early support (in the perinatal period and early years) on child and parental mental health. Discussion focused on adverse childhood experiences and parental experience with trauma and adversity as this may impact their ability to parent and be emotionally available to the baby.	Commissioners and Researchers	Potentially – depends on definition of early support and parental experience of trauma
Explore the impact of early years and pregnancy on early years development, where a comparison between child parent psychotherapy and usual care could be considered.	Commissioners and Researchers	No – insufficient data on number of individuals receiving the treatment
Explore the effect of mental health during the neonatal period on emotional attachment needs, breastfeeding, interaction, bonding and child emotional and physical development and school readiness.	Midwives	Potentially – a number of these outcomes can be quantified using routine data however, some are unavailable in routine data. This question would need to be broken down into several questions
Diet and childhood obesity		
Explore the impact of proximity between take-aways and households on childhood obesity.	Commissioners and Researchers	Potentially – depends on the specific age range of children being examined, as data availability and the definition of obesity vary across different developmental stages
Covid-19		
Explore the impact of access to limited support during perinatal period and birth, as a result of the Covid-19 pandemic, and how these impact on maternal mental health and child development.	Public contributors	No - insufficient data pre-pandemic; unable to measure access to support in routine data
Investigate the impact of social isolation during the Covid-19 pandemic, missed nursery time and play time on babies and infants forming meaningful relationships.	Health Visitors and Clinicians	No - insufficient data pre-pandemic; unable to measure outcome in available routine data
Explore the impact of Covid-19 on environmental allergies.	Midwives	No - insufficient data pre-pandemic
Explore the impact of Covid-19 on the likelihood of having a breech baby, linking in with rates of elective sections.	Midwives	Potentially
Inequalities and access		
Explore why Black and ethnic minority communities are not accessing health care services and the barriers influencing this.	Midwives	No – better addressed with qualitative data not captured in routine service data
Evaluate the effectiveness of online antenatal care and education compared with face- to-face and compare across the region.	Midwives	No – data on exposures were not available

Continued

Table 2: Continued

Research topic	Stakeholder group	Answerable with Available Routinely Collected Data from BiB4All?
Infant feeding		
Explore the impact of infant feeding on maternal mental health, meaningful mother/baby relationships (secure and insecure attachment) and long -term child health outcomes.	Midwives	Potentially – a number of these outcomes can be quantified using routine data however, some are unavailable in routine data. This question would need to be broken down into several questions
Examine the impact of reduced support for infant feeding, as a result of Covid-19, on weaning.	Midwives	No - insufficient data pre-pandemic; unable to quantify exposure using routine data
Maternal experience of breastfeeding, including whether she stopped breastfeeding before she wanted to, access to support services, and how this impacted on the mother/baby relationship.	Midwives	No – data were unavailable or challenging to quantify with routine data
Labour and delivery		
Explore the factors influencing the likelihood of having a breech baby and the effects of a breech baby, such as cost implications and the health of the mother and baby.	Midwives	Potentially – question needs further refinement

Table 2 lists the identified important and urgent research topics categorised into the following themes: mental health, diet and childhood obesity, Covid-19, inequalities and access, infant feeding, and labour and delivery. For each topic, the table indicates which stakeholder group posed that topic and whether it could be addressed using routinely collected data from the BiB4All cohort available at the time of the workshop. The stakeholder groups included: Midwives, Health Visitors and Clinicians, Public contributors, and Commissioners and Researchers.

researcher refined the list of urgent and important research priorities to include only those that could be addressed with the data currently available for the BiB4All cohort. For example, at the time of hosting this priority-setting exercise, the oldest children in the BiB4All cohort were aged two years old, meaning data on longer term outcomes were not yet available. Hence, questions that required these outcomes were not within the scope of their PhD research and were ruled out, however they would be considered for future research proposals. An online meeting was then hosted in April 2021, with a small group of targeted stakeholders in Bradford to discuss these priorities and define the exact research question addressed with BiB4All data. This research question focused on understanding the relationship between mild-moderate maternal mental illness during the perinatal period and early child development.

Discussion

This paper describes and reflects on a priority-setting exercise that was designed to identify research priorities for BiB4All, a routine data linkage cohort of mothers and babies born in Bradford. The priority-setting exercise was underpinned by existing approaches, which enabled research priorities to be identified in an inclusive, timely and deliberative way. The need to involve a diverse range of local stakeholders and develop their knowledge around the use of linked routine data for research, as well as the need to identify research priorities rapidly and efficiently to support local policy, strongly influenced the design of this approach.

The research priorities identified in this paper were wide-ranging, as the focus was on the broad area of child and maternal health. The intention was to use these priorities as a starting point for further exploration into the important factors associated with these themes through more specific engagement. This is because the BiB4All cohort links broad ranging data and has the potential to support research into a plethora of topics. At this stage, we did not want to limit the possibilities to use the cohort to support local policy and practice. This contrasts other approaches, such as the James Lind Alliance, which focus on specific areas e.g. mental health in children and young people.

The identified priorities broadly resonate with the wider priorities in Bradford. For instance, Bradford Metropolitan District Council published their Children and Young Peoples Strategy 2023-2025 [41] where the key priorities are to:

1) Ensure babies and new mothers have early access to, and a good experience of wellbeing and mental health support
2) Improve families' access to affordable and healthy food

Furthermore, the Bradford District and Craven Health and Care Partnership have a programme focused on the 'Best 1,001 Days' [42]. The programme seeks to address the following key issues, where many of these priority areas were also identified at the BiB4All workshop:

- Smoking rates in pregnancy
- Incidence of low birthweight babies
- Contributory factors for stillbirth

- Breastfeeding rates
- Poor outcomes for the minority ethnic population
- Perinatal mental concerns
- Infant mental health
- Genetic literacy

Cartwright *et al.*, used a modified James Lind Alliance approach between December 2018 and March 2020, to identify research priorities for keeping children happy and healthy to inform future research agendas as part of the Born in Bradford research programme [28]. They adapted the approach by designing their steering group to include representation from the general public, policy/practitioners and researchers to ensure all perspectives were heard. They also removed the stage which checks the evidence to explore if the question has already been answered due to the broad scope of the priority setting exercise. Their aim was to understand what was important to communities, therefore, it was not important for them to exclude topics that had been identified based on what was reported in existing literature. A number of the identified themes (diet and nutrition; access to healthcare; mental and emotional health and economic circumstances) were also identified during this prioritisation exercise. This demonstrates that the priorities identified at the BiB4All workshop likely reflect the key issues faced by the communities in Bradford and should be the focus of upcoming research with local routine data.

Reflecting on the usefulness of the workshop outputs for the BiB4All research team, it was noted that several of the identified research topics were not necessarily suitable for research using routine data. For example, information on women's experiences of breastfeeding, including whether they stopped breastfeeding before they wanted to, is unlikely to be captured in their routine health record and may be more usefully explored using qualitative methods. Whilst these priorities can still be addressed through BiB4All by contacting participants to be part of further research, they cannot be addressed using the linked routine data alone. This suggests the need to further build capacity and understanding about the potential of linked routine data among stakeholders, allowing them to better identify opportunities for these data to be used, and among facilitators, to better support attendees to focus their research ideas. This is supported by the discussion at the workshop, where attendees said they would like more information regarding data that are available in the linked dataset. Due to the vastness and complexity of routine data, it would not be possible to build an understanding of data collected across all datasets locally during a single workshop. It would be more effective to build an understanding over time, through ongoing communication and engagement across the whole research programme. The BiB4All team have since engaged with local services in Bradford to develop this understanding through attending local stakeholder steering group meetings. The team have presented on the potential of BiB4All data for research, using the example of the priority addressed by the doctoral researcher following this workshop.

Alternatively, this could suggest that routine data are not capturing outcomes and exposures that are important locally. As such, a number of the identified research topics required information about the parent-infant relationship. At the time this workshop took place, this was not well captured in routine health data. Where there is a mismatch between the available data and the priority topics, this provides the opportunity for the BiB4All team to work with local services to ensure important data are routinely captured.

Strengths and limitations

A key strength of our approach is that it was specifically designed to meet the unique requirements of engaging stakeholders with routine data research. The short, accessible format (two hours) enabled us to engage busy healthcare professionals, commissioners, and policymakers during a period of significant health service pressure (Covid-19 pandemic), when longer approaches such as James Lind Alliance (up to 18 months) would have been unfeasible. Crucially, our method incorporated an educational component that built stakeholder understanding of routine data potential within the time constraints, striking a balance between developing and understanding of the potential of routine data and identifying actionable priorities without overburdening participants. This approach enabled stakeholders representing diverse services to engage meaningfully, discuss the data they routinely collect, and identify shared priorities that could benefit multiple services, which is something that would be challenging to achieve through survey-based methods like Delphi. Despite several of the priorities being identified as unsuitable for research at the time with BiB4All data, they could be addressed with other routine data linkage cohorts such as Born in Bradford's Better Start cohort [30], which has access to pre-pandemic data or longer-term outcomes for families in Bradford. They may also be able to be addressed through improvements in routine data quality. Hence, the accessible format also supports our goal of creating a repeatable process for iterative priority-setting as new data sources become available, routine data for research improves, and local contexts evolve, ensuring routine data continue to address locally important questions. By demonstrating that BiB4All is a practical resource for decision-making, our method has fostered ongoing stakeholder engagement essential for ensuring routine data are used in the public interest.

As this process took place during the Covid-19 pandemic, the method needed to be flexible and easily applied using an online platform. Whilst, hosting the meeting online allowed a wide range of previously disconnected and geographically dispersed health and care professionals and members of the public across the region to be easily engaged, this could have influenced the outputs as some people feel more or less comfortable engaging and offering their views in an online setting [33].

We involved stakeholders from multiple local areas, which allowed a broader spectrum of opinions on the use of linked data and diversity in child and maternal health priorities across the region to be captured. The Covid-19 pandemic resulted in health service providers being even more time constrained, hence, the inclusion of the additional sites increased the population of potential contributors from each stakeholder group. Moreover, involving stakeholders from across the BaBi network provided the opportunity to observe how different local areas were able to contribute and engage with the workshop, which helped us understand how this method could be applied in different settings. This is important as stakeholders in some local areas are less familiar with research of this kind, than those who live and work in Bradford. Born in Bradford's extensive multisectoral engagement strategy over the course of the programme's lifetime, has generated a pre-existing understanding of research potential within the community [28, 43].

We recognise that by adopting a snowballing approach to invite people to attend the workshop, this may have introduced selection bias, as professionals tend to invite their colleagues from the same field or with similar perspectives. Consequently, some stakeholder groups or perspectives may have been under-represented in the workshop, which could have influenced the research priorities that were identified and their relative ranking. However, there was representation from a range of stakeholder backgrounds at the workshop, including both clinical and commissioning backgrounds.

The research priorities identified in this paper are specific to this engagement exercise and do not necessarily reflect the range of views in the population as a whole. The ideas represent the views of those who engaged in the workshop and reflect the context in which they were collected. Therefore, repeating this exercise with a different group of stakeholders and facilitators, at a later time, would likely yield different research priorities.

We acknowledge that the research team's perspectives and assumptions may have influenced the interpretation and categorisation of the research priorities identified. The workshop facilitators had pre-existing ideas about important areas of child and maternal health research, informed by prior literature and professional experiences. While facilitators endeavoured to remain neutral and allow attendees to direct conversations towards areas they felt were most important, these preconceptions may have influenced how discussions were guided in breakout sessions or how responses were subsequently interpreted and themed. Additionally, variation in group dynamics and facilitation styles across the different breakout sessions may have influenced which priorities were discussed and emphasised. Some groups may have been more vocal or confident in expressing certain viewpoints, while quieter participants' perspectives may have been under-represented. These factors could have resulted in alternative research priorities being identified had different facilitators been involved or had group compositions varied, further highlighting the context-dependent nature of the prioritisation exercise.

We also acknowledge that not all research questions suggested in the first part of the workshop had the opportunity to be prioritised in the second part as lots of ideas were generated. This means that potentially important and urgent areas of research may have been missed. We therefore recommend that facilitators in future workshops focus on gaining clarity on a smaller number of research ideas in task 1 (up to eight), to ensure all ideas have an equal opportunity to be discussed in the second part of the workshop. Clarity of the research ideas is also important as many of the ideas from this initial workshop were broad and by focusing on what is most important about that research idea, makes the workshop outputs more useful for informing the research agenda. Additionally, we acknowledge that each small group had a different set of ideas generated in the first part, to prioritise in the second part. This was beneficial as it allowed more ideas to be discussed, however, as each group is not prioritising the same questions, we are unable to rank all the ideas against each other. Furthermore, there may have been varying levels of understanding among attendees about what a 'priority' means and the criteria for prioritisation may have been interpreted differently depending on individual perspectives, since attendees were from multiple local areas and professional backgrounds. This may have influenced both the identification and ranking of the research priorities.

The landscape for setting priorities is ever changing. New data are made available for research, which is being accelerated by the UK government's commitment to using data to improve the health and care of the population [5] and the development of Secure Data Environments [44]. Priorities for policy and practice evolve in response to the changing context, for example NHS England recently published their 'Core 25 PLUS5' approach to support the reduction of health inequalities for children and young people [45], meaning their priorities since the BiB4All workshop may have changed. Hence, priority setting for routine data research should be considered an iterative activity, that should be regularly revisited, rather than being considered a one-off exercise.

Implications for research, policy, and practice

As discussed, the workshop outputs were shared widely, including with workshop attendees, the BiB research team, interested networks, and wider NIHR ARC Yorkshire and Humber. The broad nature of the topics identified means that they can provide strategic directions of future research projects conducted within the BaBi Network and for linked data research more generally.

Following on from the success of this workshop, other BaBi sites were inspired to replicate this method to identify research priorities for their cohorts. Since, this method has continued to evolve as more BaBi sites have hosted workshops, including adapting this method for a face-to-face setting [46]. A number of BaBi sites are currently pursuing research funding to address the topics identified during their workshops. A package of resources has been produced to support people to replicate this method, and these resources can be made available by contacting the BaBi Network Coordinating Centre [47].

The primary aim of this priority setting exercise was to guide research activities with linked routine data from the BiB4All cohort; however, the outputs also have important implications for policy and practice. For policy, the findings provide an understanding of the key issues faced by their local communities, which can provide a steer for policy priorities and investment in evidence generation in these areas. For practice, being involved in the workshop generated a greater understanding of how the data they collect routinely can be used for research and used to inform improvements to their service delivery. In addition, research carried out as a result of this priority setting exercise found significant gaps in routine data, which has since led to collaborations between the BiB4All research team and local service providers in Bradford, to improve the quality of routine data for research. Through this collaboration, local services are continuing to develop their understanding of how their routine service data can be used beyond individual clinical care for research and service planning. This may better enable them to take part in future priority-setting activities for research with routine data.

Conclusion

This priority setting workshop allowed a range of busy multisectoral stakeholders to be engaged in the process of identifying shared research priorities for their local communities. This paper demonstrates the feasibility of the method we used and shows that engaging stakeholders in routine data research priority setting has implications beyond research alone. It builds understanding of data potential among service providers, identifies gaps in current data collection, and provides policy makers with insight into key community concerns. We acknowledge that there are still several challenges to overcome when identifying local research priorities for linked data research as many of stakeholder's priorities could not be addressed with the available data. There is the potential for this method to be applied by other research teams seeking to identify locally relevant research priorities, in a timely manner.

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Statements of conflicts of Interest

No conflicts of interest were declared.

Ethics statement

Ethical approval for this project was not required, and is not always considered necessary for collaborative patient, public and stakeholder involvement in the UK. This work was carried out as part of a PhD, for which specific research activities were granted favourable opinion by the Department of Health Sciences Research Governance Committee at the University of York. The engagement work described in this paper informed the research activities that followed.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

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Abbreviations

BaBi:	Born and Bred in
BiB:	Born in Bradford
BiB4All:	Born in Bradford 4 All
BTHFT:	Bradford Teaching Hospital NHS Foundation Trust
GP:	General Practitioner
ICS:	Integrated Care System
NHS:	National Health Service
NIHR ARC:	National Institute for Health and Care Research Applied Research Collaboration
PhD:	Doctor of Philosophy
UK:	United Kingdom

Supplementary File 1: Ideas raised during the BiB4All prioritisation workshop not indicated as most important and most urgent

Social determinants of health

- Examine the impact of demographic factors, including social deprivation, on long term educational attainment and job destination.
- Explore the impact of environmental and economic factors on childhood obesity.
- Examine whether poverty or parental education impacts child mental health.
- Understand how the wider determinants, such as deprivation, housing, income affect pregnancy services.
- Explore the impact of financial instability on maternal mental health, parenting and then the impacts on the child.

Mental health

- Explore the effectiveness of interpersonal psychotherapy versus cognitive behavioural therapy in working with postnatal depression.
- Investigate the impact of intrusive thoughts in pregnancy and post birth in the typical population (without a diagnosed mental health problem).
- Explore the impact of child mental health on patterns of educational attainment.
- Explore the impact of mother's mental health on the parent/infant relationship.
- Investigate inequalities in awareness and access of Child and Adolescent Mental Health Services.
- Examine the effect of parental stress and isolation on the social and emotional development of baby/infant to determine how best to intervene.
- Explore the impact of historical trauma around pregnancy on birth outcomes.
- Explore the impact of nursery provision on child mental health.
- Explore the impact of the child's environment on their mental health.
- Examine the impact of pregnancy and early years services on long term emotional wellbeing of both mother and child.
- Explore the impact of emotional wellbeing of parents and children on financial stability.
- Investigate the impact of not meeting emotional needs during the neonatal period on child development.
- Examine how practice focusing on the parent and infant relationship, such as child and parent psychotherapy or Little Minds Matter, can impact on early development.

Diet and childhood obesity

- Explore factors affecting obesity rates in children such as access to sport in school and when a child is introduced to healthy eating as part of the curriculum.
- Investigate the relationship between awareness of special diets for some children and healthy eating, especially for those with allergies and intolerances.

Education

- Investigate the causes and impacts of the increase in Early Health and Childcare Plans (EHCP), including impacts on school exclusions and crime.

Covid-19

- Explore the impact of remote consultations on mother and baby as a result of the Covid-19 pandemic and compare this access across a range of maternal ages.
- Explore how decision-making for high-risk women in pregnancy was impacted by the pandemic and the move of consultations from face-to-face to online. Subsequently investigate the impact of this on maternal mental wellbeing.
- Investigate the impact of partners being excluded from pre-birth and antenatal care during the Covid-19 pandemic on family relationships and child development.
- Explore the impact of the Covid-19 pandemic on financial situations and how this impacts parental and child mental health.
- The impact of long Covid on families and the implications of limited parental care to their child as a result.
- Examine anxiety around going to green spaces during and post- Covid-19 pandemic.
- Explore the effects of increased screen time for children during Covid-19 pandemic.
- Explore increased opportunities during Covid-19 for father's caregiving and the impact on parent/infant relationship. Examine whether gender/parenting roles that have changed after the Covid-19 pandemic and the impact of this.
- Explore the impact of Covid-19 on primary relationships, this could be positive as babies less likely to be passed on to secondary carer.
- Explore the impact of increases in domestic violence as a result of the Covid-19 pandemic on child development.
- Investigate the relationship between parents declining 2-year funded nursery places and anxiety around Covid-19.

- Explore the impact of Covid-19 on child and parental wellbeing in the long term.
- Examine the impact of missing milestones, such as going to nursery and playing alongside of children, as a result of the Covid-19 pandemic on children's development (social and emotional).
- Explore the impact of to-ing and fro-ing of childcare/school during the Covid-19 pandemic on child development.
- Examine the impact of limited access to dentists during Covid-19 on oral health.
- Investigate the impact of loss of parents/grandparents during the Covid-19 pandemic on trauma and adverse child experiences (ACES).
- Explore the impact of social isolation during the Covid-19 pandemic on parental stress and mental health. Subsequently examine the impact of this on bonding, development of meaningful relationships (both inside and outside of the family unit) and parent's emotional availability for their babies.
- Explore the impact of Covid-19 and the reduced socialisation opportunities for new mothers on the mother's mental health and subsequently child development.
- Explore the impact of Covid-19 on the diet of those children who receive free school meals.
- Explore how Covid-19 has affected children in the different stages of their education and compare these effects across private and public education.
- Explore the longer-term impacts on the child as a result of the mother having Covid-19 when they were pregnant.

Stigma

- Investigate stigma associated with poverty on the children's physical and emotional wellbeing. This could include use of food banks or when parents cannot afford items for children e.g. school uniforms or latest fashion.
- Investigate stigma associated with special needs/ disabilities on children's wellbeing both physically and emotionally.
- Examine the impact of moving into a new area on children's wellbeing, including investigating negative experiences e.g. social isolation, discrimination, etc.

Access and inequalities

- Explore how socioeconomic status affects access to health services where both regional and national comparisons could be made.
- Examine the impact of access to green spaces and opportunities to access physical activities on child's physical activity and mental wellbeing.
- Examine the impact of women missing out on antenatal education and care (as a result of the pandemic or for other reasons such as late booking, pre- and post pandemic) on the child's development, breastfeeding and bonding.
- Explore access to specialist support for children with special educational needs or disabilities and issues around getting a diagnosis and support before they attend school. Investigate how this impacts long-term educational attainment.
- Explore and address inequalities in smoking cessation in pregnancy.

Problems at birth

- Explore the importance of gestation period and how prematurity affects resuscitation at birth.