



# Start for Life Outcomes Framework: identifying candidate indicators

---

March 2025

Hannah Cann, Lizzie Ingram, Zhen Rao,  
Diane Stoianov, Jane Barlow, Claire Powell, Estela Capelas  
Barbosa, Lisa Holmes, Pasco Fearon, Jenny Woodman

## Authors

Hannah Cann, Lizzie Ingram, Zhen Rao, Diane Stoianov, Jane Barlow, Claire Powell, Estela Capelas Barbosa, Lisa Holmes, Pasco Fearon, Jenny Woodman

## Funding

This project was funded by the National Institute for Health and Care Research (NIHR) Policy Research Programme through the Child and Family Policy Research Unit (PR-PRU-1217-21301). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

## Ethics

We received ethics approval from UCL Institute of Education Research Ethics Committee (REC1987). We registered the study with UCL Data protection registration (Z6364106/2024/04/128).

## Acknowledgements

We are grateful to Nesta's A Fairer Start Mission for supporting the secondment of Lizzie Ingram and Zhen Rao to our research team for the duration of the project. We have benefited from Dr Ingram and Rao's expertise and also wider expertise within Nesta. We also thank the key informants who generously shared the knowledge they had built up over their careers.

## Table of Contents

Authors	2	<b>Strengths and limitations</b>	<b>34</b>
Funding	2	Main findings	34
Ethics	2	<b>Implications</b>	<b>35</b>
Acknowledgements	2	<b>Bibliography</b>	<b>36</b>
<b>At a glance</b>	<b>4</b>	<b>Appendix 1</b>	<b>37</b>
<b>Executive summary</b>	<b>5</b>	<b>Appendix 2</b>	<b>44</b>
<b>Introduction</b>	<b>8</b>	<b>Appendix 3</b>	<b>46</b>
Approach	9	<b>Appendix 4</b>	<b>49</b>
<b>Aims</b>	<b>10</b>	<b>Appendix 5</b>	<b>50</b>
<b>Methods</b>	<b>10</b>	<b>Appendix 6</b>	<b>51</b>
Rapid review	10	<b>Appendix 7</b>	<b>57</b>
Searches	10	<b>Appendix 8</b>	<b>83</b>
Study Selection	10	<b>Appendix 9</b>	<b>86</b>
Inclusion criteria	10	<b>Appendix 10</b>	<b>89</b>
Data extraction	11	<b>Appendix 11</b>	<b>91</b>
<b>Results</b>	<b>15</b>		
Candidate indicators for monitoring population health of children <2y	15		
Included studies	15		
Candidate indicators	15		
SAFE	21		
HAPPY	23		
HEALTHY	24		
DEVELOPING	26		
EXTERNAL FACTORS	28		
Principles to monitor service performance	31		
1. Reach across the spectrum of child and family need	31		
2. Equitable reach	32		
3. Quality of services	32		
4. Workforce capacity	32		
5. Signposting for wider or specialist support	33		
6. Processes, procedures, conditions and culture	33		

## At a glance

In 2021, the previous Government in England set out their ambition to develop a Start for Life Outcomes Framework to support parents to give their children <2y the best start in life.[1] Our rapid responsive study for the Department of Health and Social Care aimed to:

1. Generate and annotate a list of candidate population health indicators in the domains used in the framework: Safe, Healthy, Happy, Developing and External Factors; and,
2. Generate principles for monitoring service performance for future frameworks in this area.

## Methods

We conducted two rapid reviews with systematic searches to identify indicators recommended in published frameworks or core outcome sets. We interviewed key informants (N=13) and conducted desktop research to generate commentary about the indicators. We applied criteria about data availability and interpretability to create a red, amber, green rating for each indicator. We used the interpretability rating to prioritise indicators for further investigation.

## Results

We identified 47 candidate indicators, of which 36 met our priority criteria. Many indicators featured in existing frameworks and had some relevant data already collected at scale in England. However, data were often not reported/available separately for adults or households with children and/or by age of child. Six of the prioritised indicators did not have any data currently collected. We also identified six principles for monitoring service performance:

1. Reach across the spectrum of child and family need;
2. *Equitable* reach;
3. Quality of services;
4. Workforce capacity;
5. Signposting for wider or specialist support;
6. Processes, procedures, conditions and culture.

## Key implications

- Significant further work would be needed to develop frameworks to monitor population-level outcomes for babies or assess the quality of services. Frameworks need a clear purpose and consideration of unintended consequences from focusing on some indicators and not others.
- The Public Health Outcomes Framework is already a rich resource with 24 (66%) of the 36 priority indicators already featuring in some form. The Public Health Outcomes framework was not designed specifically for monitoring outcomes in babies or infants, so any further work could consider how to maximise the utility of the resource for children <2y and their families.
- There is potential to improve the relevancy of existing data for children <2y, including protecting existing indicators, disaggregating reporting of data and/or new data linkages. A data review and improvement exercise could be part of developing an outcomes framework or be a stand-alone exercise. Any review should bear in mind that most existing indicators for children <2y are concentrated among babies and infant, rather than older toddlers.
- There are also areas for completely new data collection, though there should be robust justification for limiting new data collection to a single age of childhood (e.g. experiences of abuse, neglect including domestic abuse).

# Executive summary

## Introduction

In 2021, the previous Government in England set out their ambition to develop a Start for Life Outcomes Framework to support parents to give their babies and young children from conception to age 2 years the best start in life.[1] This work also supports the Government's public commitment 'to raise the healthiest generation of children' ever[2] and supports child health policy development.

This research uses four high-level outcome domains of Safe, Happy, Healthy, Developing and four categories of 'External Factors'. These were developed by the Department of Health and Social Care, through engagement with charities, voluntary and community organisations, local authorities, and academics to look at the evidence around what gives babies the best start in life. This work also developed draft definitions for each domain. DHSC is continuing to review these outcome domains and their definitions as further work is completed to explore how progress can be measured. The domains we use in this report are based on preliminary work on outcomes frameworks provided by DHSC.

The primary focus of this rapid study was to identify candidate indicators to monitor population health of babies, young children, and their families. However, we also had a secondary focus to generate principles for a framework to monitor service performance for this population.

## Aims

1. Generate and annotate a list of candidate population health indicators.
2. Generate a list of principles for any further work on an outcomes framework to monitor service performance.

<sup>1</sup> Data is available through the Fingertips dashboard, a large public health dataset containing indicators in four domains: wider determinants of health; health improvement; health protection; healthcare and premature mortality.

## Methods

### Rapid reviews

We conducted two rapid reviews with systematic searches to identify existing outcomes frameworks and core outcome sets that recommended relevant indicators for monitoring a) population health and b) service performance. We included frameworks published between 2014 and 2024 that included children <3y and their families, were designed for use in high-income countries, and which had used formal consensus methods, a systematic review, and/or a data item review to identify indicators. We systematically extracted indicators from each framework but excluded those not relevant to children <2y. To generate principles for monitoring service performance, we thematically analysed the indicators relevant to service organisation and delivery and family experience of services that we extracted from studies in our rapid reviews.

### Key informant interviews

To refine the scope and definitions of the framework domains and to generate qualitative commentary about candidate indicators for population health monitoring, we conducted 13 online interviews of 45-60 minutes with key informants from academia (N=10), and the third sector (N=3), chosen from our networks to maximise breadth of expertise.

### RAG (Red Amber Green) rating the candidate indicators

We placed each candidate indicator in one unique domain of the framework. We collected information from key informants and a desktop review about data availability and 'interpretability' of indicators (whether a rise or fall in the indicator would provide a clear signal about a rise or fall in the health and wellbeing of babies and very young children). We then applied criteria about data availability and interpretability to create a RAG (red, amber, green) rating for each indicator.

### Prioritisation

We identified 'priority' indicators for further investigation. These were candidate indicators that we assessed as green or amber on interpretability, either as an isolated indicator or when interpreted in combination with other indicators.

## Results

### Candidate indicators for population health monitoring

We identified 47 candidate indicators, of which 36 met our priority criteria for further investigation. Candidate indicators were largely concentrated in the domains of Healthy and External Factors.

Many of the candidate indicators already feature in existing outcomes frameworks, including the Public Health Outcomes Framework<sup>1</sup> produced by the Department of Health and Social Care in England. Even where indicators did not feature in an existing framework, there tended to be some existing data that may be useful. However, these data were often not reported or available separately for adults or households with dependent children and/or by age of dependent child.

Of the 36 prioritised indicators, there were six indicators for which there was no large scale or routinely collected data currently available at all: Experiences of abuse and neglect including domestic abuse (Safe); Parent or carer/infant relationship and family relationships (Happy); Healthy growth, weight, and size (Healthy); Healthy eating/nutrition (Healthy); Child physical activity/sedentary behaviour (Healthy) Parental quality of life (External Factors). Although some of these data (for example parent-infant relationship) could theoretically be collected during universal health appointments (e.g. in health visiting), there are questions about the impact of this on already stretched universal services.

### Principles for monitoring service performance

We identified six guiding principles that could be used as the basis for further work on a framework to monitor service performance for children <2y in England.

1. Reach across the spectrum of child and family need: bringing together service activity and service eligibility to estimate the proportion of target population who have contact with services.

2. Equitable reach: monitoring 'reach' of services by area and various other demographic or cultural variables within the population in order to narrow inequalities.
3. Quality of services: considering the nature of interactions with families to build trust.
4. Workforce capacity: monitoring aspects of the workforce (retention, stability, motivation etc.) to understand service capacity and quality, especially in conjunction with estimates of underlying need.
5. Signposting for wider or specialist support: monitoring the availability and accessibility of information for families across the areas of finances, health and social support.
6. Processes, procedures, conditions and culture: monitoring aspects of governance such as data and financial management, effective leadership, and the learning environment to understand the structure of internal processes which may affect service performance.

## Strengths and limitations

Our study is a first step towards more effectively monitoring population health and wellbeing for babies and their families, e.g. through an outcomes framework. Before any indicator can be included in a framework, feasible metrics need to be agreed with expert stakeholders and then quantitatively evaluated to make sure each one is valid, reliable, has sufficient statistical power, meets technical specifications of data quality, and allows us to either adjust for underlying population differences or to explicitly measure differences in the metric between population sub-groups.

We drew on a substantial body of existing work, including eight studies which used consensus methods. Consensus methods involve gathering opinions from an expert panel of lay members (expert by experience) and professional stakeholders. Structured techniques are used, such the Delphi expert consensus method which employs a process of repeated questionnaire and feedback.[3] The eight studies that we included consulted with a cumulative total of more than 1,000

<sup>1</sup> Data is available through the Fingertips dashboard, a large public health dataset containing indicators in four domains: wider determinants of health; health improvement; health protection; healthcare and premature mortality.

professionals and almost 300 parents. However, we did not conduct our own planned prioritisation work with stakeholders due to restrictions during the pre-election period before the general election in 2024. The rapid nature of our study means that our results cannot be considered comprehensive, and we have included a list of candidate indicators that were not reported by the literature that we included but should be considered in next steps. Our study constitutes an early step in developing outcomes frameworks to monitor population health and service performance for children <2y.

## Implications

- Significant further work would be needed to develop future frameworks. Part of this work would be to achieve clarity of purpose and examine any possible unintended consequences of focusing on some outcomes rather than others.
  - Further consensus work with expert stakeholders could narrow the list of candidate indicators for monitoring population health for children <2y and also check we have not 'missed' any key indicators from our priority list.
  - A shorter list of candidate indicators may be more feasible given the detailed evaluation work that would be required to assess each candidate indicator.
  - Many indicators we identified were potentially relevant to all children not just children <2y. There should be robust justification for limiting data collecting and/or reporting to a single age group of children and young people.
  - The Public Health Outcomes Framework is already a rich resource, with 24 (66%) of the 36 priority indicators already featuring in some form in this framework, many of which are specific to pregnant women, infants and preschool children, although the framework was not designed specifically for monitoring outcomes in these populations. It is important to consider how to maximise the utility of the resource for children <2y and their families.
- There is much potential to improve the relevancy of existing data for babies and very young children, even if these data do not meet all the criteria for inclusion in an outcomes framework. A data review exercise might:
    - Consider protecting existing indicators as well as developing new ones.
    - Start with all government funded surveys and official statistics perhaps using concepts such as 'think babies, think parent, think household' to investigate where existing data may be disaggregated to be relevant to children <2y.
    - Pay attention to older toddlers where there are fewer current indicators.
    - Test whether available measures are the best ones. New routine linkages may support the development of indicators for an outcomes framework and also facilitate a step change in research for children and their families.
    - There are also areas for completely new data collection e.g. on experiences of abuse and neglect, including domestic abuse.

## Introduction

The Early Years Healthy Development Review Report, commissioned by the previous Government in England recommended developing a Start for Life Outcomes Framework as part of their ambition to support parents to give their babies and young children the best start in life (from conception to age 2y).[1] Findings from this work also supports the Government's public commitment 'to raise the healthiest generation of children' ever[2] and supports child health policy development.

0-2y is a crucial period in a child's cognitive, emotional and physical development. Neuroplasticity in infants means that early experiences and interaction with their external environment during this time directly affect the development of their brains.[4] As it is a period of rapid development and due to neuroplasticity in infants, the earliest part of a child's life offers high opportunity for intervention to improve child health outcomes. The precedent for focus on this age in child health frameworks is well-established, appearing as a critical period in frameworks, initiatives, and guidance from the World Health Organisation, United Nations Children's Fund (UNICEF), the National Health Service (NHS) and Public Health England.[1]

Outcomes frameworks to monitor the health and wellbeing of a population consist of a set of agreed-upon health and wellbeing outcomes[5] that are considered crucially important for a particular demographic.[6] When implemented, an outcomes framework can support the planning and evaluation of services by helping identify the impact of interventions or policies.[7] They can also highlight particular areas or populations for prioritisation and support agencies to work towards a common goal.[7] Outcomes frameworks to monitor or evaluate service performance can be used at a national or local level and can orientate services to prioritised goals and support service improvement, including identifying any unintended harms.[8]

Outcomes frameworks are usually developed in consultation with key stakeholders to ensure they are relevant to the intended purpose[5] and meaningful for those at policy and local levels.[7] Outcomes frameworks usually consist of outcomes that can be compared using data, are amenable to intervention and are backed by scientific research.[7] There are usually high-level domains or 'outcomes' (e.g. 'healthy'),

indicators which can be used to measure these domains (e.g. oral health), and measurement methods ('metrics' e.g. no dental decay at age five years).[9] A single outcome may have multiple indicators and each indicator may have multiple metrics.[9]

The Early Years Healthy Development Review Report[10] outlines action areas to support the previous Government's ambition to develop a new Start for Life Outcomes Framework, which broadly covers the functions of monitoring population health and wellbeing and monitoring the performance of services for babies and young children. These are two distinct purposes which require specific outcomes with distinct indicators and metrics.

In 2024, the Department of Health and Social care in England (DHSC) commissioned a rapid study from the NIHR Children and Families Policy Research Unit to identify, using the high-level domains of Safe, Healthy, Happy, Developing, External Factors. These domains were developed by the Department of Health and Social Care, through engagement with charities, voluntary and community organisations, local authorities, and academics to consider the factors that influence good health and development outcomes for babies and young children. This work also developed draft definitions for each domain. The Department of Health and Social Care are continuing to review these outcome domains and their definitions as further work is completed to explore how progress can be measured. We also generated principles to guide future development of an outcomes framework to monitor service performance.

## Approach

There are standard methods for developing an outcomes framework. Our rapid review comprises the initial stages of identifying candidate indicators, with qualitative commentary on how meaningful (or 'interpretable') these may be and ease of data collection (Box 1).

We combine learning from existing outcomes frameworks, professional key informants and a desktop review of data available for each candidate indicator.

### Box 1: Standard methods for developing an outcomes framework

**Methods for developing an outcomes framework include the following stages, synthesised from Geary et al.[11] and A Better Start Common Outcomes Framework[1]:**

- 1. Identification:** identify candidate indicators with a systematic literature review and use lay and professional input to decide which are important, often using a formal consensus process.[11] This may include qualitative assessments of how far indicators are 'meaningful' or 'valid' e.g. stakeholder views on: how well the outcome is conceptualised in the indicator, whether changes in the indicator are likely to reflect changes in the outcomes of interest, the direction in which a change of the indicator will signal an improvement in the outcome and whether there are any contextual factors to take into account when interpreting the measures.[7] Some outcomes frameworks have also used 'pragmatic' criteria to assess indicators e.g. cost of indicator where it comprises a licensed tool, data availability or ease of data collection.[7] We also took this approach and collected information about data availability.
- 2. Development and evaluation:** quantitatively evaluate indicators in terms of:
  - *Reliability and validity:* how good is the measure at capturing the outcome. In our rapid study, we used the concept of 'interpretability' to capture all the dimensions of this qualitative assessment of interest, is the measure stable over time and can it detect changes in the outcomes i.e. what are its psychometric properties? Do we know the distribution of scores in a relevant reference population and are there clear cut-offs or a magnitude of movement of the indicator which will signal an improvement?[7,11]
  - *Statistical power:* is the indicator common enough at our unit of measurement (e.g. local authorities) to be sensitive to important variation, so that we detect meaningful differences and can be sure changes and differences between local authorities are not due to chance alone?
  - *Technical specification:* assessment of missing or inaccurate data.
  - *Fairness and inequalities:* Geary et al. argue that we should be able to adequately adjust for the underlying needs of the population to make fair comparisons between the indicator in local areas.[11] We would add that to meet the ambition of narrowing inequalities, each indicator should be reported for relevant sub-groups of the population. There should be consideration of intersecting inequalities (multiple and often cumulative disadvantage or discrimination).

Geary et al. argue that indicators within an outcomes framework should meet all these criteria.[11]

## Aims

1. Generate and annotate a list of candidate population health indicators
2. Generate a list of principles for any further work on an outcomes framework to monitor service performance

## Methods

### Rapid review

We conducted two rapid reviews to identify existing outcomes frameworks and core outcome sets for a) monitoring population health and b) monitoring service performance. Core outcome sets provide a standardised set of outcomes agreed through formal consensus building which can be used when designing, auditing or evaluating an intervention or service.[3]

We followed methods guidance from the Cochrane Rapid Reviews Methods Group.[12] Specifically, we worked closely with the Department of Health and Social Care to set the questions, refine the topic and define the review's parameters (including inclusion criteria). We limited our search databases and used a standardised form to extract data. We tested the primary search strategies by checking if three known relevant records were retrieved.[5,7,13] We deviated from Cochrane's methodological guidance by including grey literature (as outcomes frameworks are often published by government departments, arm's-length bodies and charities) and by using a single reviewer to screen records. We did not assess the quality of included publications.[12]

### Searches

We conducted searches in PubMed and Google Scholar (downloading the first 50 items) in May (population health) and July 2024 (service performance). We also hand-searched Google and websites for additional publications that met our inclusion criteria. See Appendix 1 for search strategies.

### Study selection

One researcher used our inclusion criteria to screen the titles and abstracts of all records found by our searches, discussing any uncertainty with the research team. See Appendix 2 for a flow diagram of publications included in our reviews.

### Inclusion criteria

We included publications which met all the following criteria:

1. Language and date: English language published between 1st January 2014 and 9th May 2024.
2. Country: described an outcomes framework or core outcome for use in OECD countries (The Organisation for Economic Co-operation and Development).[14]
3. Scope: described a set of outcome measures or indicators to monitor or measure the health, wellbeing, safety or the environment of babies, young children and/or their parents or carers. We excluded outcomes frameworks for specific medical conditions or events, such as cancer, stillbirth, or obesity.
4. Age: Included any period between pregnancy and three years old (i.e. slightly wider than the policy focus on children <2y). The wider age range was

intended to capture key indicators that we knew were already collected in the second year of life (i.e. between ages 2 and 3y). For example, the measure of child development (ASQ®-3) collected at the universal 2-2½-year health and development review.

5. Methods: reported empirical findings based on consensus methods and/or a systematic review of frameworks and/or a data item review. This meant we excluded relevant frameworks that were written as position or advocacy statements which did not report consensus or systematic review methods (N=3).[15-17] See Appendix 3 for a full list of the indicators which are recommended by these excluded publications but do not feature in our results.

## Data Extraction

From each publication, we extracted the recommended indicators which applied to pregnancy and children <2y (see Appendix 3 for a list of extracted indicators excluded on age-relevancy). When extracting indicators we used a standardised set of questions (Appendix 4).

## Domains

The domains used to categorised indicators are based on preliminary work on outcomes frameworks provided by DHSC. Table 1 contains our suggested definitions of each domain and, where relevant, comments on our rationale used in categorising indicators.

**Table 1: Definitions of indicator domains**

Domain	Definition	Comment
<b>Safe</b>	Every baby is safe and feels safe. They live in households without high levels of conflict between parents or other residents. Pregnant mothers and babies are protected from external harms and risk factors.	Our review found that parents and survivors of child maltreatment and domestic violence prioritised 'feeling safe' as a concept as well as concepts of harm and risk of harm. The idea of a loving and supportive relationship with a parent or carer is incorporated into the Happy domain as attachment is how babies and young children regulate to achieve a mentally positive state. Household conflict is included to capture 'feeling safe' and the relational aspect of safety for babies and young children.
<b>Happy</b>	Every baby is happy and able to experience the positive emotions associated with happiness. Pregnant mothers and babies are protected from excessive or unnecessary stress. Babies are in an environment where they can play, explore and have fun and their experiences lay the foundations for good mental health. They have a loving and supportive relationship with a parent or carer. They are able to form positive attachments to others. The term happiness is used here to convey the sense of being in a mentally positive state, rather than a momentary positive feeling and implies feelings of contentment, a sense of security, enjoyment, or flourishing.	This domain includes positive attachments to others (see comment on Safe domain).

Domain	Definition	Comment
<b>Healthy</b>	Every baby is in the best state of physical health, during pregnancy and once they are born. Babies, including those with complex needs, have the best possible health. Babies are protected from preventable illness.	Support for optimal health, including for complex needs, is a vision for 'service performance' (in this separate framework) rather than an ambition or signal relevant to underlying population health.
<b>Developing</b>	Babies develop in line with their age and health conditions, socially, emotionally, linguistically, cognitively and in terms of their motor skills. Babies and young children build the developmental foundations to enable future milestones to be met. During pregnancy, the early stages of a baby's cognitive development progress well.	
<b>External Factors</b> <i>Physical and learning environment</i>	The physical environment of the baby during pregnancy and the physical and learning environment after birth, includes the benefits provided by adequate provision of safe, warm housing and, later in life, open green spaces, as well as protection from the risks of cold, damp, or dangerous housing, noise, and poor air quality. Includes access to books and reading.	A common comment from stakeholders was that it is difficult to separate the environment and parental factors from child-level factors, particularly for babies and young children. For example, are children 'safe' if they don't have safe housing? Children also have a higher risk of sub-optimal development or of a negative mental state (see Happy) if their parent/carer has an addiction.
<i>Social environment</i>	This relates to the support and nurturing a strong local community provides. It also includes challenges that can arise from crime, domestic violence, or anti-social behaviour.	
<i>Economic circumstances</i>	These include the availability of resources, as well as the challenges associated with poverty and economic inequality.	
<i>Parent and carer health and wider circumstances</i>	Parent and carer health and wider circumstances include the strongly positive influence of caring, engaged parents and families, and the difficulties experienced by some who due to their own health challenges or wider circumstances have reduced parenting capacity and/or more difficulty in providing consistently provide a stable and nurturing environment for their baby. This can also include risks associated with behaviours such as drug misuse and smoking.	This includes the concept of 'parental health' which includes physical and mental health.

## Key informant interviews

To generate qualitative commentary about candidate indicators, in July and August 2024 we conducted 13 online interviews of 45-60 minutes with key informants from academia (N=10), and the third sector (N=3). We identified key informants through existing networks, chosen purposively based on their expertise so that we maximised a breadth of insights across the domains of Safe, Happy, Healthy, Developing and External Factors. We asked key informants to share their views on our initial list of candidate indicators, including their importance, strengths and weaknesses and interpretability (see Box 1) and whether there were any indicators missing.

We used established methods for rapid qualitative research to collect and analyse data from our key informants, including narrowly focused questions and RAP sheets (Appendix 5).[18] RAP sheets are structured tables for note taking during rapid qualitative data collection and are a data reduction method, tying data closely to narrow research questions at the point of collection.[18] We generated a transcript using the automated function in Microsoft Teams and used this transcript to add detail to the RAP sheets which we initially completed during the interviews.

## RAG (Red Amber Green) rating the candidate indicators

Using discussion among the team, key informant RAP sheets and desktop research, we placed each indicator in one unique domain of the framework and collated information about data availability and 'interpretability' (see Box 1 above for our definition of 'interpretability'). We then systematically applied criteria about data availability and interpretability to create a RAG rating for each candidate indicator (criteria listed in Box 1). We included an interpretability rating when the indicator was viewed in isolation and when viewed in combination with another indicator. See Table 2 for full RAG rating criteria. As part of our data availability commentary, we identified where indicators were already being used in current national outcomes framework in England.

## Prioritising

We prioritised indicators assessed as green or amber on interpretability, including those that were only assessed as amber when viewed in conjunction with other indicators.

**Table 2: Criteria for RAG (Red, Amber, Green) rating**

Rating	Data availability	Interpretability
<b>Red</b>	<p>No available data which can be produced by calendar year and age of child from:</p> <ul style="list-style-type: none"> <li>existing annual (or regular) surveys which can be used to produce modelled estimates for each local authority in England</li> <li>administrative data from health, education, children’s social care, family justice or the police</li> <li>official statistics for England</li> </ul> <p>This indicator would require new data collection to be implemented.</p>	<p>Very difficult to know if rises represent an improvement or decrease in child health and wellbeing (and vice versa) because of data collection or recording issues or because of a complex relationship between the indicator and child health and wellbeing.</p>
<b>Amber</b>	<p>Some data is collected but not currently reported by age of child (or for &lt;2y) or data collected and collated but serious quality issues with the data.</p> <p>These data sources will need a review and either reporting modification and/or data improvement work before they could be used as indicators.</p>	<p>When interpreted with caveats or caution, rises can represent an improvement or decrease in child health and wellbeing (and vice versa).</p>
<b>Green</b>	<p>Some data is already routinely collected and presented for either &lt;2y or &lt;5y in surveys, administrative data or official statistics (see ‘red’ above for more details).</p> <p>This data is available for &lt;2y and already reported for this age group.</p>	<p>Changes in indicator can be interpreted as an improvement or decrease in baby and young child health and wellbeing or, for external factors, changes in the family, household and community environment that we know a baby and young child needs to be safe, happy, healthy and develop.</p>

# Results

## Candidate indicators for monitoring population health of children <2y

### Domains

Some key informants suggested that parental, household and environmental factors should be nested within the domains of Safe, Happy, Healthy and Developing. This would be consistent with the approach taken by the Children’s Commissioner in their outcomes framework for children and families. [13] For example, quality of housing and air pollution could be nested as household and community-level indicators of Healthy.

### Included studies

We identified 17 existing outcomes frameworks or core outcome sets that met our inclusion criteria (see Table 3 for a summary of these publications and Appendix 6 for more detailed characteristics). Eight studies used formal consensus methods to identify and prioritise indicators, with a cumulative total of more than 1,095 professionals and 289 families consulted.

**Table 3: Scope and focus of the 17 included frameworks and core outcome sets**

Country	England N=8; Scotland N=1; Ireland=1; All UK N=2 Australia N=1; Global* N=4; Jersey N=1
Includes pregnancy	Yes N=10
Age range <i>frameworks in 1 category only</i>	Pregnancy only N=1 <3y N=2; <5y N=7; <8y N=7; <18y N=18
Methods <i>frameworks in multiple categories where relevant</i>	Consensus building N=8; Systematic review N=5 Data item review N=9
Framework focus	Holistic (all domain) health and wellbeing N=13 Child maltreatment and domestic abuse only**N=2 Nutrition only N=1 Physical health only N=3
<p>* OECD countries: members of the Organisation for Economic Co-operation and Development, an organisation which forms policies on international issues.<sup>14</sup></p> <p>** including children’s social care services</p>	

## Candidate indicators

We identified 47 candidate indicators, of which 36 met our priority criteria (Table 4). The 36 priority indicators were concentrated in Healthy and physical and economic environment and parental health and circumstances within External Factors.

In this results section, we discuss in detail the 36 priority indicators. The remaining 11 indicators are discussed in Appendix 9. Table 4 provides a summary table of each indicator with a more detailed table available in Appendix 7.

**Table 4: RAG (Red Amber Green) rating of candidate indicators**

Indicator	Collected in PHOF <sup>2,3</sup> and available for <3y	Collected only in LVP <sup>4</sup> and available for <3y	Data availability	Data interpretability	*
<b>Safe</b> Every baby is safe and feels safe. They live in households without high levels of conflict between parents or other residents. Pregnant mothers and babies are protected from external harms and risk factors					
Unintentional injuries, including deaths	N	Y <4y & <5y			
Intentional injuries, including deaths	N	Y <4y			
Experience of child abuse and neglect, including domestic abuse	Y <4y	N			
Contact with services for child abuse or neglect including domestic abuse	N	Y <1y & <4y			
Family & social relationships (conflict/stress)	N	N			
<b>Happy</b> Every baby is happy and able to experience the positive emotions associated with happiness. Pregnant mothers and babies are protected from excessive or unnecessary stress. Babies are in an environment where they can play, explore and have fun and their experiences lay the foundations for good mental health. They have a loving and supportive relationship with a parent or carer. They are able to form positive attachments to others. The term happiness is used here to convey the sense of being in a mentally positive state, rather than a momentary positive feeling and implies feelings of contentment, a sense of security, enjoyment, or flourishing					
Parent or carer/infant relationship and family relationships <sup>5</sup>	N	N			
Quality of life (overall quality including physical wellbeing)	N	N			
Play	N	N			
*Interpretability increases if viewed alongside other indicator(s)					

<sup>2</sup> Public Health Outcomes Framework (Fingertips).

<sup>3</sup> NB may also be used in The Children’s Commissioners’ Local Vulnerability Profiles.

<sup>4</sup> The Children’s Commissioners’ Local Vulnerability Profiles.

<sup>5</sup> ‘Attachment’ is challenging to measure, particularly at the population level. Parent/child relationship can be measured using available tools including the Mothers Object Relations Scales (MORS).

Indicator	Collected in PHOF <sup>2,3</sup> and available for <3y	Collected only in LVP <sup>4</sup> and available for <3y	Data availability	Data interpretability	*
<b>Healthy</b>					
Every baby is in the best state of physical health, during pregnancy and once they are born, including those with complex needs. Every baby and young child is protected from preventable illness					
Breastfeeding	Y (<8 weeks)	N			
Immunisation	Y (1y, 2y, 5y and 2-3y)	N			
Healthy growth, weight, and size	N	N			
Healthy eating/nutrition	N	N			
Child physical activity/sedentary behaviour	N	N			
Birth weight and size	Y (at birth)	N			
Gestational age	Y (at birth)	N			
Infant mortality/excess winter deaths	Y (<1y)	N			
Parental smoking/exposure to smoke in pregnancy	Y (pre-birth)	N			
Alcohol use in pregnancy	Y (pre-birth)	N			
Substance use in pregnancy	Y (pre-birth)	N			
Weaning	N	N			
Sleep quality and duration	N	N			
Crying/Consolability	N	N			

\*Interpretability increases if viewed alongside other indicator(s)

Indicator	Collected in PHOF <sup>2,3</sup> and available for <3y	Collected only in LVP <sup>4</sup> and available for <3y	Data availability	Data interpretability	*
<b>Developing</b>					
Babies develop in line with their age and health conditions, socially, emotionally, linguistically, cognitively and in terms of their motor skills. Babies and young children build the developmental foundations to enable future milestones to be met. During pregnancy, the early stages of a baby's cognitive development progress					
Overall development including gross and fine motor	Y (2-2½y)	N			
Language and communication development	Y (2-2½y)	N			
Social and emotional development (social skills, self-regulation, engagement with others)	Y (2-2½y)	N			
Cognitive development (executive function, concentration, attention, memory)	Y (2-2½y)	N			
Connected to family, friends and culture	N	N			
<b>External Factors</b>					
<b>Physical and learning environment</b>					
The physical environment of the baby during pregnancy and the physical and learning environment after birth, includes the benefits provided by adequate provision of safe, warm housing and, later in life, open green spaces, as well as the risks of cold, damp, or dangerous housing, noise, and poor air quality. Includes access to books and reading					
Housing	Y (all children)	N			
Air pollution	Y (not children specifically)	N			
Neighbourhood factors (includes green spaces, walkability, playgrounds, traffic)	Y (not children specifically)	N			
Access to books	N	N			
*Interpretability increases if viewed alongside other indicator(s)					

Indicator	Collected in PHOF <sup>2,3</sup> and available for <3y	Collected only in LVP <sup>4</sup> and available for <3y	Data availability	Data interpretability	*
<b>Social environment</b>					
This relates to the support and nurturing a strong local community provides. It also includes challenges that can arise from crime, domestic and sibling violence, or anti-social behaviour					
Community violence/crime	N	N			
Support from friends/family	N	N			
<b>Economic circumstances</b>					
Economic circumstances include the availability of resources, as well as the challenges associated with poverty and economic inequality					
Poverty/levels of deprivation/socioeconomic deprivation	Y (<16y and all children)	N			
Employment	Y (not children specifically)	N			
<b>Parental health</b>					
Parental mental health/well-being	Y (<1y)	N			
Parent physical health and disability	N	Y (<4y)			
Parental weight	Y (pre-birth)	N			
Parental activity level	Y (not for parents of <3y specifically)	N			
Eating behaviours & environment	N	N			
Parent alcohol or substance use (post-pregnancy)	N	Y (<4y)			
*Interpretability increases if viewed alongside other indicator(s)					

Indicator	Collected in PHOF <sup>2,3</sup> and available for <3y	Collected only in LVP <sup>4</sup> and available for <3y	Data availability	Data interpretability	*
<b>Other parent and carer circumstances</b>					
Parental quality of life	N	N			
Parental imprisonment	N	N			
Parent aged under 20 at time of birth	Y (pre-birth)	N			
Parental literacy and numeracy	N	N			
Parent language (levels of pregnant women with little or no spoken English)	N	N			
Parenting capacity/skills	N	N			
*Interpretability increases if viewed alongside other indicator(s)					

Of the 36 priority candidate indicators, 28 (77%) had some relevant data already collected in England. As Table 4 shows, 26 of the priority indicators (72%) were already used in an existing outcomes framework in England, mainly in the Public Health Outcomes Framework (N=24). The Public Health Outcomes Framework was introduced in 2012 by the Department of Health and Social Care in England to set out a vision for public health including health improvement, health protection and reducing inequalities. In this framework, indicators are reviewed every 3 years (last reviewed in 2019, with delays to the review cycle due to the Covid-19 pandemic and the 2024 general election).[10] There were a further two candidate indicators already used in some form in the Children’s Commissioner’s Local Vulnerability Profiles.<sup>6</sup> In Appendix 8 we give an overview of these frameworks and other existing data sources available for one or more of the 47 candidate indicators.

Although there is a high level of existing data which could be relevant to the candidate indicators, many of these data would require modification in routine reporting to be relevant to families with children and/or to be relevant to babies and children <2y. Additionally, many would require more granular reporting by area or sub-group to monitor inequalities. In some cases, existing data would need to be modelled to local area level from surveys that are already implemented each year in England (e.g. the Crime Survey for England<sup>7</sup>, English Housing Survey<sup>8</sup> or Understanding Society<sup>9</sup>, see Appendix 8). In other cases, generating annual indicators from existing administrative data is possible but would require high analytical capacity (e.g. identifying parental health indicators in primary care data). All existing data not already used as an indicator in one of the national frameworks would need to be investigated to make sure the most useful metric was being collected for an indicator and quantitatively evaluated against indicator criteria (see Box 1 for indicator criteria).

## SAFE

We found five indicators, including four priority indicators which are discussed below. For children <2y, many factors which may affect their safety relate to parents and caregivers such as parental alcohol and substance use and parental capacity and skills. In our report, these factors are categorised as External Factors as they relate to parental health and wider circumstances of the child, family, or household. Some other factors that relate to babies and young children feeling safe are contained within the Happy domain, for example: relationship with a parent/carer.

### Unintentional injuries, including deaths

The rate of death among children from unintentional injury is higher than for intentional injury but still relatively rare (N=152 in 2021, of which N=22 were infants).[19] Given the difficulties in ascertaining unintentional injury and relatively low incidence, all injury admissions in young children may be the most helpful indicator of whether children are safe. This data is already provided by The Public Health Outcomes Framework for children <5y (but not for younger children).

Although admission thresholds vary over time and deaths are relatively rare, it is easier to interpret these data than attendance at emergency departments. Attendance at emergency departments is influenced by parent/carer help-seeking behaviour and (perceived) availability and trust in community services, both of which may change over time.[20-21]

### Intentional injuries, including deaths

Death among children <18y from intentional injury, abuse, or neglect is rare (N=31 in 2021) but disproportionately affects infants, based on annual reports by the National Child Mortality Database<sup>10</sup>. [19] Small numbers might make this

<sup>6</sup> Local Vulnerability profiles were created by The Children’s Commissioner to help national government and councils identify how many vulnerable children there were in each local authority area.

<sup>7</sup> The Crime Survey for England and Wales is a longitudinal household survey conducted annually. About 75,000 households are invited to take part each year. One randomly selected member of a household is interviewed about their experiences of and perceptions of crime in the last year.

<sup>8</sup> The English Housing Survey is a national survey which collects information about people’s housing circumstances, including tenure type and composition and the conditions and energy efficiency of housing in England. Approximately ~10,000 households take part each year.

<sup>9</sup> Understanding Society (the UK Household Longitudinal Study) is a longitudinal household survey conducted annually since 2009. Approximately 40,000 UK households are included each year, with all members of a household interviewed about a range of topics including family life, health, education and income.

measure less suitable for an outcomes framework (Box 1). In terms of injuries, it is extremely challenging to gain population-level data distinguishing between intentional versus unintentional injury, even in hospital admissions where we have national data available from Hospital Episodes Statistics (HES). Injuries may be classified as intentional by clinicians using codes such as ‘violent shaking (0–5 years)’ or ‘skull and/or intracranial injuries due to inflicted blunt impact’,[22] although this is rare. More commonly, injuries are interpreted as likely intentional by researchers based on the type of injury and age (e.g. rib fractures in very young children).[22]

The Public Health Outcomes Framework reports hospital admissions for intentional and unintentional injuries as one category for children <5y (but not for younger children). Researchers using HES have found that using specific injuries in babies and young children admitted to hospital (such as long bone or rib fractures) would ‘miss’ most intentional injuries diagnosed and/or suspected by clinicians[23] but that we cannot tell how far changes in rates of ‘maltreatment-related’ codes are due to changes in recognition and recording or to changes in underlying rates of unintentional injuries.[24]

### Experience of child abuse and neglect, including domestic abuse

It is extremely challenging to collect data on abusive and neglectful experiences of children, including how many and which children live in households with domestic abuse. Despite likely under-estimates from self-reports, this is still the most accurate measure. A 2020 systematic review reported that self-reports or parent-reports for younger children had been used in 22 countries, but almost all were one-off research studies. Repeated data collection is needed to produce modelled indicators for all local areas of England.[25-26]As part of their local vulnerability profiles, the Office for the Children’s Commissioner has already used this approach, producing modelled prevalence of children aged 0-4y in households where a parent is suffering domestic abuse by local areas in England. However, this is underpinned by data from a 2014 survey and so cannot tell us about current prevalence or trends over

time. Careful exploratory work is also needed on the acceptability, ethical considerations, accuracy of any questionnaire and feasibility asking these questions in surveys.[27-28] The Office for National Statistics (ONS) is developing a repeat-design ‘survey of child safety’ for young people aged 11-25y to measure the prevalence of child abuse and neglect, including domestic abuse in England.[29] This plan excludes the experiences of babies and young children as well as primary school children. Despite a long lead-in time for design and significant and on-going cost, this type of data collection is the only way to gain estimates of child abuse and neglect, including domestic abuse over time in England, for any age of childhood, adolescence, or young adulthood.

There are two long-running annual surveys in England that already include a small number of questions about domestic abuse among adults (including young adults 16-26y), delivered as part of a wider questionnaire (see Appendix 7, row 3). The likely under-estimation of domestic abuse and violence in these surveys means we should interpret them as minimum estimates.[30] The data items in these existing surveys and the way they are reported could be reviewed and possibly revised to maximise their usefulness as an indicator of safety for babies and children <2y. For example, if numbers were not too small, the Crime Survey for England might report its domestic abuse measures by households with/without children, stratified by age of youngest child (all this data is currently collected but not reported in this format).[31]

### Contact with services for child abuse and neglect, including domestic abuse

Records from hospitals, GPs, children’s social care, police, and from the charitable sector are key in measuring the frequency with which children experience abuse and neglect, including domestic abuse. This administrative data is available at a population level (by age of child and by local areas,

<sup>10</sup> The National Child Mortality Database collates data on all children in England who die before their 18th birthday from child death overview panels, who are local statutory panels responsible for carrying out a child death review process whenever a child dies in their area

with some detail on family characteristics) and is an important source of information. However, there are known problems with using administrative data collected by services to measure the frequency of child abuse and neglect. Only a fraction of children experiencing abuse or neglect, including domestic abuse, come to the attention of children's social care services, and in police and health records which children have a record of maltreatment depends on the judgement and recording practices of professionals.[24,32] These factors contribute to both under-reporting of suspected abuse and neglect and under-identification of child abuse and neglect.

Identification practices and recording thresholds and practices will vary over time and between local areas, meaning we need to be cautious when interpreting changes to this indicator as changes in the safety of babies and young children. Administrative data can indicate how many and which children and families have recorded concerns about child abuse or neglect, but there will be much more abuse or neglect going on in the community which is suspected by professionals but not recorded using structured codes in the child or parent record, or not identified at all. Recording of abuse and neglect would maximise the utility of administrative data for indicating which children and families prompt concerns about abuse and neglect among professionals in different health services.

### **Children's social care**

Although administrative data are available on rates of children in contact with children's social care (Appendix 7, row 4), we know that the relationship between rates of children's social care interventions and underlying rates of abuse and neglect is not simple or linear. Studies have found that a child's chance of receiving children's social care intervention is partly determined by local thresholds for services which may change over time and/or be influenced by the how widespread deprivation is in the area or the level of inequality in the area[33], how much children are supported appropriately by other services or if there's a decrease in the need for child protection services (i.e. an increase in safety and wellbeing for children). In the absence of longitudinal survey data (see above), researchers have used poverty as a proxy for measuring underlying need for children's social care

services over time and between areas.[34-36] It is also difficult to interpret from rate of service provision alone whether services for children in contact with children's social care are working well (see *Principles to monitor service performance*).

### **Police**

Police reports of domestic abuse incidents and crimes are available at a population level. However, domestic abuse recording by police is subject to the attending officer's subjective decision-making as to whether or not a domestic abuse offence has occurred and it is not mandatory to report if children live in the household or were present at the time of the offence. Equally, routinely reported data on offenders (e.g. offenders who reoffend) does not report whether or not these adults had dependent children.

## **HAPPY**

We found three indicators that were grouped under the Happy domain, including one priority indicator which we discuss below. Data availability and measurement in this area is particularly challenging, with questions about how and where this data would be collected at a population level, and if acceptable and accurate tools could be identified.

It is important to note that child mental health was excluded as an indicator. The definitions given by the publications we included (e.g., child stress and anxiety; proportion of children with mental health difficulties; children's abilities to make a productive contribution to the local community, see Appendix 3) were not applicable to babies or very young children. Children <2y likely cannot yet understand and/or express their emotions in a way that would allow them to respond to questions or scales used in measures of mental health. Parent/infant relationship may be a proxy for child mental health in babies and children <2y.

### **Parent or carer/infant relationship and family relationships**

Measuring 'secure attachment' as two of the frameworks recommended (Appendix 7, row 6) requires a specialist assessment using standardised procedures

in a laboratory setting i.e., requires a highly qualified specialist professional such as a clinical psychologist, several hours of time and specialist equipment. This means it is not feasible to roll out this measure at a population level, due to cost, time and feasibility for families. However, there has been work to develop brief measures of attachment, which could eventually be used at scale outside of a specialist setting.[37] There are more measures available to assess parent-child relationships. Some of these are feasible to implement universally but work is needed to ascertain the quality of these measures.[38] One of the post-natal measures in this systematic review, the Mothers Object Relations Scales (MORS), has been used in the Born in Bradford cohort in England, in the Better Start Lottery Initiative and in some local areas in receipt of Family Hubs and Start for Life Programme funding, suggesting high acceptability within an English context.[38-40] Implementing a measure nationally is difficult for a number of reasons, including inconsistency in which assessment tools are preferred by and/or accepted as the basis of referrals by local Integrated Care Boards (ICBs) within local services.

## HEALTHY

We found fourteen indicators that were grouped under the Healthy domain, including 11 priority indicators which are discussed below. Many of these indicators are already being routinely collected and reported as indicators within the Public Health Outcomes Framework, however often not disaggregated for children <2y (Table 4). Our key informants reported it may be important to consider additional metrics in future reviews of indicators, giving the examples of whether breastfeeding is direct or expressed and completed courses of vaccinations as well as specific vaccines (Appendix 7). Many of the candidate indicators in this domain related to pregnancy or the perinatal period. There may be important indicators not listed here for

older toddlers (e.g. children aged 2y) such as chronic health conditions.

### Breastfeeding

The Public Health Outcomes Framework includes a metric on whether baby's first feed was breastmilk (from the Maternity Services Dataset<sup>11</sup>) and breastfeeding prevalence at 6-8 weeks (from the interim health visiting service delivery metrics, see Appendix 7, row 9). There are proposals to discontinue the interim health visiting service delivery metrics[41] and rely instead on the Community Services Data Set<sup>12</sup>, which has high levels of missing data (though we haven't found any published analyses of missing breastfeeding data specifically).[42] Researchers have advocated for breastfeeding measures throughout the first two years of life (i.e. beyond 8 weeks). This data was previously collected every five years in the National Infant Feeding Survey<sup>13</sup> (1975 to 2010).[43]

### Immunisation

The Public Health Outcomes Framework includes an indicator of population coverage of specific vaccines at ages one, two or <5y and a separate indicator for children in out-of-home care (Appendix 7, row 10). In line with WHO guidance, UK targets are for 95% coverage of all routine childhood immunisations by age 5.[44] Routine vaccinations include Measles, Mumps and Rubella (MMR), the '5 in 1' vaccine (DTap/IPV/Hib), Pneumococcal Conjugate Vaccine (PCV), Hib/MenC, and Meningitis B.[44] In 2022-23, coverage decreased for 12 of the 14 measures reported, and no vaccines met the 95% target.[44-45] One of our key informants advised that an indicator measuring completed course of immunisations is preferable to vaccination rates at each age interval. Some indicators for immunisations include data submitted directly to NHS Digital or Office of Health Disparities and Improvement (OHID) by sub-ICBs or local authorities (Appendix 7, row 10).

<sup>11</sup> NHS Digital extracts clinical and operational data about activity carried out by Maternity Services. Data collated includes mother's details, mother's booking, pregnancy and diagnosis details, care contacts and activities, mother's labour and activity details, anonymous assessments and findings, baby's details and hospital provider spells (inpatient stays in hospital during the pregnancy).

<sup>12</sup> NHS Digital extracts clinical and operational data on children and adults from community services such as health centres, Sure Start centres, day care facilities, schools or community centres or mobile facilities. This data is available via the CSDS. Data collated includes personal and demographic data, social and personal circumstances, breastfeeding and nutrition information, care event and screening activity and diagnoses, including long-term conditions and disabilities. Data is available for secondary uses such as research. See here for further details: <https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set>

<sup>13</sup> The Infant Feeding Survey explores infant feeding practices in England in the first year of a child's life, asking mothers about topics such as breastfeeding, use of formula, perceptions of feeding and weaning. Since 2010, the latest survey is the Infant Feeding Survey 2023 which was run by Ipsos.

## Healthy growth, weight, and size

Seven publications recommended healthy growth, weight, and size as an indicator, but definitions were mixed. For example, three publications defined healthy growth, weight, and size as obesity, one as malnutrition, two as BMI and one as height and weight (Appendix 7, row 11). There is currently no data collected at a population level that could be used to monitor health growth, weight and size for children <2y, although the National Child Measurement programme collects height and weight surveillance data for children aged 4-5y. One key informant highlighted that reported cases of malnutrition in the UK are so small that it would be difficult to measure changes in the data. In addition, one of our key informants raised that there are difficulties in measuring BMI in the 0-2y population and there may be more benefit in measuring rapid weight gain over a short period of time as an indicator of future health risk.[46] The Born in Bradford study tracks the lives of over 40,000 individuals and contains data on height and weight at 6, 12, 18 and 24-months. [47] Our key informants indicated that such data could potentially be used to model population estimates for an indicator of healthy growth and weight.

Our key informants told us that if this candidate indicator were better defined and data available to measure it at a population level, changes in data for this indicator would likely be highly indicative of changes to the health of children <2y.

## Healthy eating/nutrition

The Scientific Advisory Committee on Nutrition (sub-group maternal and child nutrition) recently published a review of evidence on diets and nutrition of children in England aged 1-5y. The Committee concluded that the current diet of young children was too high in total dietary energy, free sugars, saturated fats and protein but too low in fibre (compared to current recommendations).[48] The committee suggested monitoring nutrient intake and status in young children (by subgroup), the adoption of plant-based diets, the prevalence of overweight children and obesity due to excess energy intake, and intake of low/no calorie sweeteners. There is currently no population-level data available on the diets and feeding patterns of young children in England apart from rates of breastfeeding at 6-8 weeks.

## Child physical activity/sedentary behaviour

Although one publication recommended child activity/child sedentary behaviour as an indicator[5], their definition was unclear (Appendix 7, row 13). There is currently no data collected at a population level in England and a 2017 systematic review concluded that we did not yet have clear thresholds for 'healthy' levels of exercise for very young children.[49] Our key informants indicated that for young children it might be more appropriate to measure 'screen time', access to green spaces, active play, and/or available Stay and Play sessions instead of 'physical activity', although the feasibility of measuring most of these at a population level is likely to be challenging. The 2017 systematic review and Canadian research also recommends using screen time in 3-4y olds as the main measure of health-affecting sedentary behaviour.[49-50]

## Birth weight and size

The Public Health Outcomes Framework publishes metrics of low birthweight of term babies and low/very low birth weight of all babies (see Appendix 7, row 14). Low birthweight is defined as <2500g and very low birthweight as <1500g. Low birthweight is recognised as a risk factor for impaired development in early childhood and death in infants.[51] Our key informants noted that, to understand trends in birth weight, these data need to be viewed in combination with trends in twin births, gestational age, and maternal age at birth.

## Gestational age

The Office for National Statistics publishes metrics on the crude number of births at <37 weeks gestation. [52] Preterm birth is associated with poorer health and developmental outcomes in babies and young children that persist through childhood, with evidence of a 'dose-response' relationship (high chance of better outcomes for every extra week of gestational age).[53-54] Although premature birth is associated with maternal ethnicity, socioeconomic factors, smoking during pregnancy, and maternal age (40 years and over)[55], these factors do not fully explain the relationship between gestational age and later educational outcomes.[53-54]

## Infant mortality/excess winter deaths

The Public Health Outcomes Framework includes data on infant (<1y) deaths per 1,000 live births. [56] One key informant advised that it is important to consider gestational age (see above) and rates of recorded stillbirth (produced as national statistics) in combination with infant death estimates. A study found that increasing rates of infant deaths in England were entirely driven by deaths in the first 6 days of life among babies born before 24 weeks of gestation (and who were recorded as a live birth).[20] The Office for National Statistics reports that although babies born at under 24 weeks gestation accounted for only 0.1% of births in 2022, these babies accounted for 29.5% of neonatal deaths in the same year.[57] Although changes in rates of infant mortality could also be an indicator of health service quality, another epidemiological study found that most of the difference between rates of infant death in England and Sweden (higher in England) were explained by birth characteristics and socioeconomic factors (i.e. not service performance).[58]

Excess winter deaths are deaths over and above the usual 'summer' rate that occur from December to March.[59] However, these deaths predominantly affect the elderly.

## Parental smoking, alcohol use and substance use in pregnancy

This section covers the following three indicators as some of the discussion is relevant to multiple indicators: Parental smoking/exposure to smoke in pregnancy; Alcohol use in pregnancy; Substance use in pregnancy. The Public Health Outcomes Framework publishes data on the percentage of pregnant women who smoke, drink alcohol and use substances at the time of their booking appointment with a midwife in early pregnancy from the Maternity Services Dataset (Appendix 7, row 17). Smoking at time of delivery is also published, from data directly submitted by sub-ICBs (Appendix 7, row 17).

All these data collected at the booking appointment are subject to social desirability bias (a tendency to underreport socially undesirable attitudes and behaviours) which will lead to under-estimates. This is particularly true for heavy drinking and substance use, where disclosure may lead to child protection

involvement but will also affect all tobacco and alcohol data in pregnancy.[60] We know that in 2018-19 nearly half of records in the Maternity Services Dataset had an invalid or missing smoking status.[61] The Maternity Services Dataset could be contextualised to ascertain under-reporting in smoking in pregnancy by comparing to data already collected in Understanding Society, though currently numbers of pregnant women and response rates for questions on smoking are both low. Administrative data from primary care may offer an alternative source of data to ascertain rates of tobacco, alcohol and substance use in pregnancy, although there are challenges. Currently no one primary care dataset covers the whole of England and primary care data is dependent on recognition by the GP and affected by variation in recording practices. Additionally, linking family members and developing up-to-date code lists requires high analytical capacity.[62]

## DEVELOPING

We found five indicators in the domain of Developing, including four priority indicators which are discussed below. All four prioritised indicators are related to specific developmental domains (e.g. language) or to overall development across domains (i.e. a holistic measure).

Child developmental data is already collected as part of a universal health and developmental review at age age 2-2½y.[63] and used as an indicator within the Public Health Outcomes Framework (Appendix 7, rows 23-27). The data underlying this indicator is submitted directly by local authorities to the Office for Health Improvement and Disparities in England via the interim health visiting reporting metrics. As the name suggests, these data are only meant to be temporary. The alternative source of data is the Community Services Data Set, which has very incomplete data on child development age 2-2½ years. Our recent study found that there only 64 local authorities (of 151) had at least one quarter (3 months) of complete data in the Community Services Data Set between 2016-2020. [64]

## Overall development, across developmental domains

Since 2015, the Ages and Stages Questionnaire (ASQ®-3) has been the recommended tool for measuring five key domains of early child development: communication, fine motor, gross motor, problem-solving, and personal social development. Motor development was not identified as a separate indicator in our review. Local authorities must offer a 2-2½y review, although use of the ASQ®-3 is not mandated.

The currently implemented tool is not very sensitive but is specific. A 2024 review found that when used on its own the tool will miss many children who have below expected development (and especially those with mild or moderate developmental delay) but that it does not often misidentify delay in children who are in fact developing typically.[65] The same review found that there were other all-domain tools such as Caregiver Reported Early Development Instruments (CREDI) which perform similarly and could feasibly be used in an English health visiting setting, where this data is currently collected.[65] On a population level, scores from these tools can be interpreted as a minimum estimate of children with moderate and severe developmental delay. There will be variation in how the tool is used across health visiting teams and local authorities which complicates geographical comparisons, but it could be further standardised.[65]

There is a need for further work to improve completeness of child development data age 2-2½y (and other data) in the Community Services Data Set before the interim reporting system is withdrawn. There is also a need to create norms for the universal tool to measure child development at age 2-2½y in an English population. Currently, we are using the cut-off points for 'below expected development' based on US populations.

An indicator of child development age 2-2½y should be operationally consistent with the teacher-assessed indicator of child development age 4-5y (Early Years Foundation Stage Profile) so that trends across childhood can be tracked at a population level. If there are differences between a child's assessed development at age 2-2½y and at age 4-5y, it is important to know that this represents a true change in developmental trajectory of the child, rather than differences in the assessment measure used.

## Language and communication development

There is a communication domain of the currently used universal tool, with the same data completeness issues described above. A complementary data source for this indicator could be the early language identification measure (ELIM). It is recommended that all local authorities use ELIM to collect additional data on children's speech, language, and communication development as part of the 2-2½y review (Appendix 7, row 24). ELIM data should in theory be available in the Community Services Data Set but is likely to be incomplete even where the tool is being used. Attention needs to be paid to what this measure would add over and above the communication domain in the currently used tool (ASQ®-3).

## Social and emotional development (social skills, self-regulation, engagement with others)

There is a personal social domain of the currently used tool with an extra set of socio-emotional questions which are sometimes used, subject to the completeness issues described above.

Based on their review of existing outcome frameworks for children, For Baby's Sake and Kindred Squared have argued that children's social and emotional development is not sufficiently captured in existing frameworks or in cross-domain tools despite evidence that it considerably impacts key academic and health outcomes.[9] They also found that there is little agreement on what 'good' looks like concerning children's social and emotional development and how to measure it, which likely contributes to its lack of sufficient inclusion in existing frameworks. National high-level agreement (i.e., not service-specific or local) on what ideal outcomes look like for social and emotional development is one of several recommendations to improve indicators outlined in the report.[9]

## Cognitive development (executive function, concentration, attention, memory)

The problem-solving domain of the currently used tool used as part of universal health and developmental reviews could be used to measure cognitive development, with the same data completeness issues described above.

## EXTERNAL FACTORS

We found 20 indicators in the External Factors domain, including 16 priority indicators which we discuss below.

### Housing

Good quality, stable housing was consistently highlighted by our key informants as an important determinant of babies and young children being Safe, Happy, Healthy and Developing and which should be monitored at a population level. This is in line with what we know from other analyses, which have concluded that children are one of six groups of the population who are typically at greater risk of harm from their housing conditions.<sup>[66]</sup> We identified candidate indicators on housing across the dimensions of: homelessness, temporary and unstable housing, quality and suitability of housing and affordability of homes.

#### Homelessness

Measures of homelessness for households with children (households owed a prevention or duty relief under the Homelessness Reduction Act) are already used as an indicator of child and maternal health in the Public Health Outcomes Framework (Appendix 7, row 28). However, these data are not reported for children by age.

#### Temporary and unstable housing

The Local Vulnerability Profiles (an outcomes framework, see Appendix 8) reports rates of households with dependent children in each local authority and numbers of children in temporary accommodation, but data are not reported separately by age of child.

#### Quality and suitability of housing

Important data on household overcrowding, suitability and quality is collected each year in the long-standing English Housing Survey, which uses interviews with a representative sample of households and a visual inspection by a qualified surveyor of a subsample of these homes (see Appendix 7, row 28 for measures). The questionnaire for the English Household Survey captures information on the number of dependent children in the household and their age by age-category (including <1y and 1-5y). However, results by age of youngest child are not currently reported.

### Affordability

Data on affordability of housing by local authority is released each year by the Office for National Statistics using data from administrative sources and a survey on earnings (Appendix 7, row 28). There is currently no information reported on differential affordability for families with children or young children in this release.

### Air pollution

Our key informant expert on air quality and child health noted that there is no safe level of air pollution and that exposure to air pollution is particularly harmful for pregnant women and young children (Appendix 7, row 29). A measure of mortality attributable to particulate air pollution and annual concentration of fine particulate matter at an area level, adjusted to account for population exposure, is already used as an indicator of 'health protection' in the Public Health Outcomes Framework (Appendix 7, row 29). There are over 1,500 sites across the UK that monitor air quality, and the Department for Environment, Food and Rural Affairs make this data available for small areas. <sup>[67]</sup> PM 2.5 (fine particulate matter with particles  $\leq 2.5$  micrometers diameter) warrants further investigation as an indicator of health-harming air pollution for young children, babies and pregnant women (Appendix 7, row 29).

### Neighbourhood factors (includes green spaces, walkability, playgrounds, traffic)

The Office for National Statistics provides statistics on access to garden space, public parks, and playing fields at a small area level. However, this is not available specifically for babies and young children (Appendix 7, row 30). The Public Health Outcomes Framework contains relevant data on noise complaints and exposure to noise pollution by local area but not specifically for children or households with children. The Green Space Index reports the % of children aged <9y who live more than 10 minutes' walk from a playground but not specifically for children <2y (see Appendix 7, row 30). Our key informants indicated that much of this data on green space and the neighbourhood environment was interpretable as an indicator of health and wellbeing in babies, young children, and families despite not being reported specifically for this age group (see Appendix 7, row 30).

## Access to books

One publication recommended access to books as an indicator.[68] Although in some low- and middle-income countries up to half of households with children do not have any children's books, this is not the case in England.[69] This means that quantity and type of books available and parental involvement in reading in England may be a better signal of home learning environment than access to books. The children of the 2020s cohort study in England reported that babies aged 9 months who were read to several times a day understood more words than those who were not.[70] Understanding Society reports how often a parent reads to their child (Appendix 7, row 31).

## Community violence/crime

Key informants told us that crime in the community was likely a key factor for families and therefore children *feeling* safe. In other words, the relationship between crime in the community and very young children feeling safe is mediated through the family. Understanding Society surveys people's experiences of crime within their neighbourhood and the Office for National Statistics publish data on incidences of household crime, personal crime and data recorded by Community Safety Partnership Area.

## Support from friends/family

Definitions for this indicator in the published literature include the wider family and social network and the quality of the relationship between caregivers (Appendix 7, row 33). Social support for parents of young children is positively associated with parental self-efficacy[71], children's mental health and well-being, and parent-child relationships[72], based on studies from the Netherlands and China. A parent/carer's support system may be an indirect and contextual factor that influences their relationship with the child (see our results section on the Healthy domain).

## Poverty/levels of deprivation/socioeconomic deprivation

Material deprivation is a key determinant of child health and wellbeing[73] (i.e. there is very strong evidence that material deprivation is associated with and has

a causal relationship with child health). There are several sources of data available for an indicator of material deprivation or poverty in families, including fuel poverty, food poverty and proportions of families with low income (Appendix 7, row 34). However, not all these measures are reported for families with children and where they are, the statistics are not disaggregated by age of child (Appendix 7, row 34).

A recent study concluded that household income in early childhood was a stronger and more consistent predictor of outcomes at age 17y than a commonly used neighbourhood measure (Index of Multiple deprivation) and that household income should be used alongside IMD to understand health-impacting deprivation in population-health research.[74] As the currently available data on poverty is binary (e.g. % of children in low-income families) or at small area level (e.g. IMD), they obscure the gradient of income where lower income predicts adverse health outcomes for young children across the whole distribution of income deprivation.[74-75] Currently, the Office for National Statistics derives household income measures, but allows their use only at the area level. [76-77] Recent Office for National Statistics research, using employment data linked to health records, could serve as an exemplar for broader use of anonymised income data linked to administrative healthcare data for research. This household measure of income could then be used to generate a population-level indicator.

## Parental mental health/well-being and physical health/disability

This section covers both parental mental and physical health, as some measures discussed below relate to both. Although only two publications recommended parental mental health as an indicator, many of our key informants suggested it as important to measure in order to understand the health and wellbeing of babies and young children. The Public Health Outcomes Framework publishes data on estimated numbers of women with specific mental health conditions during pregnancy (see Appendix 7, row 36), but this data is modelled using data from a one-off national survey and is flagged in the framework as having 'concerns with data quality'[78]. There is no routinely reported data on parental physical health or disability.

Administrative data from primary care may offer an alternative source of data on parental health and has been used to estimate recorded mental health problems and physical health in parents (both mothers and fathers) of children from conception to age 2y: 27% of almost 130,000 children had at least one parent with a recorded mental health problem and up to 73% had a parent with a physical health problem before the age of 2y. High analytical resource is required to produce these estimates (see Parental smoking, alcohol use and substance use in pregnancy).

### Parental weight

Three publications recommended parental weight as an indicator. One expert stated that ideally the weight of parents at pre-conception would be measured as this can indicate the future weight and overall health of the child. Data is available on the percentage of pregnant women who are obese (BMI $\geq$ 30kg/m<sup>2</sup>) at the time of booking an appointment with a midwife (Appendix 7, row 38), although this is after conception. Hypothetically, it may be possible to capture data on individuals of reproductive age who engage with health services.

### Parental activity level

Parental activity level was recommended as an indicator in one paper. Data is available on the percentage of active and inactive adults in England, but it is not granular enough to analyse in terms of parents of young children (Appendix 7, row 39). Understanding Society publishes data from parents on the amount of vigorous and moderate activity they have done in the last seven days so it may be possible to model this to a population level. There is some evidence to support a relationship between parents' and children's activity levels but is not clear how relevant this is to children aged <2y.[79] There is some evidence that parents can influence their child's activity levels independently to their own, for example by limiting screen time.[80]

### Eating behaviours & environment

Understanding Society provides data on parents' food preferences, including the number of vegetables eaten daily. There is some evidence that parental eating

behaviours are correlated with child eating behaviours but that a healthy food environment may mediate this relationship.[81] This suggests that the relationship between parent and child eating behaviour is complex and multiple indicators may have to be viewed in combination to be interpretable.

### Parent alcohol or substance use (post-pregnancy)

These indicators were considered important by key informants but tricky to measure. We know from cohort studies that the prevalence of parental alcohol use in England (at a level that is likely to affect children) increases with a child's age, is lowest for mothers during pregnancy and highest for parents of children between 12y and 14y.[82] The Local Vulnerability Profiles have data on Child in Need assessments that include references to parental substance use (or substance abuse by an adult living in the home) as a risk factor. This is disaggregated by age and includes the 0-4y range but only represents families where the child has been referred to and assessed by children's social care and these factors have been recognised by professionals. Understanding Society includes responses from parents on their use of drugs and alcohol in the previous year and their current alcohol use (Appendix 7, row 41). Another source of data may be administrative health data, including primary care data or hospital data although this will substantially under-estimate parental substance or alcohol use[82] and be influenced by changes in the way professionals identify and record alcohol and substance use in adults (see section Parental smoking, alcohol use and substance use in pregnancy). Despite under-estimating prevalence, a recent analysis of primary care data in England reported that 14.3% of children <2y had a parent with a primary care or hospital record of alcohol or substance misuse.[83]

### Parental quality of life

A quality of life indicator for parents is a way of capturing multi-dimensional health and wellbeing of parents/carers. There exist short measures of 5-10 questions which ask adult respondents to rate how far statements apply to them across domains of mood/mental health and physical health e.g. pain/mobility (Appendix 7, row

42). These measures may be another way of capturing parental mental and physical health, including less severe or undiagnosed problems but are not routinely used (as far as we know) at scale in England. Further investigation of this indicator would need to review the evidence on how far parental quality of life is correlated with health and wellbeing in children <2y.

## Parental imprisonment

A parent in prison is widely considered to constitute an Adverse Childhood Experience (ACE). ACEs are associated with higher risk of poorer mental and physical health outcomes in childhood and beyond. [84] The Ministry of Justice has developed estimates of the number of parents in prison by linking data from His Majesty's Prison and Probation Service (HMPPS) and His Majesty's Revenue and Customs (HMRC) but do not disaggregate this by age of child (Appendix 7, row 43).

## Parent aged under 20 at time of birth

One publication recommended young maternal age at time of birth as an indicator. The Public Health Outcomes Framework has data on mothers aged <20y at antenatal booking (from the Maternity Services Dataset) and data on the percentage of delivery episodes where the mother is aged <18y. Understanding Society also has data on the age of a parent when their child was born. However, there's evidence to suggest that the association between teenage parenthood and child outcomes is driven by environmental factors and may be acting as a proxy for deprivation or other adversity in parents.[85]

## Principles to monitor service performance

We included 21 publications which each reported indicators relevant to monitoring service performance relevant to babies and children <2y. Fourteen of these included publications were also included in our review of candidate indicators for monitoring population health (Appendix 11).

From these 21 publications, we generated six guiding

principles to use for further development of a framework to monitor the performance of services for children <2y and their families. Appendix 11 presents full details of the extracted indicators for service performance, by guiding principle.

Our literature review suggested that maternity services, health visiting, early childhood education and care, SEND assessment and support, Family Support and children's social care services are key ones to monitor to understand reach and equitable reach of services for babies, young children and their families. Frameworks for monitoring service performance would need to consider the wide breadth of services of offer in conceptualising service 'reach', as we outline below.

## 1. Reach across the spectrum of child and family need

Service activity can tell us about the volume and characteristics of children and families with whom services have contact. However, service activity on its own does not tell us about children and families who are eligible for and/or may need services (only some of whom will receive these services). The concept of 'reach' brings together these two pieces of data (i.e. numerator **and** denominator) so we can estimate the proportion of the eligible or target population who come into contact with specific types of services.

### Universal services

For universal services this is relatively straightforward: there is usually data available on volume of service activity **and** population by age in each local area of England. The concept of 'reach' in universal services was evident in the indicators recommended by our included frameworks, including proportion of eligible children taking up the childcare offer, and proportion of children receiving their mandated health visiting contacts or maternity care (Appendix 11). There are national statistics on the 'reach' of universal services from Office for National Statistics (uptake of childcare) and receipt of health visiting contacts (interim reporting metrics submitted by local authorities to the Office for Health Improvement and Disparities (OHID)).

## Targeted

To monitor 'reach' of targeted services such as SEND (Special Educational Needs and Disability) or child protection services, we need estimates of underlying need for the service in the population. This will require separate analyses (e.g. modelling of SEND prevalence for local areas and population sub-groups based on healthcare data) or entirely new data collection (e.g. a survey of parents to estimate prevalence of abuse and neglect in the community, see Safe domain). This can become complicated in cases where guidance is applied differently across regions e.g. in terms of thresholds for safeguarding. The frameworks that we found were much less clear on how we might ascertain 'reach' of targeted services and instead focused largely on rates of service activity (Appendix 11).

## Across the spectrum of need

Information on service reach across the spectrum of need is important for understanding how far services as a whole might be reaching certain groups of the population. For example, in order to understand how far services are reaching children and families who have experienced (risk of) child abuse and neglect, we need to know about both child protection activity **and** other service activity. If we had information on rates of child protection services, rates of Family Support services and rates of targeted community services e.g. additional contacts by health visiting teams[86], we would have a better idea of how many families experiencing difficulties are being reached and how retraction or expansion of one service may or may not affect total reach of services.

## 2. Equitable reach

In order to understand and support efforts to narrow inequalities, equitable reach should be monitored. This requires looking at 'reach' of services by area (i.e., whether services are located within easy geographical reach for the target population) and for sub-groups of the population, including young parents, parents who have been in care, parents with learning needs, families with lower incomes and families who may benefit from culturally respectful services (Appendix 11). A recent review of research into the provision of children's social

care in England highlighted a need for more research into the reach and quality of these services for SEND children [87].

## 3. Quality of services

As well as the extent of reach and equitable reach, quality of services matters. Based on our review, the concept of 'high quality' services may include the nature and tone of the interactions with families e.g. family satisfaction, trusting relationships between professionals and families, respecting a child and family's rights and offering person-centred care (Appendix 11). Unintended harms from medical intervention (or lack of intervention), unintended harms from welfare services and cost-effective use of resources could also be conceptualised as indicators of service quality (Appendix 11).

Some frameworks suggest using indicators which signal that a service has or has not provided preventive care or has released a child too early from their care. For example, the proportion of repeat child protection (Section 47) enquiries of children previously subject to a child protection plan or hospital admissions for illnesses which in theory could have been treated in a community setting (ambulatory care sensitive conditions, Appendix 11).[88]

It is important to note that building a trusting relationship with families is considered a key component of high-quality service delivery in the early years and this is extremely difficult to capture in an outcomes framework. [8, 89]

## 4. Workforce capacity

Monitoring staff retention, the stability of the workforce, staff motivation and skills as well as staff numbers can tell us about the capacity of the service and may also act as an indicator of service quality (Appendix 11). Workforce information will be most useful in combination with estimates of underlying need in a population and across the system (i.e. reduced capacity in one part of the system may increase

burden on another part thereby altering the required workforce in each part of the system). In estimating service capacity, crude measures such as caseloads may not capture nuances across different services. Some services may require more time to be spent with families with complex or challenging needs, resulting in a lower overall caseload.

## 5. Signposting for wider or specialist support

Our included frameworks suggested that another important aspect of services to monitor was provision of information and signposting of families across the areas of finances, health and social support so families know what help is available in their area, how to access it, and what to expect. There was a lack of detail in the frameworks we included about how this might be measured or captured at a population level. One approach used in a recent study was to review the local SEND 'offer' information on the websites of 151 local authorities in England and they found that provision of information and signposting was highly variable.[90]

## 6. Processes, procedures, conditions and culture

A final dimension of service performance for monitoring could be processes, procedures, conditions and culture, which may include data governance, financial management, complaints procedures, multi-agency working, effective leadership, a continuous learning environment, and a culture that supports reflective learning and evidence-based learning (Appendix 11).

## Strengths and Limitations

The 47 indicators that we identified can be thought of as important to professional stakeholders and parents as many of them came from existing consensus work with over 1,000 parents and 300 children. However, the rapid nature of our study means that our list of indicators and guiding principles are not necessarily comprehensive. We have listed in Appendix 10 potential additional indicators for consideration (e.g. infant mental health and maternal mortality). Further stakeholder work is needed to make sure no indicators of high importance have been missed from our list.

Due to restrictions on research during the pre-election period (general election in 2024), we could not complete all our planned stakeholder work, which has limited how far we can further prioritise indicators or check what is missing.

Our rapid study is just a first step towards more effectively monitoring population health and wellbeing for babies and their families, e.g. through an outcomes framework. Before any indicator can be included in a framework, feasible metrics need to be agreed with expert stakeholders and then these metrics need to be quantitatively evaluated to make sure each one is valid, reliable, has sufficient statistical power (including across sub-groups of interest), meets technical specifications of data quality, and allows us to either adjust for underlying population differences when comparing between areas or to explicitly measure differences in the metric between population sub-groups.

### MAIN FINDINGS

We identified 47 candidate indicators, which were largely concentrated in the domains of Healthy and External Factors. Based on our criteria of interpretability, we identified a sub-set 36 candidate indicators which could be a priority for further investigation.

Many of the indicators we identified already feature in existing outcome frameworks, including the Public Health Outcomes Framework from the Department of Health and Social Care. Even where indicators did not feature in an existing framework, there tended to be some existing data that may be useful.

However, data were often not reported separately for adults/households with dependent children and/or by age of dependent child. Each existing piece of data would need to be investigated to test whether it constituted the best metric for an indicator to measure whether babies and young children were safe, happy, healthy, developing and growing up in health-promoting environments and then subject to a quantitative evaluation of validity, reliability, data properties and contribution to monitoring inequalities (Box 1).

Of the 36 prioritised indicators, there were six indicators that would require implementation of completely new data collection: Experiences of abuse and neglect including domestic abuse (Safe); Parent or carer/infant relationship and family relationships (Happy); Healthy growth, weight, and size (Healthy); Healthy eating/nutrition (Healthy); Child physical activity/sedentary behaviour (Healthy) and Parental quality of life (External Factors). Although some of these data (for example parent-infant relationship) could theoretically be collected during universal health appointments (e.g. in health visiting), there are questions about the impact of this on already stretched universal services.

We identified six guiding principles that could be used as the basis for conceptual work to identify the high-level outcomes within any future framework to monitor service performance for children <2y in England. For many of these principles, multiple data would need to be viewed in combination. For example, the key concept of equitable service reach requires data on underlying needs across populations and data on service activity across the system of public and third sector services. No existing framework recommends using any of the candidate indicators from our review on monitoring population health of children <2y e.g., infant death or breastfeeding. It would also be very challenging to interpret whether the service provision received by infants and families has any bearing on outcomes related to indicators such as infant death or breastfeeding. Although these indicators are potentially modifiable through intervention or service provision, we know that differences in social determinants explain rates of both infant death[58] and breastfeeding[91]. This makes it difficult to use these types of indicators as signals of service performance when viewed in isolation. If rates of infant death reduce, it may be due to improvements in the underlying health and wellbeing of women of childbearing age in the population rather than (or as well as) improvements in maternity or paediatric services.

## Implications

- Significant further work is needed to arrive at finished frameworks:
  - Part of this work would be to achieve clarity of purpose and examine any possible unintended harms of focusing on some outcomes rather than others.
  - Further consensus work could narrow the list of candidate indicators for monitoring population health for children <2y and also check we have not 'missed' any key indicators.
  - A shorter list of candidate indicators may be more feasible given the detailed evaluation work that will be required to assess each candidate indicator.
- The Public Health Outcomes Framework is already a rich resource, largely in the domains of Healthy and External Factors. 24 (66%) of the 36 priority indicators already featured in some form in this framework, many of which are specific to pregnant women, infants and preschool children. One possible approach would be to consider how to expand or maximise the utility of the Public Health Outcomes Framework for the target population (<2y).
  - A key part of this would be work to investigate whether the rates and trends were different enough between children <2y and children <5y (or older) to warrant additional reporting.
  - The regular review cycle built into the Public Health Outcomes Framework could be a good opportunity to consider adding new indicators for babies and young children and/or investigating how indicators could be viewed in combination to aid interpretation.
  - Concentrating efforts on a single framework may avoid siloed working of different policy teams, government departments or sectors that support children and families. With the change in government (2024), there may be opportunity for working across government departments who may be considering their own frameworks or measures relevant to the early years.
- Many indicators we identified were potentially relevant to all children >2y. We found that a focus on specific age groups in data collection and/or reporting for children usually excluded the youngest ages. However, there should be robust justification for limiting data collecting and/or reporting to a single age category during childhood, including when that age category is babies and children <2y.
- There is much potential to improve the relevancy of existing data for babies and children <2y, even if these data do not meet all the criteria for an indicator to be included in an outcomes framework. A data review and improvement exercise could be done as part of developing an outcomes framework or as a stand-alone exercise and may:
  - Consider protecting existing indicators as well as developing new ones (i.e. where there may be 'interim' data sources).
  - Start with all government funded surveys and official statistics, perhaps using concepts such as 'think babies, think parent, think household', to investigate where existing data may be disaggregated to be relevant to children <2y.
  - Test whether available measures are the best ones.
  - Keep in mind that new routine linkages may support development of indicators for an outcomes framework and also facilitate a step change in research for children and their families. For example:
    - To fully understand inequalities in exposure to air pollution, we would need linkage between the Patient Demographics Service, the Maternity Services Dataset and air pollution data. This type of analysis has been conducted in other countries.
    - Reporting household income across the full gradient for households with/out children (by age of child) would allow monitoring of inequalities and/or improvements across the whole spectrum of disadvantage. If household income data were made a routine part of pseudonymised administrative health data it would also affect a step change in the way researchers could consider inequalities in child health and wellbeing, including for babies and children <2y.
- There are also areas for completely new data collection (e.g. experiences of abuse and neglect, including domestic abuse).

## Bibliography

1. Department of Health and Social Care. The best start for life: a vision for the 1,001 critical days. <https://www.gov.uk/government/publications/the-best-start-for-life-a-vision-for-the-1001-critical-days> (accessed 25 September 2024).
2. Build an NHS fit for the future. The Labour Party. <https://labour.org.uk/change/build-an-nhs-fit-for-the-future> (accessed 17 December 2024).
3. Howarth E, Powell C, Woodman J, *et al.* Protocol for developing core outcome sets for evaluation of psychosocial interventions for children and families with experience or at risk of child maltreatment or domestic abuse. *BMJ Open*. 2021;11:e044431. doi: 10.1136/bmjopen-2020-044431
4. Center on the Developing Child. InBrief: The Science of Early Childhood Development. <https://developingchild.harvard.edu/resources/inbrief/inbrief-science-of-eecd> (accessed 17 December 2024).
5. Mansukoski L, Albert A, Vafai Y, *et al.* Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing. *International Journal of Environmental Research and Public Health*. 2022;19:7947. doi: 10.3390/ijerph19137947
6. Killeen SL, Callaghan SL, O'Reilly SL, *et al.* Pregnancy Nutrition Core Outcome Set (PRENCOS): A core outcome set development study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2023;130:1247–57. doi: 10.1111/1471-0528.17470
7. Bonin E-M, Matosevic T, Beecham J. Developing an early years Outcomes Framework using area-level routine data A Better Start Common Outcomes Framework A Better Start. 2016.
8. Flynn S, Lakshme Sundaresan S, Caffrey L. Putting Outcomes into Practice: The Implementation of a Framework of Outcome Measures within a Child and Family Service. *The British Journal of Social Work*. 2024;54:2378–95. doi: 10.1093/bjsw/bcae037
9. For Baby's Sake. Towards a common outcomes framework for all for children and families. <https://forbabyssake.org.uk/news/2022/08/04/towards-a-common-outcomes-framework-for-all-for-children-and-families> (accessed 25 September 2024).
10. Department of Health and Social Care. Fingertips: Public health profiles. <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework> (accessed 25 September 2024).
11. Geary RS, Knight HE, Carroll FE, *et al.* A step-wise approach to developing indicators to compare the performance of maternity units using hospital administrative data. *BJOG: An International Journal of Obstetrics and Gynaecology*. 2018;125:857–65. doi: 10.1111/1471-0528.15013
12. Klerings I, Robalino S, Booth A, *et al.* Rapid reviews methods series: Guidance on literature search. *BMJ Evidence-Based Medicine*. 2023;28:412–7. doi: 10.1136/bmjebm-2022-112079
13. Children's Commissioner. Outcomes framework Annex to A positive approach to parenting: Part 2 of the Independent Family. 2022. [https://forbabyssake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?\\_gl=1\\*1rnhpqc\\*\\_up\\*MQ.\\*\\_ga\\*NzYzMzc5NzI3LjE3MTcwNTg4MDA.\\*](https://forbabyssake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?_gl=1*1rnhpqc*_up*MQ.*_ga*NzYzMzc5NzI3LjE3MTcwNTg4MDA.*)
14. OECD. Members and partners. <https://www.oecd.org/en/about/members-partners.html> (accessed 25 September 2024)
15. Lamb C, Campion J. Infant and early childhood mental health: the case for action. 2023. <https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/College-report-CR238---Infant-and-early-childhood-mental-health.pdf> (accessed 25 September 2024).

## Bibliography

16. World Health Organization. Nurturing care for early childhood development. 2018. <https://iris.who.int/bitstream/handle/10665/272603/9789241514064-eng.pdf?sequence=1> (accessed 25 September 2024).
17. The Academy of Medical Sciences. Prioritising early childhood to promote the nation's health, wellbeing and prosperity. 2024. <https://acmedsci.ac.uk/file-download/16927511> (accessed 25 September 2024).
18. Vindrola-Padros C. *Doing rapid qualitative research*. First. SAGE Publications Ltd 2021.
19. Child Death Review Data Release: Year ending 31 March 2023. National Child Mortality Database. 2023. <https://www.ncmd.info/publications/child-death-data-2023> (accessed 28 September 2024).
20. Nath S, Hardelid P, Zylbersztejn A. Are infant mortality rates increasing in England? The effect of extreme prematurity and early neonatal deaths. *Journal of Public Health*. 2021;43:541–50. doi: 10.1093/pubmed/fdaa025
21. Rowe B, Cook C, Wootton R, et al. A&E: Studying parental decision making around non-urgent attendance among under 5s. 2015. [https://www.revealingreality.co.uk/wp-content/uploads/2017/03/Revealing\\_Reality\\_DH\\_non-urgent\\_attendance.pdf](https://www.revealingreality.co.uk/wp-content/uploads/2017/03/Revealing_Reality_DH_non-urgent_attendance.pdf) (accessed 28 September 2024).
22. Syed S, Ashwick R, Schlosser M, et al. Predictive value of indicators for identifying child maltreatment and intimate partner violence in coded electronic health records: a systematic review and meta-analysis. *Arch Dis Child*. 2021;106:44–53. doi: 10.1136/archdischild-2020-319027
23. Lee JJ, Gonzalez-Izquierdo A, Gilbert R. Risk of Maltreatment-Related Injury: A Cross-Sectional Study of Children under Five Years Old Admitted to Hospital with a Head or Neck Injury or Fracture. *PLoS ONE*. 2012;7:e46522. doi: 10.1371/journal.pone.0046522
24. Gonzalez-Izquierdo A, Cortina-Borja M, Woodman J, et al. Maltreatment or violence-related injury in children and adolescents admitted to the NHS: comparison of trends in England and Scotland between 2005 and 2011. *BMJ Open*. 2014;4. doi: 10.1136/bmjopen-2013
25. Clarke T. Estimating the prevalence of the 'toxic trio' of family issues for each local area in England. 2019. <https://assets.childrenscommissioner.gov.uk/wpuploads/2018/07/Vulnerability-Technical-Report-2-Estimating-the-prevalence-of-the-toxic-trio.pdf> (accessed 28 September 2024).
26. Mathews B, Pacella R, Dunne MP, et al. Improving measurement of child abuse and neglect: A systematic review and analysis of national prevalence studies. *PLoS ONE*. 2020;15. doi: 10.1371/journal.pone.0227884
27. Mathews B, MacMillan HL, Meinck F, et al. The ethics of child maltreatment surveys in relation to participant distress: Implications of social science evidence, ethical guidelines, and law. *Child Abuse and Neglect*. 2022;123. doi: 10.1016/j.chiabu.2021.105424
28. Sharrock S, Liddar A, Roberts E, et al. Feasibility of a survey on child abuse Qualitative research findings. 2022. <https://natcen.ac.uk/sites/default/files/2022-12/feasibility-of-a-survey-on-child-abuse.pdf> (accessed 28 September 2024)
29. Office for National Statistics. Exploring the feasibility of a survey measuring child abuse in the UK: June 2024. 2024. <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/exploringthefeasibilityofasurveymeasuringchildabuseintheuk/june2024> (accessed 28 September 2024).
30. Davies E, Obolenskaya P, Francis B, et al. Definition and Measurement of Violence in the Crime Survey for England and Wales: Implications for the Amount and Gendering of Violence. *The British Journal of Criminology*. 2024;azae050. doi: 10.1093/bjc/azae050

## Bibliography

31. Office for National Statistics. Crime in England and Wales: year ending March 2024. <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/crimeinenglandandwales/yearendingmarch2024#measuring-the-data> (accessed 25 September 2024).
32. Woodman J, Freemantle N, Allister J, *et al.* Variation in Recorded Child Maltreatment Concerns in UK Primary Care Records: A Cohort Study Using The Health Improvement Network (THIN) Database. *PLoS ONE*. 2012;7. doi: 10.1371/journal.pone.0049808
33. Webb C, Bywaters P, Scourfield J, *et al.* Untangling child welfare inequalities and the 'Inverse Intervention Law' in England. *Children and Youth Services Review*. 2020;111. doi: 10.1016/j.childyouth.2020.104849
34. Skinner GCM, Bywaters PWB, Kennedy E. A review of the relationship between poverty and child abuse and neglect: Insights from scoping reviews, systematic reviews and meta-analyses. *Child Abuse Review*. 2023;32. doi: 10.1002/car.2795
35. Bywaters P, Scourfield J, Jones C, *et al.* Child welfare inequalities in the four nations of the UK. *Journal of Social Work*. 2020;20:193–215. doi: 10.1177/1468017318793479
36. Bywaters P, Skinner G, Cooper A, *et al.* The Relationship Between Poverty and Child Abuse and Neglect: New Evidence. 2022.
37. Cadman T, Belsky J, Pasco Fearon RM. The Brief Attachment Scale (BAS-16): A short measure of infant attachment. *Child: Care, Health and Development*. 2018;44:766–75. doi: 10.1111/cch.12599
38. Wittkowski A, Vatter S, Muhinyi A, *et al.* Measuring bonding or attachment in the parent-infant-relationship: A systematic review of parent-report assessment measures, their psychometric properties and clinical utility. *Clinical Psychology Review*. 2020;82. doi: 10.1016/j.cpr.2020.101906
39. Hogg S, Moody J. Evaluating, assessing and observing mental health in infancy and early childhood. 2023. UNICEF. <https://www.unicef.org.uk/wp-content/uploads/2023/04/Part-7-Understanding-and-supporting-mental-health-in-infancy-and-early-childhood-A-toolkit-to-support-local-action-2.pdf> (accessed 28 September 2024).
40. Mooney KE, Bywater T, Dickerson J, *et al.* Protocol for the effectiveness evaluation of an antenatal, universally offered, and remotely delivered parenting programme 'Baby Steps' on maternal outcomes: a Born in Bradford's Better Start (BiBBS) study. *BMC Public Health*. 2023;23. doi: 10.1186/s12889-023-15111-1
41. Department of Health & Social Care. Health and social care statistical outputs consultation: response. 2024. <https://www.gov.uk/government/consultations/health-and-social-care-statistical-outputs/outcome/health-and-social-care-statistical-outputs-consultation-response> (accessed 19 December 2024).
42. Clery A, Bunting C, Liu M, *et al.* Can administrative data be used to research health visiting in England? A completeness assessment of the Community Services Dataset. *International Journal of Population Data Science Journal Website: www.ijpds.org*. 2024;9. doi: 10.23889/ijpds.v9i2.2385
43. Merritt R, Kendall S, Eida T, *et al.* Scaling up breastfeeding in England through the Becoming Breastfeeding Friendly initiative (BBF). *Maternal & Child Nutrition*. 2023;19. doi: 10.1111/mcn.13443
44. Harker R. Childhood Immunisation Statistics. 2024. House of Commons Library. <https://researchbriefings.files.parliament.uk/documents/CBP-8556/CBP-8556.pdf> (accessed 25 September 2024)

## Bibliography

45. Childhood Vaccination Coverage Statistics, England, 2022-23. NHS England Digital. <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-immunisation-statistics/england-2022-23> (accessed 25 September 2024).
46. Baird J, Fisher D, Lucas P, *et al.* Being big or growing fast: systematic review of size and growth in infancy and later obesity. *BMJ*. 2005;331:929. doi: 10.1136/bmj.38586.411273.E0
47. Born in Bradford Data Digest. Born in Bradford. [https://borninbradford.nhs.uk/wp-content/uploads/BiB\\_data\\_digest.html#child-growth](https://borninbradford.nhs.uk/wp-content/uploads/BiB_data_digest.html#child-growth) (accessed 28 September 2024)
48. Feeding young children aged 1 to 5 years. Scientific Advisory Committee on Nutrition. 2023. <https://assets.publishing.service.gov.uk/media/662a4a4d690acb1c0ba7e616/SACN-Feeding-young-children-aged-1-to-5-full-report-revised.pdf> (accessed 28 September 2024).
49. Poitras VJ, Gray CE, Janssen X, *et al.* Systematic review of the relationships between sedentary behaviour and health indicators in the early years (0–4 years). *BMC Public Health*. 2017;17:868. doi: 10.1186/s12889-017-4849-8
50. Public Health Ontario. Sedentary Behaviour Indicators Using Data from the Canadian Health Survey on Children and Youth. 2024. <https://www.publichealthontario.ca/-/media/Documents/C/24/chscy-sedentary-behaviour-data>.
51. Wardlaw T, Blanc A, Zupan J, *et al.* Low birthweight. World Health Organisation and UNICEF. 2004. <https://iris.who.int/bitstream/handle/10665/43184/9280638327.pdf?sequence=1> (accessed 21 September 2024).
52. Births in England and Wales: linked births - Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsinenglandandwaleslinkedbirths> (accessed 19 December 2024).
53. Libuy N, Gilbert R, Mc Grath-Lone L, *et al.* Gestational age at birth, chronic conditions and school outcomes: a population-based data linkage study of children born in England. *International Journal of Epidemiology*. 2023;52:132–43. doi: 10.1093/ije/dyac105
54. Boyle EM, Field DJ, Wolke D, *et al.* Effects of gestational age at birth on health outcomes at 3 and 5 years of age: population based cohort study. *BMJ*. 2012;344. doi: 10.1136/bmj.e896
55. Fuchs F, Monet B, Ducruet T, *et al.* Effect of maternal age on the risk of preterm birth: A large cohort study. *PLoS One*. 2018;13:e0191002. doi: 10.1371/journal.pone.0191002
56. Department of Health and Social Care. Child and Maternal Health. <https://fingertips.phe.org.uk/profile/child-health-profiles/data#page/3/gid/1938133228/pat/6/par/E12000001/ati/402/are/E06000047/iid/92196/age/2/sex/4/cat/-1/ctp/-1/yr/3/cid/4/tbm/1> (accessed 25 September 2024).
57. Child and infant mortality in England and Wales - Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/childhoodinfantandperinatalmortalityinenglandandwales/2022> (accessed 25 September 2024).
58. Zylbersztejn A, Gilbert R, Hjern A, *et al.* Child mortality in England compared with Sweden: a birth cohort study. *The Lancet*. 2018;391:2008–18. doi: 10.1016/S0140-6736(18)30670-6
59. Winter mortality in England and Wales - Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2021to2022provisionaland2020to2021final> (accessed 25 September 2024).

## Bibliography

60. Stone R. Pregnant women and substance use: fear, stigma, and barriers to care. *Health & Justice*. 2015;3:2. doi: 10.1186/s40352-015-0015-5
61. Public Health England. Characteristics of women who stop smoking in pregnancy: Experimental analysis of smoking data from the Maternity Services Data Set (MSDS), April 2018 to March 2019. [https://assets.publishing.service.gov.uk/media/614c3ee2e90e077a2ba1f350/Analysis\\_characteristics\\_of\\_women\\_who\\_stop\\_smoking\\_in\\_pregnancy.pdf](https://assets.publishing.service.gov.uk/media/614c3ee2e90e077a2ba1f350/Analysis_characteristics_of_women_who_stop_smoking_in_pregnancy.pdf) (accessed 25 September 2024).
62. Syed S, Gonzalez-Izquierdo A, Allister J, *et al*. Identifying adverse childhood experiences with electronic health records of linked mothers and children in England: a multistage development and validation study. *The Lancet Digital Health*. 2022;4:e482–96. doi: 10.1016/S2589-7500(22)00061-9
63. Office for Health Improvement & Disparities. Commissioning health visitors and school nurses for public health services for children aged 0 to 19. 2023. <https://www.gov.uk/government/publications/healthy-child-programme-0-to-19-health-visitor-and-school-nurse-commissioning-commissioning-health-visitors-and-school-nurses-for-public-health-services-for-children-aged-0-to-19> (accessed 25 September 2024).
64. Jung J, Cattan S, Powell C, *et al*. Early child development in England: cross-sectional analysis of ASQ®-3 records from the 2-2½-year universal health visiting review using national administrative data (Community Service Dataset, CSDS). *MedRxiv*. 2024.09.28.24314205.
65. Lysons J, Pineda RM, Alarcon G, *et al*. Measuring child development at the 2-2½ year health and development review. 2024. Children and Families Policy Research Unit. [https://www.ucl.ac.uk/children-policy-research/sites/children\\_policy\\_research/files/asq\\_final\\_report\\_fin.pdf](https://www.ucl.ac.uk/children-policy-research/sites/children_policy_research/files/asq_final_report_fin.pdf) (accessed 25 September 2024).
66. Munro A, Allen J, Marmot M. Evidence review: Housing and health inequalities in London. Institute of Health Inequality. 2022. <https://www.instituteofhealthequity.org/resources-reports/evidence-review-housing-and-health-inequalities-in-london/full-report.pdf> (accessed 25 September 2024).
67. Department for Environment Food & Rural Affairs. Data Archive. <https://uk-air.defra.gov.uk/data> (accessed 20 September 2024).
68. Nguyen GT, Gauvreau C, Mansuri N, *et al*. Implementation factors of non-communicable disease policies and programmes for children and youth in low-income and middle-income countries: a systematic review. *BMJ paediatrics open*. 2024;8. doi: 10.1136/bmjpo-2024-002556
69. Manu A, Ewerling F, Barros AJ, *et al*. Association between availability of children’s book and the literacy-numeracy skills of children aged 36 to 59 months: secondary analysis of the UNICEF Multiple-Indicator Cluster Surveys covering 35 countries. *J Glob Health*. 9. doi: 10.7189/jogh.09.010403
70. Department for Education. Children of the 2020s: first survey of families at age 9 months. 2023. <https://www.gov.uk/government/publications/children-of-the-2020s-first-survey-of-families-at-age-9-months> (accessed 28 September 2024).
71. Fierloos IN, Windhorst DA, Fang Y, *et al*. The association between perceived social support and parenting self-efficacy among parents of children aged 0–8 years. *BMC Public Health*. 2023;23:1888. doi: 10.1186/s12889-023-16710-8
72. Yan Z, Yu S, Lin W. Parents’ perceived social support and children’s mental health: the chain mediating role of parental marital quality and parent–child relationships. *Curr Psychol*. 2024;43:4198–210. doi: 10.1007/s12144-023-04625-x

## Bibliography

73. Marmot M. Fair Society, Healthy Lives. 2010. <https://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-full-report-pdf.pdf> (accessed 12 February 2025).
74. Skarda I, Cookson R, Gilbert R. Does household income predict health and educational outcomes in childhood better than neighbourhood deprivation? *MedRxiv*. Published Online First: 2024. doi: 10.1101/2024.07.25.24310986
75. Timpson K, McCartney G, Walsh D, *et al*. What is missing from how we measure and understand the experience of poverty and deprivation in population health analyses? *European Journal of Public Health*. 2023;33:974–80. doi: 10.1093/eurpub/ckad174
76. Office for National Statistics. Income estimates for small areas, England and Wales. 2023. <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/smallareaincomeestimatesformiddlelayersuperoutputareasenglandandwales> (accessed 28 September 2024).
77. Office for National Statistics. Income estimates for small areas, England and Wales: financial year ending 2020. 2023. <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/smallareamodelbasedincomeestimates/financialyearending2020> (accessed 28 September 2024).
78. Indicator Definitions and Supporting Information. Fingertips | Public health profiles. <https://fingertips.phe.org.uk/indicator-list/view/IMYftHSFAk#page/6/gid/1/pat/159/par/K02000001/ati/15/are/E92000001/iid/92259/age/1/sex/2/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1> (accessed 28 September 2024).
79. Moore LL, Lombardi DA, White MJ, *et al*. Influence of parents' physical activity levels on activity levels of young children. *The Journal of Pediatrics*. 1991;118:215–9. doi: 10.1016/S0022-3476(05)80485-8
80. Zecevic CA, Tremblay L, Lovsin T, *et al*. Parental Influence on Young Children's Physical Activity. *Int J Pediatr*. 2010;2010:468526. doi: 10.1155/2010/468526
81. Pickard A, Farrow C, Haycraft E, *et al*. Associations between parent and child latent eating profiles and the role of parental feeding practices. *Appetite*. 2024;201:107589. doi: 10.1016/j.appet.2024.107589
82. Syed S, Gilbert R, Wolpert M. Parental Alcohol Misuse and the Impact on Children: A Rapid Evidence Review of Service Presentations and Interventions. Children's Policy Research Unit. 2018. <https://www.ucl.ac.uk/children-policy-research/sites/children-policy-research/files/parental-alcohol-misuse-and-impact-on-children.pdf> (accessed 21 September 2024).
83. Syed S, Gilbert R, Feder G, *et al*. Family adversity and health characteristics associated with intimate partner violence in children and parents presenting to health care: a population-based birth cohort study in England. *The Lancet Public Health*. 2023;8:e520–34. doi: 10.1016/S2468-2667(23)00119-6
84. Tzouvara V, Kupdere P, Wilson K, *et al*. Adverse childhood experiences, mental health, and social functioning: A scoping review of the literature. *Child Abuse & Neglect*. 2023;139:106092. doi: 10.1016/j.chiabu.2023.106092
85. Pogarsky G, Thornberry TP, Lizotte AJ. Developmental Outcomes for Children of Young Mothers. *Journal of Marriage and Family*. 2006;68:332–44.

## Bibliography

86. Bunting C, Clery A, McGrath-Lone L, *et al.* How does health visiting in the first year of life vary by family characteristics? A longitudinal analysis of administrative data. *Journal of Public Health*. 2024;fdae259. doi: 10.1093/pubmed/fdae259
87. ADR England and Foundations. 2025. Full scoping review: Use of administrative data to understand children's involvement with children's statutory social care services. [https://www.adruk.org/fileadmin/uploads/adruk/Documents/Community\\_catalysts/Final\\_FullScopingReviewADREngland\\_Catalyst.pdf](https://www.adruk.org/fileadmin/uploads/adruk/Documents/Community_catalysts/Final_FullScopingReviewADREngland_Catalyst.pdf) (accessed 21 March 2025)
88. NHS Outcomes Framework Indicators, April 2024 release. NHS England Digital. <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/april-2024> (accessed 28 September 2024).
89. King E, Gadsby E, Bell M, *et al.* Health visiting in the UK in light of the COVID-19 pandemic experience: (RReHOPE) findings from a realist review. *Health Soc Care Deliv Res*. 2024;1–50. doi: 10.3310/MYRT5921
90. Matthews J, Black-Hawkins K, Basu A, *et al.* To what extent do England's local offer websites adhere to the statutory guidance as set out in the special educational needs and disabilities code of practice? *British Educational Research Journal*. 2024;50:1724–40. doi: 10.1002/berj.3996
91. Peregrino AB, Watt RG, Heilmann A, *et al.* Breastfeeding practices in the United Kingdom: Is the neighbourhood context important? *Matern Child Nutr*. 2018;14:e12626. doi: 10.1111/mcn.12626

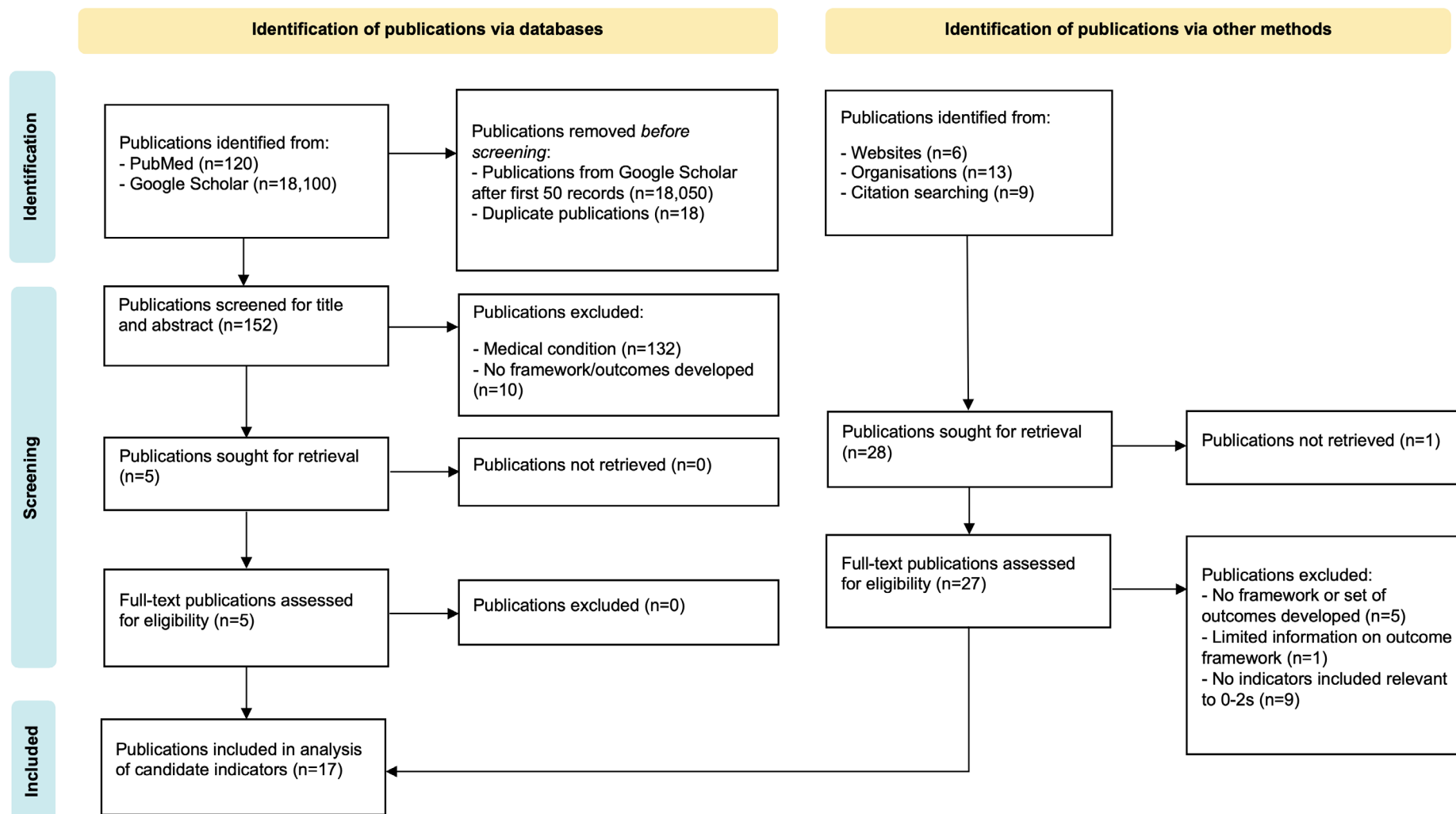
# Appendices

## Appendix 1

### Search strategies

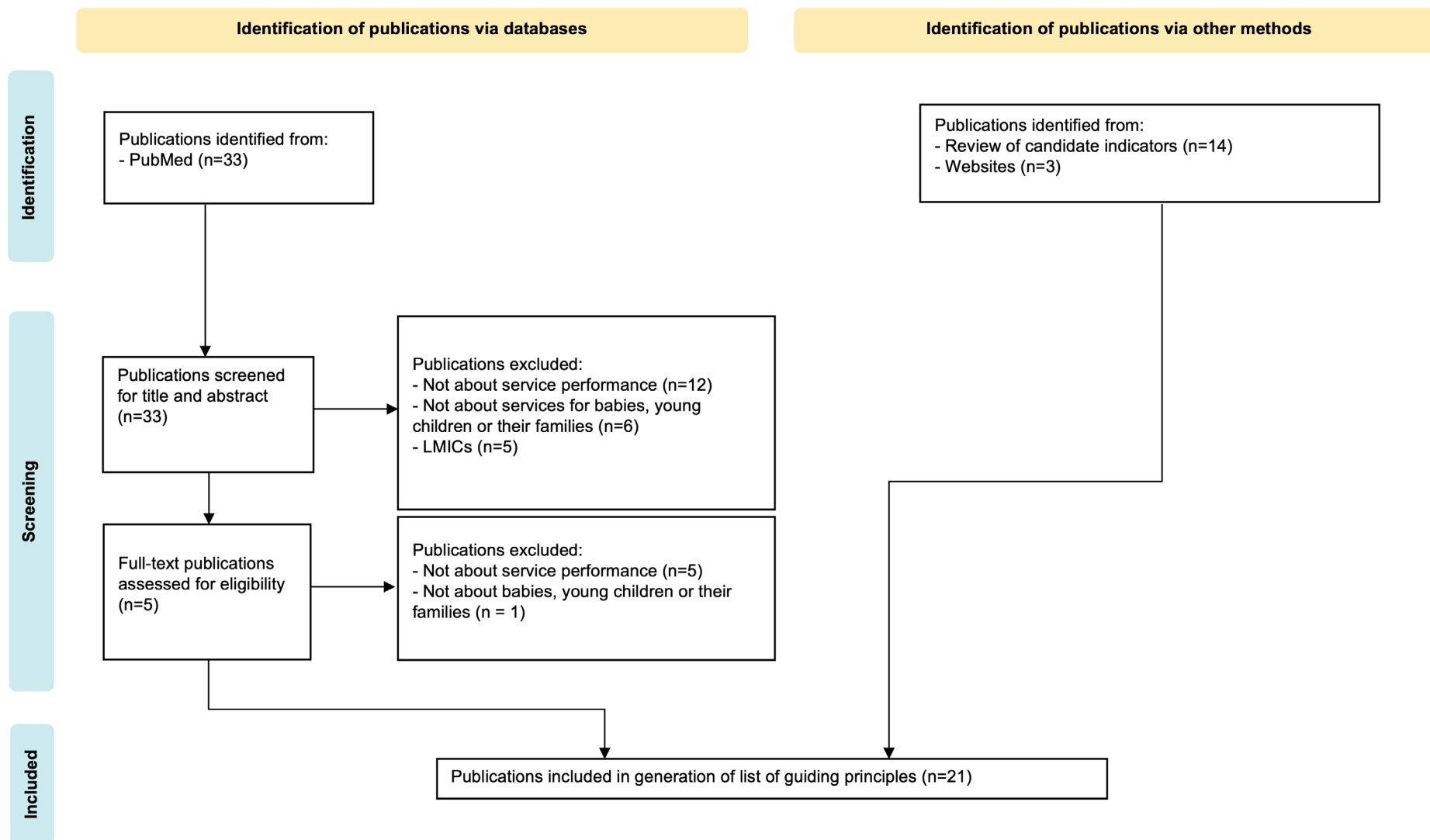
Database	URL	Date of search	Search strategy	Records retrieved (n)
<b>A. Search for frameworks to monitor population health</b>				
(Outcome framework) AND (Child and/or parent) AND (Early childhood)				
PubMed	<a href="https://pubmed.ncbi.nlm.nih.gov/advanced/">https://pubmed.ncbi.nlm.nih.gov/advanced/</a>	09/05/2024	(("core outcome set*" [Title/Abstract] OR "core outcomes set*" [Title/Abstract] OR "outcome framework*" [Title/Abstract] OR "outcomes framework*" [Title/Abstract]) AND (y_10[Filter])) AND (("early years" [Title/Abstract] OR "early life" [Title/Abstract] OR "early child*" [Title/Abstract] OR "neonatal" [Title/Abstract]) AND (y_10[Filter]))	120
Google Scholar	<a href="https://scholar.google.co.uk/">https://scholar.google.co.uk/</a>	10/05/2024	("core outcomes set*" OR "core outcome set*" OR "outcome framework*" OR "outcomes framework*") (child OR parent OR family OR "early life" OR "early child*" OR "early years" OR neonatal)	18100
PubMed	<a href="https://pubmed.ncbi.nlm.nih.gov/advanced/">https://pubmed.ncbi.nlm.nih.gov/advanced/</a>			
<b>B. Search for frameworks to monitor service performance</b>				
(Framework OR service) AND (child OR parent OR family OR early life)				
PubMed	<a href="https://pubmed.ncbi.nlm.nih.gov/advanced/">https://pubmed.ncbi.nlm.nih.gov/advanced/</a>	31.07.24	systematic review" [Title/Abstract] AND "framework" [Title/Abstract] AND ("health service" [Title/Abstract] OR "social service" [Title/Abstract] OR "childcare service" [Title/Abstract] OR "family support service" [Title/Abstract] OR "hospital service" [Title/Abstract] OR "community-based service" [Title/Abstract] OR "maternity service" [Title/Abstract] OR "primary care services" [Title/Abstract] OR "integrated service" [Title/Abstract] OR "service for families" [Title/Abstract]) AND ("perform*" [Title/Abstract] OR "improv*" [Title/Abstract] OR "evaluat*" [Title/Abstract] OR "monitor*" [Title/Abstract] OR "quality" [Title/Abstract]) AND ("child*" [Title/Abstract] OR "parent*" [Title/Abstract] OR "famil*" [Title/Abstract] OR "pregnan*" [Title/Abstract] OR "neonatal" [Title/Abstract] OR "early years" [Title/Abstract] OR "early life" [Title/Abstract])	33

## A. Flow diagram of studies through the review on candidate indicators for monitoring population health



Adapted from Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71.

## B. Flow diagram of studies through the review on guiding principles to monitor service performance



## Indicators in excluded publications

Indicators identified in literature review but excluded from Table 4				
Indicator	Framework	Not C or SR*	N/A to <3**	Not modifiable***
Child and/parent Adverse Childhood Experiences (ACEs)	Infant and early childhood mental health: the case for action, 2023	✓		
Parental abandonment (separation/divorce/prison)	Infant and early childhood mental health: the case for action, 2023	✓		
Family functioning	Infant and early childhood mental health: the case for action, 2023	✓		
Parent-child interactions including parental sensitivity to child.  Note: this indicator can be considered part of the parent-child relationship, which is included in Table 4	Nurturing care for early childhood development, 2018	✓		
Child mental health/mental well-being  Definitions include: Child happiness; child stress and anxiety; proportion of children with mental health difficulties; children's abilities to be resourceful and make a productive contribution to the local community	<ol style="list-style-type: none"> <li>1. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing, 2022</li> <li>2. South Australia's Outcomes Framework for Children and Young People, 2023</li> <li>3. Public Health England and Department of Health and Social Care, 2019</li> <li>4. Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023</li> <li>5. Children's Social Care National Framework, DfE, 2023</li> <li>6. National Supporting Families Outcome Framework, Ministry of Housing, Communities and Local Government, 2022</li> <li>7. Government of Ireland, 2023</li> </ol>		✓	
Cognitive stimulation (e.g. interacting with parents)	Nurturing care for early childhood development, 2018	✓		
Child spacing	Nurturing care for early childhood development, 2018	✓		
Social support / social isolation / loneliness	Nurturing care for early childhood development, 2018	✓		
Dental health  Definitions include: Existence and severity of caries; use of dental general anaesthetics to treat dental caries and tooth decay; tooth decay; dental hygiene	<ol style="list-style-type: none"> <li>1. Developing an early years Outcomes Framework using area-level routine data, 2016.</li> <li>2. South Australia's Outcomes Framework for Children and Young People, 2023</li> <li>3. National Supporting Families Outcome Framework, Ministry of Housing, Communities and Local Government, 2022</li> <li>4. Born in Bradford, 2023</li> </ol>		✓	
Pain  Definition includes: Overarching concepts including abdominal pain, prevalence of pain, intensity, frequency, otalgia (ear pain). This is not appropriate as a self-reported measure in the 0-2 population	Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review, 2022		✓	

Physical function & disability Definition includes: Overarching concepts of childhood disability, activity limitation/physical function, cerebral palsy, motor impairment, fine motor impairment, gross motor functions	Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review, 2022			✓
Birth trauma	Infant and early childhood mental health: the case for action, 2023	✓		
Parental immunisation	Nurturing care for early childhood development, 2018	✓		
Parental nutrition	1. Prioritising early childhood to promote the nation's health, wellbeing and prosperity, 2024 2. Infant and early childhood mental health: the case for action, 2023 3. Nurturing care for early childhood development, 2018	✓		
Maternity care services and Equity in maternity care for BAME women	Infant and early childhood mental health: the case for action, 2023.	✓		
Feel safe in local area Note: Community violence/crime is included in Table 4	South Australia's Outcomes Framework for Children and Young People, 2023		✓	
Covid-19 pandemic	Infant and early childhood mental health: the case for action, 2023.	✓		
Environmental toxins	Nurturing care for early childhood development, 2018	✓		
Folic acid intake	Prioritising early childhood to promote the nation's health, wellbeing and prosperity, 2024	✓		
Water fluoridation	Prioritising early childhood to promote the nation's health, wellbeing and prosperity, 2024	✓		
Hygiene	Nurturing care for early childhood development, 2018	✓		
Discrimination including ethnicity and gender	Nurturing care for early childhood development, 2018	✓		
Ethnicity	Born in Bradford, 2023			✓

### Indicators not identified in literature review but which may be important

#### Child health and wellbeing indicators

Indicator	Relevance
(Gross and fine) motor skills	Several experts and the research team noted that indicators specifically capturing just gross and fine motor skills were not identified in our study but important for child development at this age. It is important to note though that motor skills were captured in definitions of the 'Overall development' indicator identified by and included in this study.
Intergenerational trauma	One expert stated that the influence of generational trauma, previous parental trauma and parental ACEs are key factors influencing the health and wellbeing of 0- to 2-year-olds via a parent's ability to attune to a child's emotions, parent-child attachment and a parent's ability regulate their own emotions. Quality of family life, parenting capacity and the parent-child relationship can mediate the transmission of trauma from parent to child. <sup>14</sup> These are included in Table 4.

<sup>14</sup> Reese EM, Barlow MJ, Dillon M, Villalon S, Barnes MD, Crandall A. Intergenerational Transmission of Trauma: The Mediating Effects of Family Health. *Int J Environ Res Public Health*. 2022 May 13;19(10):5944. doi: 10.3390/ijerph19105944. PMID: 35627478; PMCID: PMC9141097.

Emotional safety	One expert stated that emotional safety is an important aspect of safety for a child aged 0 to 2y. The literature review predominantly identified indicators around physical safety.
Maternal morbidity/mortality	DHSC officials noted our literature review did not identify maternal morbidity/mortality, despite being important to child development. One expert also stated that maternal mortality is extremely important to child health, wellbeing and development and should be included in this framework.
Domestic abuse during pregnancy	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around abuse during pregnancy, despite being important to child development. One expert also stated that domestic abuse during pregnancy is extremely important to child health and wellbeing and should be included in this framework.
Formula feeding including responsive feeding, safe preparation, appropriate formula milks at the right ages	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around formula feeding, despite being important to child development.
Food types introduced when weaning	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around food types introduced during weaning, despite being important to child development.
Growth trajectory	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around growth trajectories from birth to age 3y, despite being important to other aspects of child development.
Rates of polio and measles cases	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around rates of polio and measles cases and immunisations for polio and measles, despite rising rates of cases of both in England.
Parental disability	Some experts stated that parental disability is distinct from parental health, as someone may have a disability but be in good health. Parental disability may affect how they access services for their health, income level and stress within the household.
Multivitamin (and particularly vitamin D) uptake	One expert stated that access to and take up of multivitamin and vitamin D supplements, supplied universally by health visitors, are important for overall child health.
Parental mood/mental health/wellbeing <i>during</i> pregnancy	One expert stated that this is important for overall child health and development prenatally and should be included as an indicator.
Discrimination based on parent sexual and gender identity and same-sex parenthood	One expert noted that, as with racial discrimination, parents can be discriminated against based on their sexual and gender identity and this could, in turn, influence their child's health and wellbeing. <sup>15,16</sup>
<b>Service performance indicators</b>	
<b>Indicator</b>	<b>Relevance</b>
Access to parental leave and pay	One expert stated that access to parental pay, as well as leave, is an important indicator to measure. Statutory maternity leave is currently 52-weeks whereas statutory maternity pay is 39-weeks. <sup>17</sup>
Support and opportunities for parents to engage in play	Two experts stated that for the 0-2 age range, parental involvement in play is important. This expert stated that many parents do not feel comfortable engaging in play and might benefit from local Stay and Play sessions.

<sup>15</sup> National Academies of Science, Engineering, and Medicine. Understanding the well-being of LGBTQI+ populations. Washington D.C.: The National Academies Press; 2020. <https://doi.org/10.17226/25877>

<sup>16</sup> Mazrekaj, D., Fischer, M. M., & Bos, H. M. Behavioral outcomes of children with same-sex parents in the Netherlands. *International journal of environmental research and public health*. 2022;19(10), 5922.

<sup>17</sup> UK Government. Maternity pay and leave. <https://www.gov.uk/maternity-pay-leave> (accessed 12 September 2024)

\*Included in paper without using consensus building or systematic review methods

\*\* Indicator is not appropriate in measuring health and wellbeing outcomes of children aged 0-2 years

\*\*\* Indicator cannot be modified by health and/or social care intervention

## Appendix 4

### Data extraction tool

Title	
Author	
Publication year	
Country	
Age range of interest	
Type of evidence	
Background of study	
Research aim/questions	
Methods	
Outcome framework overview	
Outcome domain "Safe"	Indicators
	Definition of each indicator (if provided)
	Measures for each indicator (if provided)
Outcome domain "Happy"	Indicators
	Definition of each indicator (if provided)
	Measures for each indicator (if provided)
Outcome domain "Healthy"	Indicators
	Definition of each indicator (if provided)
	Measures for each indicator (if provided)
Outcome domain "Developing"	Indicators
	Definition of each indicator (if provided)
	Measures for each indicator (if provided)
Outcome domain "External factors"	Indicators
	Definition of each indicator (if provided)
	Measures for each indicator (if provided)
Reviewer notes (e.g., study limits)	

## Appendix 5

### RAP Sheet

Rapid Assessment Procedures sheet used to guide key informant interviews.

Transcript Summary	
Prepared by:	Date:
Participant ID:	
Participant role:	
	Summary
Domain (s) discussed by key informant	
Indicators discussed	
Data availability of each indicator discussed	
Data Interpretability of each indicator discussed	
Key indicators to measure	
Other comments	

Table of publication characteristics

Table of characteristics for 26 publications included in the review of candidate indicators.

Author, year	Age range of interest	Country	Methods	Consensus building*	Systematic review**	Data item review***	N. stakeholders consulted				
							Parents	Children	Professionals	NS****	NR*****
<b>Papers extracted for population health and well-being indicators</b>											
<b>+ Papers also extracted for service performance indicators</b>											
Government of South Australia, 2023 <sup>18,19+</sup>	0-18	Australia	Government framework, developed in consultation with multiple stakeholders	✓		✓					✓
Ministry of Housing, Communities and Local Government, 2022 <sup>20+</sup>	0-18	England	Government framework, co-designed with local authorities and stakeholders inside and outside of government			✓					✓
Musgrove et al., 2022 <sup>21+</sup>	Lifespan	Multiple	Systematic review of 46 studies for core outcome mapping		✓						
Public Health England and Department of Health and Social Care, 2023 <sup>22+</sup>	Lifespan	England	Government framework consultation to review existing indicators		✓	✓			288		

<sup>18</sup> Government of South Australia. South Australia's Outcomes Framework for Children and Young People. 2023. <https://childrensa.sa.gov.au/wp-content/uploads/2024/02/Outcomes-Framework-2023-FINAL-2023-06-30.pdf> (accessed 21 September 2024).

<sup>19</sup> Government of South Australia. South Australia's Outcomes Framework for Children and Young People: Data and Technical Report. 2023. <https://childrensa.sa.gov.au/wp-content/uploads/2024/05/Outcomes-Framework-Data-Tech-Pub-Ed-5-2024-05-15.pdf> (accessed 21 September 2024).

<sup>20</sup> Ministry of Housing, Communities and Local Government. Chapter 3: The National Supporting Families Outcome Framework. 2022. <https://www.gov.uk/government/publications/supporting-families-programme-guidance-2022-to-2025/chapter-3-the-national-supporting-families-outcome-framework> (accessed 21 September 2024).

<sup>21</sup> Musgrove, E., Gasparini, L., McBain, K., Clifford, S. A., Carter, S. A., Teede, H., & Wake, M. (2022). Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review. *Pediatric Research*, 92(4), 936-945.

<sup>22</sup> Public Health England and Department of Health and Social Care. Public Health Outcomes Framework 2019/20: a consultation. 2023. <https://www.gov.uk/government/consultations/public-health-outcomes-framework-proposed-changes-2019-to-2020> (accessed 21 September 2024).

Born in Bradford, 2023 <sup>23+</sup>	0-19	England	Co-produced by a task and finish group joined by partners from key services across Bradford		✓	✓					✓
Mansukoski et al., 2022 <sup>24+</sup>	Early years/ early life (not specified)	UK	Modified Delphi study consisting of two rounds of a consensus survey administered to panel of experts and stakeholders, followed by a face-to-face public consultation with community members using 'dot voting'	✓						163+	
Children's Commissioner, 2022 <sup>25+</sup>	0-18	UK	Workshop with professionals and analysis of children's responses to The Big Ask survey by Children's Commissioner ( <a href="https://www.childrenscommissioner.gov.uk/the-big-answer">https://www.childrenscommissioner.gov.uk/the-big-answer</a> )	✓			160+ children and families	50+	2000+		
Powell et al, 2021 <sup>26+</sup>	0-18 (up to age of 25 for child in care or with additional needs)	Multiple	Developed by reviewing different types of evidence, consulting stakeholders, interviewing survivors, and reviewing existing frameworks and taxonomies	✓							✓

<sup>23</sup> Born in Bradford. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework. 2023. [https://borninbradford.nhs.uk/wp-content/uploads/Changing-the-way-we-look-at-data\\_V5.pdf](https://borninbradford.nhs.uk/wp-content/uploads/Changing-the-way-we-look-at-data_V5.pdf) (accessed 21 September 2024).

<sup>24</sup> Mansukoski L, Albert A, Vafai Y, et al. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing. International Journal of Environmental Research and Public Health. 2022;19:7947. doi: 10.3390/ijerph19137947

<sup>25</sup> Children's Commissioner. Outcomes framework Annex to A positive approach to parenting: Part 2 of the Independent Family. 2022. [https://forbabyssake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?\\_gl=1\\*1rnhpqc\\*\\_up\\*MQ..\\*\\_ga\\*NzYzMzc5NzI3LjE3MTcwNTg4MDA.\\*\\_ga\\_2SNC7SWXW4\\*MTcxNzA1ODc5Ny4xLjAuMTcxNzA1ODc5Ny4wLjAuMA](https://forbabyssake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?_gl=1*1rnhpqc*_up*MQ..*_ga*NzYzMzc5NzI3LjE3MTcwNTg4MDA.*_ga_2SNC7SWXW4*MTcxNzA1ODc5Ny4xLjAuMTcxNzA1ODc5Ny4wLjAuMA) (accessed 21 September 2024).

<sup>26</sup> Powell, C., Howarth, E., Feder, G., Gilbert, R. Outcomes taxonomy for child and family-focused interventions for domestic violence & abuse, and child maltreatment. UCL NIHR Policy Research Unit Children and Families. 2021. <https://mfr.de-1.osf.io/render?url=https://osf.io/9htz4/?direct%26mode=render%26action=download%26mode=render>. (accessed 21 September 2024).

Bonin et al., 2016 <sup>27+</sup>	0-4	England	Consultation with the five A Better Start sites and a wide range of experts in the field of child development, underpinned by a review of the evidence base and driven by availability of routinely collected data <sup>1</sup>	✓		✓					✓
Ecorys UK, Clarissa White Research Starks Consulting for Department for Education, 2023 <sup>28+</sup>	0-25	England	Mixed methods evaluation comprising assessment of implementation and processes, outcomes and impacts, as well as economic benefits				75		694		
Killeen et al., 2023 <sup>29+</sup>	Pregnancy	Multiple	Systematic review of 427 articles, interviews, and modified two-round Delphi survey	✓	✓		54		63		
National Children's Bureau, 2018 <sup>30</sup>	0-5	Jersey	Produced on behalf of the government with input from a Programme Steering Group			✓					✓
Government of Ireland, 2014 <sup>31</sup>	0-18	Ireland	Government framework, methods not stated			✓					

<sup>27</sup> Bonin, Matosevic & Beecham. Developing an early years Outcomes Framework using area-level routine data - A Better Start Common Outcomes Framework. 2016. <https://www.tnlcommunityfund.org.uk/media/insights/documents/COF-External-Report-2017-v3-1.pdf?mtime=20211126121811&focal=none> (accessed 21 September 2024).

<sup>28</sup> Ecorys UK, Clarissa White Research Starks Consulting for Department for Education. Family hubs evaluation innovation fund: final research report. 2023. <https://www.gov.uk/government/publications/evaluation-of-family-hubs> (accessed 21 September 2024).

<sup>29</sup> Killeen, S. L., Callaghan, S. L., O'Reilly, S. L., & McAuliffe, F. M. Pregnancy Nutrition Core Outcome Set (PRENCOS): A core outcome set development study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2023;130(10), 1247-1257.

<sup>30</sup> National Children's Bureau. Framework for Early Childhood in Jersey Final Report: Produced as part of the Early Childhood Development Programme. 2018. <https://www.ncb.org.uk/sites/default/files/uploads/attachments/Outcomes%20Framework%20for%20Early%20Childhood%20in%20Jersey%20FINAL%20VERSION.PDF> (accessed 21 September 2024).

<sup>31</sup> Government of Ireland. Better Outcomes, Brighter Futures: The National Policy Framework for Children and Young People 2014-2020. 2014. <https://www.cypsc.ie/about-us/five-national-outcomes-.444.html> (accessed 21 September 2024).

Duffy et al., 2017 <sup>32</sup>	Pregnancy to newborn	Multiple	Systematic review of 77 papers including 4 published core outcome sets		✓							
Roberts, Donkin & Pillas, 2013 <sup>33</sup>	0-5	England	A review of academic literature, field visits to children's centres including workshops and interviews, and input from an expert panel	✓		✓						✓
Horne et al., 2024 <sup>34</sup>	0-5	Scotland	Logic model produced with and refined by stakeholders, alongside analysis of administrative data	✓								✓
Department for Education, 2023 <sup>35+</sup>	0-18	England	Not stated									✓
NHS England, 2024 <sup>36</sup>	Lifespan	England	A set of indicators developed by the Department of Health and Social Care. These indicators are updates of the 5 not believed to be changed because of consultations from December 2023 to March 2024			✓						
<b>Papers extracted for service performance indicators only</b>												

<sup>32</sup> Duffy, J. M., Rolph, R., Gale, C., Hirsch, M., Khan, K. S., Ziebland, S., ... & Williamson, P. Core outcome sets in women's and newborn health: a systematic review. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2017;124(10), 1481-1489

<sup>33</sup> Roberts, J., Donkin, A., & Pillas, D. Measuring what matters: A guide for children's centres. London: UCL Institute of Health Equity. 2013. <https://www.instituteofhealthequity.org/resources-reports/measuring-what-matters-a-guide-for-childrens-centres/measuring-what-matters.pdf> (accessed 21 September 2024).

<sup>34</sup> Horne, M., Marryat, L., Corby, D. H., Doi, L., Astbury, R., Jepson, R., ... & Wood, R. Development of an outcome indicator framework for a universal health visiting programme using routinely collected data. *BMC health services research*. 2024;24(1), 728

<sup>35</sup> Department for Education. Children's Social Care National Framework. 2023. [https://assets.publishing.service.gov.uk/media/657c538495bf650010719097/Children\\_s\\_Social\\_Care\\_National\\_Framework\\_December\\_2023.pdf](https://assets.publishing.service.gov.uk/media/657c538495bf650010719097/Children_s_Social_Care_National_Framework_December_2023.pdf) (accessed 21 September 2024).

<sup>36</sup> NHS England. NHS Outcomes Framework Indicators, April 2024 release. 2024. <https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/april-2024#highlights> (accessed 21 September 2024).

Seward et al., 2017 <sup>37</sup>	Educational centres for children aged 0-5 years	Multiple	Systematic review synthesising 12 studies using a Theoretical Domains Framework (TDF). The TDF included 14 theoretical domains synthesised from 33 behaviour change theories and 84 theoretical constructs	✓							✓
McGeough et al., 2020 <sup>38</sup>	Women pregnant while homeless	Multiple	Qualitative evidence synthesis which synthesised 7 studies.		✓						✓
Hellberg et al., 2021 <sup>39</sup>	Pregnant women and women in the perinatal period and their partners	Multiple	Systematic overview of 165 studies, followed by a Delphi survey with 222 participants	✓	✓					151	
Reeve, Humphreys & Wakerman, 2015 <sup>40</sup>	Lifespan (rural and remote communities)	Australia	Mixed methods including a literature review, analysis of health services data, interviews and focus groups	✓						30	
Booth et al., 2019 <sup>41</sup>	Lifespan (vulnerable groups accessing emergency healthcare)	Multiple	Systematic mapping review of the literature (16 studies) followed by an intervention analysis using the Template for Intervention Description and Replication (TIDieR7) framework		✓						✓

<sup>37</sup> Seward K, Finch M, Yoong SL, Wyse R, Jones J, Grady A, Wiggers J, Nathan N, Conte K, Wolfenden L. Factors that influence the implementation of dietary guidelines regarding food provision in centre based childcare services: A systematic review. *Prev Med.* 2017 Dec;105:197-205. doi: 10.1016/j.ypmed.2017.09.024.

<sup>38</sup> McGeough, C., Walsh, A. & Clyne, B. Barriers and facilitators perceived by women while homeless and pregnant in accessing antenatal and or postnatal healthcare: A qualitative evidence synthesis. *Health and Social Care in the Community.* 2020;28: 1380-1393. DOI: 10.1111/hsc.12972.

<sup>39</sup> Hellberg C, Österberg M, Jonsson AK, Fundell S, Trönnberg F, Jonsson M, Skalkidou A. Important research outcomes for treatment studies of perinatal depression: systematic overview and development of a core outcome set. *BJOG.* 2021;128(13):2141-2149. doi: 10.1111/1471-0528.16780.

<sup>40</sup> Reeve C, Humphreys J, Wakerman J. A comprehensive health service evaluation and monitoring framework. *Eval Program Plann.* 2015;53:91-8. doi: 10.1016/j.evalprogplan.2015.08.006.

<sup>41</sup> Booth A, Preston L, Baxter S, Wong R, Chambers D & Turner J. Interventions to manage use of the emergency and urgent care system by people from vulnerable groups: a mapping review. *Health Serv Deliv Res* 2019;7(33)

Klassen et al., 2010 <sup>42</sup>	Lifespan (patients with complex and chronic health conditions)	Multiple	Systematic review of 111 frameworks followed by a concept sorted exercise to identify over-arching concepts		✓						✓
What Works for Children's Social Care, n.d. <sup>43</sup>	0-18	UK	Framework developed in consultation with children and young people, parents and carers, social work practitioners and researchers	✓							✓
LaValle, Hart and Holmes, 2019 <sup>44</sup>	0-18	England	A rapid evidence review of 35 papers including policy documents, research studies and children's social care data frameworks; case studies of four children's social care services including focus groups with 37 participants and interviews with 13; consultations with service users including young people and parents, carers and foster carers; workshops with sector representatives to validate the emerging research findings	✓			33	17	150+		

<sup>42</sup> Klassen A, Miller A, Anderson N, Shen J, Schiariti V, O'Donnell M. Performance measurement and improvement frameworks in health, education and social services systems: a systematic review. *Int J Qual Health Care*. 2010;22(1):44-69. doi: 10.1093/intqhc/mzp057.

<sup>43</sup> What Works for Children's Social Care. Outcomes Framework: Making sure we focus on the issues that really matter. <https://whatworks-csc.org.uk/research/outcomes-framework-for-research/#:~:text=Defining%20outcomes%20in%20Children's%20Social%20Care&text=Outcomes%20are%20important%20for%20understanding.purpose%20of%20Children's%20Social%20Care> (accessed 21 September 2024).

<sup>44</sup> LaValle, I., Hart, D. & Holmes, L. How do we know if children's social care services make a difference? Development of an outcomes framework. 2019. <https://www.education.ox.ac.uk/wp-content/uploads/2019/07/CSCS-Outcomes-Framework-July-2019.pdf> (accessed 21 September 2024).

\*stakeholders views were sought to reach consensus in which indicators to prioritise

\*\*systematic review of the literature

\*\*\*publication mentions data sources that could be used to measure indicators

\*\*\*\*not specified e.g. total number of stakeholders given but does not disaggregate into parents and professionals

\*\*\*\*\*not reported

1. A Better Start was a ten-year National Lottery funded programme which funded local partnerships in five areas to test ways of improving support for families. For more information see: <https://www.tnlcommunityfund.org.uk/funding/strategic-investments/a-better-start>

## Included indicators: definitions, data availability and interpretability

Indicators extracted from the literature review of existing frameworks, their definitions (as reported in the frameworks), data available to measure them and interpretability of that data, organised by domain.

Row no.	Domain and key indicators identified from literature review	Collected / used in a framework / available for children <3y (Y/N) <sup>a</sup>	Suggested definitions in included frameworks	Data availability (see Appendix 10 for further details on each data source)	Data interpretability	No. of frameworks including indicator (Appendix 10)
<b>Safe</b>						
1	Unintentional injuries, including deaths	Y (<4y & <5y)	<p>Road traffic injuries including number of injuries or police fines/cautions from failing to safely restrain quality of children in vehicles; children killed or seriously injured on roads<sup>45,46</sup></p> <p>Number of children presenting at A&amp;E, admitted to hospital or dying due to preventable accidents including (but not limited to) poisoning, burns, scalds, long bone fractures or head injuries<sup>43,47,48, 49</sup></p> <p>Definition of 'accidental injuries' unclear<sup>50</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on hospital admissions caused by unintentional and deliberate injuries in children 0-4, children aged 5 and under killed or seriously injured in road traffic accidents, emergency admissions for exposure to inanimate/animate mechanical forces in children aged 0-4, rate of emergency hospital admissions caused by accidental poisoning in children aged 0-4 years per 100,000 resident population, emergency hospital admissions due to inhalation of food or vomit (aged 0-4 years), rate of emergency hospital admissions caused by exposure to heat and hot substances in children aged 0-4 years per 100,000 resident population, rate of emergency hospital admissions caused by falls in children aged 0-4 years per 100,000 resident population and crude rate of emergency admissions (0-4 years) per 1,000 population.</p> <p><i>National Child Mortality Database</i> Collects data on the reasons for all child deaths in England. Publishes data on injury deaths in children &lt;3y.</p>	Whilst Fingertips currently aggregates data on unintentional and deliberate injuries for children 0-4y, it also has disaggregated data on emergency admission because of preventable causes for 0-4y e.g., poisonings. See 'Intentional injuries, including deaths' below for further details.	7

<sup>45</sup> Government of South Australia. South Australia's Outcomes Framework for Children and Young People. 2023. <https://childrensa.sa.gov.au/wp-content/uploads/2024/02/Outcomes-Framework-2023-FINAL-2023-06-30.pdf> (accessed 21 September 2024).

<sup>46</sup> Public Health England and Department of Health and Social Care. Public Health Outcomes Framework 2019/20: a consultation. 2023. <https://www.gov.uk/government/consultations/public-health-outcomes-framework-proposed-changes-2019-to-2020> (accessed 21 September 2024).

<sup>47</sup> Horne, M., Marryat, L., Corby, D. H., Doi, L., Astbury, R., Jepson, R., ... & Wood, R. Development of an outcome indicator framework for a universal health visiting programme using routinely collected data. BMC health services research. 2024;24(1), 728.

2	Intentional injuries, including deaths	Y (<4y)	Number of children presenting at A&E, admitted to hospital or dying due to deliberate injuries including (but not limited to) poisoning, burns, scalds, long bone fractures or head injuries <sup>43, 45, 46, 49</sup>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on hospital admissions caused by unintentional and deliberate injuries in children 0-4, emergency admissions for exposure to inanimate/animate mechanical forces in children aged 0-4, rate of emergency hospital admissions caused by exposure to heat and hot substances in children aged 0-4 years per 100,000 resident population and crude rate of emergency admissions (0-4 years) per 1,000 population.</p> <p><i>National Child Mortality Database</i> Collects data on the reasons for all child deaths in England. Publishes data on injury deaths in the &lt;3y.</p>	Fingertips currently aggregates data on unintentional and deliberate injuries for children 0-4y. Injuries data might be easier to measure than CPP/ CiN data. However, it is unclear if an increase in reported injuries is due to increased risk to children, changes to provision of alternative (community) services or increased health-seeking behaviours from parents and carers. Intentional injuries are not necessarily reported to services and are much less likely to be reported to services than unintentional injuries (see 'Child abuse and neglect including domestic abuse').	4
---	--	---------	--	--	---	---

<sup>48</sup> National Children's Bureau. Framework for Early Childhood in Jersey Final Report: Produced as part of the Early Childhood Development Programme. 2018. <https://www.ncb.org.uk/sites/default/files/uploads/attachments/Outcomes%20Framework%20for%20Early%20Childhood%20in%20Jersey%20FINAL%20VERSION.PDF> (accessed 21 September 2024).

<sup>49</sup> Born in Bradford. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework. 2023. [https://borninbradford.nhs.uk/wp-content/uploads/Changing-the-way-we-look-at-data\\_V5.pdf](https://borninbradford.nhs.uk/wp-content/uploads/Changing-the-way-we-look-at-data_V5.pdf) (accessed 21 September 2024).

<sup>50</sup> Ministry of Housing, Communities and Local Government. Chapter 3: The National Supporting Families Outcome Framework. 2022. <https://www.gov.uk/government/publications/supporting-families-programme-guidance-2022-to-2025/chapter-3-the-national-supporting-families-outcome-framework> (accessed 21 September 2024).

3	Experience of child abuse and neglect, including domestic abuse	Y (<4y)	<p>Abuse, neglect and domestic abuse not necessarily reported to state services. Such maltreatment could include intentional or unintentional neglect; emotional, physical or sexual abuse (including exploitation); may include exposure to parental substance use, witnessing domestic abuse, exposure to inappropriate or harmful material (e.g. pornography); physical chastisement; female genital mutilation<sup>44,51,52,53</sup></p> <p>Feelings of safety and knowledge related to domestic abuse and child maltreatment<sup>38</sup></p> <p>Definition unclear, or general protection from physical harm<sup>43,54</sup></p>	<p><i>Local Vulnerability Profiles</i> Publishes data on the modelled prevalence of children aged 0-4 in households where parent suffering domestic abuse.</p> <p><i>Understanding Society</i> Publishes data on whether parents' have used the National Domestic Violence Helpline and whether they have not received child maintenance or other payments from a partner because they are or potentially are abusive or violent (note: small sample sizes).</p> <p><i>Other data sources</i> The Crime Survey for England and Wales asks parents about experiences of domestic abuse, sexual assault and stalking in the last 12 months via a self-completion module (currently not reported for households with &lt;3y specifically).</p>	Rates of child abuse, neglect and domestic abuse are under-reported. The Local Vulnerability Profiles modelled estimates are also underpinned by 2014 data which cannot accurately estimate current prevalence or trends over time.	6
---	---	---------	--	---	---	---

<sup>51</sup> Ministry of Housing, Communities and Local Government. Chapter 3: The National Supporting Families Outcome Framework. 2022. <https://www.gov.uk/government/publications/supporting-families-programme-guidance-2022-to-2025/chapter-3-the-national-supporting-families-outcome-framework> (accessed 21 September 2024).

<sup>52</sup> Government of Ireland. Better Outcomes, Brighter Futures: The National Policy Framework for Children and Young People 2014-2020. 2014. <https://www.cypsc.ie/about-us/five-national-outcomes-444.html> (accessed 21 September 2024).

<sup>53</sup> Powell, C., Howarth, E., Feder, G., Gilbert, R. Outcomes taxonomy for child and family-focused interventions for domestic violence & abuse, and child maltreatment. UCL NIHR Policy Research Unit Children and Families. 2021. <https://mfr.de-1.osf.io/render?url=https://osf.io/9htz4/?direct%26mode=render%26action=download%26mode=render>. (accessed 21 September 2024).

<sup>54</sup> Mansukoski, L., Albert, A., Vafai, Y., Cartwright, C., Rahman, A., Sheringham, J., & Bryant, M. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing. International Journal of Environmental Research and Public Health. 2022;19(13), 7947

4	Contact with services for child abuse or neglect including domestic abuse	Y (<1y & <4y)	<p>Statistics for children in contact with children's social care services including rates of referral; Child in Need (CIN) plans; Child Protection (CP) plans; children looked after by the local authority (Children Looked After/CLA); rates of escalation from referral, CIN, CP to CLA; rates of missing persons reports for children <sup>46, 55, 56</sup></p> <p>Injuries caused deliberately through abuse or unintentionally through neglect (e.g. lack of supervision)<sup>44, 53</sup></p> <p>Domestic abuse related incidents reported to the police<sup>44, 46, 47, 54</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on crude rates of domestic abuse related incidents and crimes recorded by the police per 1,000 (not available for parents of under 3s), % offenders who reoffend (not available for parents of under 3s), hospital admissions caused by unintentional and deliberate injuries in children 0-4, A&amp;E attendances 0-4, emergency admissions 0-4 and emergency admissions 0-4 and &lt;1.</p> <p><i>Local Vulnerability Profiles</i> Publishes data on rate of Child in Need (CiN), rate of Child Protection Plan (CPP), rate of Looked After Child (LAC)</p> <p>Looked After Child (LAC) (All rates per 10,000 children), CIN episodes for children aged 0-4 at 31st March 2019 with any abuse or neglect / emotional abuse / neglect / physical abuse / sexual abuse identified as a factor at CIN assessment (excluding looked after children), CIN episodes for children aged 0-4 at 31st March 2019 with domestic abuse identified as a factor at CIN assessment (excl. LAC) and children referred to children's services aged 0-4 but not meeting thresholds.</p> <p><i>Social care national dashboard</i> Publishes data on rates of child on CPR per 10,000 (not available for children from conception to age 3).</p> <p><i>Other data sources</i> Local Authorities collect data on parents and children rehomed or in temporary accommodation due to domestic abuse, usually broken down by age groups (with &lt;3s subsumed by a 0-5-year-old category).</p>	<p>Rates of child abuse, neglect and domestic abuse are under-reported. Domestic abuse recording by police is subject to subjective decision-making as to whether an offence has occurred. It is not mandatory to report if children live in the household or were present during the offence.</p> <p>Reporting of CiN assessments vary between Local Authorities (LAs), and LAs have different thresholds for intervention. Changes in this data may also be a result of changes to service provision. For example, decreasing numbers of CPPs may be due to reduced service capacity.</p> <p>The quality and interpretability of data from third sector organisations such as Refuge should be interpreted alongside funding and reach data to determine whether changes in their reporting rates are indicators of changes to service provision.</p>	5
---	---	---------------	---	--	---	---

<sup>55</sup> Bonin, Matosevic & Beecham. Developing an early years Outcomes Framework using area-level routine data - A Better Start Common Outcomes Framework. 2016. <https://www.tnlcommunityfund.org.uk/media/insights/documents/COF-External-Report-2017-v3-1.pdf?mtime=20211126121811&focal=none> (accessed 21 September 2024).

<sup>56</sup> Ecorys UK, Clarissa White Research Starks Consulting for Department for Education. Family hubs evaluation innovation fund: final research report. 2023. <https://www.gov.uk/government/publications/evaluation-of-family-hubs> (accessed 21 September 2024).

5	Family & social relationships (conflict/stress)	N	<p>Conflict within the family that is frequent, intense or poorly resolved, affecting the child<sup>43, 49</sup></p> <p>Quality of family life including stress and relationships with parents, carers and siblings<sup>51, 57</sup></p> <p>Definition unclear<sup>52</sup></p>	<p>There is currently no available data collected specifically to measure quality of life or family life. The five question Quality of Life tool<sup>58</sup> could be explored in future research. Data from FamilyMan and private law courts could be used to measure custody arrangements and resulting conflicts for the proportion of children that come into contact with the Family Courts.</p>	<p>It is unclear whether parental reporting of this indicator (for example, using a Quality of Life measure) would be an appropriate proxy to determine quality of life for a child &lt;3 years old.</p>	5
<b>Happy</b>						
6	Parent or carer/infant relationship and family relationships	N	<p>Parental responsiveness to the child Secure attachment to a parent/carer/other adult<sup>54, 56</sup></p> <p>Definition unclear<sup>53</sup></p> <p>Children have caring, positive relationships with their family and significant adults within a secure and stable home environment<sup>50, 60</sup></p> <p>Quality of the relationship, conflict, any evaluation of the relationship when in out of home care<sup>51</sup></p>	<p>There is currently no universally accessible, validated tool to measure attachment, The 'Ainsworth Strange Situation' is largely seen as reliable but requires a laboratory environment.<sup>55</sup> Alternative measures include the Brief Attachment Scale<sup>61</sup>, Attachment Q Sort<sup>62</sup> and Toddler Attachment Sort<sup>6</sup>, but more research is needed into their validity and applicability at population level<sup>62</sup>. There are more measures available to assess parent-child relationship including the Mothers Objects Relations Scales (MORS), which was used in the Born into Bradford Better Start study and is currently being used in some areas receiving Start for Life funding<sup>63, 64</sup></p> <p><i>Understanding Society</i> Publishes data on specific aspects of the home environment such as how often a parent talks with and reads to their child and frequency of leisure time spent with children.</p> <p>Other possible measures could focus on child spacing, family size, amount of time spent together as a family.</p>	<p>Contextual factors would be key to measuring this indicator in addition to a validated measurement tool, for example, parental substance use may affect their capacity to respond to their child's needs.</p> <p>It is also possible that this indicator would be interpreted subjectively. For example, if measuring time spent together as a family, more time spent together may not result in higher quality family relationships.</p>	6

<sup>57</sup> Musgrove, E., Gasparini, L., McBain, K., Clifford, S. A., Carter, S. A., Teede, H., & Wake, M. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review. *Pediatric Research*. 2022;92(4), 936-945.

<sup>58</sup> Euroqol. EQ-5D-5L. <https://euroqol.org/information-and-support/euroqol-instruments/eq-5d-5l/> (accessed 21 September 2024).

<sup>59</sup> Roberts, J., Donkin, A., & Pillas, D. Measuring what matters: A guide for children's centres. London: UCL Institute of Health Equity. 2013. <https://www.instituteofhealthequity.org/resources-reports/measuring-what-matters-a-guide-for-childrens-centres/measuring-what-matters.pdf> (accessed 21 September 2024).

<sup>60</sup> Children's Commissioner. Outcomes framework Annex to A positive approach to parenting: Part 2 of the Independent Family. 2022. [https://forbabysake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?\\_gl=1\\*1rnhpqc\\*\\_up\\*MQ.\\*\\_ga\\*NzYzMzc5NzI3LjE3MTcwNTg4MDA.\\*\\_ga\\_2SNC7SWXW4\\*MTcxNzA1ODc5Ny4xLjAuMTcxNzA1ODc5Ny4wLjAuMA](https://forbabysake.org.uk/wp-content/uploads/2023/03/cc-family-review-outcomes-framework-annex-2022-Dec.pdf?_gl=1*1rnhpqc*_up*MQ.*_ga*NzYzMzc5NzI3LjE3MTcwNTg4MDA.*_ga_2SNC7SWXW4*MTcxNzA1ODc5Ny4xLjAuMTcxNzA1ODc5Ny4wLjAuMA) (accessed 21 September 2024).

<sup>61</sup> Cadman T, Belsky J, Pasco Fearon RM. The Brief Attachment Scale (BAS-16): A short measure of infant attachment. *Child Care Health Dev*. 2018; 44: 766–775. <https://doi.org/10.1111/cch.12599>

7	Quality of life (overall quality including physical wellbeing)	N	Definition unclear but includes quality of life and overall health-related quality of life <sup>62</sup>	The Infant Health-Related Quality of Life Instrument measures parent-reported quality of life for 7 health-related areas: sleeping, feeding, breathing, stooling/poo, mood, skin, and Interaction. <sup>65</sup>	It is unclear how accurately available measures capture the child's experience.	1
8	Play	N	Young children have access to resources and spaces to support their ability to play e.g. play groups <sup>43, 50</sup>	There is currently no universally accessible, validated tool to measure amount of time spent in play and access to resources and spaces to support ability to play.	It is extremely difficult to define what we mean by 'play'. Children may also have increased access to resources and spaces to support their ability to play but might not have the opportunities to play.	2
<b>Healthy</b>						
9	Breastfeeding	Y (<8 weeks)	Duration of breastfeeding <sup>53, 55</sup> Initiation (first feed or early initiation) <sup>44, 53, 58</sup> Exclusively breastfed <sup>44, 55</sup> Mother's breastfeeding self-efficacy <sup>55</sup> Rates/prevalence of parents who breastfeed <sup>55, 56</sup> Breastfeeding prevalence at 6-8 weeks after birth <sup>44, 46, 47</sup> Rates of breastfeeding at 9-months <sup>47</sup>	<i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on whether a baby's first feed is breastmilk (from the Maternity Services Dataset), breastfeeding prevalence at 6-8 weeks (full or partial) (from the interim health visiting service delivery metrics)  <i>Understanding Society</i> Publishes data items on whether a parent breastfeeds their child and the age at which a parent stopped breastfeeding.	It may be important to consider nuances in the data. Direct breastfeeding can have more benefits for the child than indirect (expressed breast milk) <sup>66</sup> . In addition, there is evidence that some formula-feeding practices can reduce the risk of rapid weight gain seen in formula-fed compared to breastfed children <sup>67</sup> .	6

<sup>62</sup> van IJzendoorn MH, Vereijken CM, Bakermans-Kranenburg MJ, Riksen-Walraven JM. Assessing attachment security with the Attachment Q Sort: meta-analytic evidence for the validity of the observer AQS. *Child Dev.* 2004 Jul-Aug;75(4):1188-213. doi: 10.1111/j.1467-8624.2004.00733.x. PMID: 15260872

<sup>63</sup> Mooney, K.E., Bywater, T., Dickerson, J. et al. Protocol for the effectiveness evaluation of an antenatal, universally offered, and remotely delivered parenting programme 'Baby Steps' on maternal outcomes: a Born in Bradford's Better Start (BiBBS) study. *BMC Public Health* 23, 190 (2023). <https://doi.org/10.1186/s12889-023-15111-1>

<sup>64</sup> Wittkowski, A., Vatter, S., Muhinyi, A., Garrett, C., & Henderson, M. (2020). Measuring bonding or attachment in the parent-infant-relationship: A systematic review of parent-report assessment measures, their psychometric properties and clinical utility. *Clinical Psychology Review*, 82, 101906.

<sup>65</sup> Jabrayilov, R., Vermeulen, K. M., Detzel, P., Dainelli, L., van Asselt, A. D., & Krabbe, P. F. Valuing health status in the first year of life: the infant health-related quality of life instrument. *Value in Health*, 2019;22(6), 721-727.

10	Immunisation	Y (1, 2, 5 and 2-3y)	<p>Immunisation at 1 and 2 years old<sup>43, 47</sup></p> <p>Population vaccination coverage of Heb B at 1 and 2, BCG Dtap/IPV/Hib at 1 and 2, PCV plus booster, MMR at 2y and 5y, flu at 2-3y<sup>44</sup></p> <p>Definition unclear<sup>49, 57</sup></p> <p>Proportion of children with up-to-date immunisations<sup>47</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i></p> <p>Publishes data on the proportion of children in care for at least 12 months whose immunisations were up to date and the population vaccination coverage of Hepatitis B (1 and 2 years old)/Hib and MenC booster (2 years old) /MMR for one and two doses (2 and 5 years old), PCV, PCV booster and flu (2-3 years old).</p>	<p>Changes in data for this indicator could be easily interpreted as changes to child health. However, there is a drop-off in rate of immunisations between the ages of 1 and 2 years. It may be more appropriate to measure completion of courses of vaccinations.</p>	6
11	Healthy growth, weight, and size	N	<p>Obesity<sup>43, 52, 53</sup></p> <p>Unclear definition of child weight<sup>31</sup></p> <p>Height and weight compared to growth reference data<sup>53</sup></p> <p>BMI<sup>53, 56</sup></p> <p>Percentage of lean body mass<sup>53</sup></p> <p>Malnutrition<sup>43</sup></p> <p>Child weight, weight gain (over time), body composition, anthropometric measurements, weight gain at hospital discharge<sup>55</sup></p> <p>Proportion of children and young people being reported as underweight, overweight or obese<sup>43</sup></p> <p>Definition unclear for “Physically healthy and make positive health choices” but includes prevention of obesity and physical inactivity<sup>50</sup></p> <p>Definition unclear<sup>57</sup></p>	<p>There is currently no data collected at a population level.</p> <p>National Child Measurement Programme Collects height and weight surveillance data for children aged 4-5 (in Reception), but not available for &lt;3s.</p>	<p>If this indicator were better defined and data available to measure it at a population level, changes in data for this indicator would likely be highly indicative of changes to the health of &lt;2y.</p>	7

<sup>66</sup> Courtney N. Slater, Nina A. Juntereal, Tanja V. E. Kral, Diane L. Spatz, and Ariana M. Chao. Comparison of the Effect of Direct Breastfeeding, Expressed Human Milk, and Infant Formula Feeding on Infant Weight Trajectories: A Systematic Review. *Breastfeeding Medicine* 2024 19:4, 235-247

<sup>67</sup> Mirshahi, S., Battistutta, D., Magarey, A. et al. Determinants of rapid weight gain during infancy: baseline results from the NOURISH randomised controlled trial. 2011. *BMC Pediatr* 11, 99 . <https://doi.org/10.1186/1471-2431-11-99>

12	Healthy eating/ nutrition	N	<p>Healthy eating<sup>31</sup></p> <p>Feeding problems and behaviour inc. feeding difficulties, responsive infant feeding, feeding method, types of foods and other drinks consumed and offered, parental knowledge about healthy foods, age of introduction to solids and amount, volume and type of formula consumed<sup>55</sup></p> <p>Proportion of children and young people with access to healthy food<sup>43</sup></p> <p>Definition of “good nutritional practices” unclear<sup>53</sup></p> <p>Definition of “diet” unclear<sup>44</sup></p>	<p>There is currently no data collected at a population level.</p> <p><i>Understanding Society</i> Publishes survey data from parents on the degree to which their newborn child seems to have no appetite and the degree to which they refuse to eat. Publishes survey data from parents on whether individuals in a household eat fruit and vegetables every day.</p> <p><i>Kantar dataset</i> Publishes data on household food purchasing and links to panel data capturing food usage. This data could potentially be used as a proxy measure of exposure to marketing of food goods, as this strongly influences food purchasing behaviours and, therefore, healthy eating behaviours in a household.</p>	<p>If available, changes in data for this indicator could be interpreted as improvements or decreases in child health.</p>	5
13	Child physical activity/ sedentary behaviour	N	<p>Definition unclear<sup>52</sup></p>	<p>There is currently no data collected at a population level.</p>	<p>If available, changes to data on this indicator would indicate changes to child health. However, for the &lt;3 years old population it may be more appropriate to measure ‘screen time’, access to green spaces, and available Stay and Play sessions.</p>	1
14		<p>Y (at birth)</p> <p>N</p>	<p>Low birthweight of term babies or for gestational age<sup>43, 44, 55, 56</sup></p> <p>Live births at 37 weeks gestation &lt;2500g<sup>53</sup></p> <p>Length at birth, length for gestational age, head circumference at birth, large for gestational age, small for gestational age<sup>55</sup></p> <p>Definition unclear<sup>68</sup></p> <p>Newborn anthropometry and body composition<sup>69</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on low birthweight of term babies (births with a recorded birth weight under 2500g and a gestational age of at least 37 complete weeks), low birthweight of all babies, and very low birthweight of all babies.</p> <p><i>Understanding Society</i> Publishes survey data from parents on their newborn child’s birthweight in kilograms, pounds and ounces.</p>	<p>To increase interpretability of birth weight and size, it may be useful to use this indicator alongside data on characteristics of women who give birth which are related to birth weight and size including maternal age, rates of multiple births.</p>	7

<sup>68</sup> Duffy, J. M., Rolph, R., Gale, C., Hirsch, M., Khan, K. S., Ziebland, S., ... & Williamson, P. Core outcome sets in women’s and newborn health: a systematic review. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2017;124(10), 1481-1489

<sup>69</sup> Killeen, S. L., Callaghan, S. L., O’Reilly, S. L., & McAuliffe, F. M. Pregnancy Nutrition Core Outcome Set (PRENCOS): A core outcome set development study. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2023;130(10), 1247-1257.

15	Gestational age	Y (at birth)	<p>Gestational age at delivery<sup>58</sup></p> <p>Number of live births at 37 weeks gestation<sup>53</sup></p> <p>Premature birth and extremely preterm birth (&lt;35 weeks)<sup>43, 55</sup></p>	<p><i>Office for National Statistics</i> Publishes data on the crude rate of premature births (&lt;37 weeks gestation)<sup>70</sup></p> <p><i>Understanding Society</i> Publishes survey data from parents on whether their newborn child was born when expected, early or late (prior to or after one week of expected due date, respectively)</p>	<p>Reductions in gestational age could be due to complications in pregnancy, or a desire to prevent pregnancies exceeding 40-weeks. Additional data on these might be needed to be interpreted alongside data for this indicator.</p>	4
16	Infant mortality/ excess winter deaths	Y (<1y)	<p>Excess winter deaths index (over 1 year and 3 yrs, all ages)<sup>44</sup></p> <p>Rate of infant mortality per 1000<sup>47</sup></p> <p>Definition unclear but includes infant death, neonatal mortality, perinatal mortality, offspring mortality, death of surviving twin after death of co-twin<sup>55</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on infant deaths under 1 year of age, per 1,000 live births.</p> <p><i>Office for National Statistics</i> Releases still birth rates annually<sup>71</sup></p> <p>There is no data for death of surviving twin after death of co-twin for &lt;3s</p>	<p>It is important to consider gestational age when interpreting data on this indicator as many still births occur under 24-weeks gestation<sup>72,73,74</sup> and there can be crossover in reporting of live and still births and changes in recording practices. Changes in rates could also be an indicator of service performance.</p>	3

<sup>70</sup> Births in England and Wales: linked births - Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsinenglandandwaleslinkedbirths> (accessed 19 December 2024).

<sup>71</sup> Office for National Statistics. Births in England and Wales: 2022 (refreshed populations). 2024.

[https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsummarytablesenglandandwales/2022refreshedpopulations#:~:text=The%20stillbirth%20rate%20in%202022,pandemic%20in%202019%20\(3.9\).](https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/birthsummarytablesenglandandwales/2022refreshedpopulations#:~:text=The%20stillbirth%20rate%20in%202022,pandemic%20in%202019%20(3.9).) (accessed 21 September 2024).

<sup>72</sup> Nath, S., Hardelid, P., & Zylbersztejn, A. Are infant mortality rates increasing in England? The effect of extreme prematurity and early neonatal deaths. *Journal of Public Health*, 2021; 43(3), 541-550.

<sup>73</sup> MBRRACE-UK. UK perinatal deaths of babies born in 2022. 2024.

<https://timms.le.ac.uk/mbrance-uk-perinatal-mortality/surveillance/#:~:text=The%20number%20and%20proportion%20of,all%20neonatal%20deaths%20in%202022> (accessed 21 December 2024).

<sup>74</sup> Office for National Statistics. Child and infant mortality in England and Wales: 2022. 2024.

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/childhoodinfantandperinatalmortalityinenglandandwales/2022> (accessed 21 September 2024).

17	Parental smoking/exposure to smoke in pregnancy	Y (pre-birth)	<p>Primary carer current smoker and/or child exposed to second hand smoke when newborn<sup>46</sup> or at 27–30 months<sup>45</sup></p> <p>Smoking status and number of cigarettes per day during pregnancy<sup>53</sup></p> <p>Smoking at booking<sup>44</sup>, at the first antenatal visit<sup>55</sup>, in the first 20 weeks of pregnancy<sup>43</sup> or at birth<sup>47</sup></p> <p>Mother's exposure to tobacco smoke during pregnancy<sup>56</sup></p> <p>Definition unclear<sup>57</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of pregnant women who smoke at the time of booking appointment with midwife taken from the Maternity Services Data Set.</p> <p><i>Understanding Society</i> Publishes survey data from parents on whether they smoked during their pregnancy and the number of cigarettes smoked during each trimester of pregnancy, and whether they smoke currently (when no longer pregnant but have a child in the house) (Note: samples are extremely small).</p> <p><i>Other data sources</i> NHS Digital reports statistics on women smoking at time of delivery of their baby for every quarter of each year. However, to reduce the burden of data collection there is a proposal to discontinue this measure in favour of the data in the Maternity Services Dataset.<sup>75</sup></p>	Data in the Maternity Services Data Set may vary based on reporting and recording practices in LAs with high missing data for some items, making changes to this data difficult to interpret. <sup>76</sup>	9
18	Alcohol use in pregnancy	Y (pre-birth)	<p>Weekly alcohol units<sup>53</sup></p> <p>Alcohol use at booking<sup>44</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of pregnant women who drink alcohol at the time of booking appointment with midwife (experimental).</p> <p><i>Understanding Society</i> Publishes survey data from parents on whether and how often they drank alcohol whilst pregnant (units of alcohol per day of drinking and per week) (Note: samples are extremely small).</p>	<p>There will likely be significant underreporting of this data as there are high disincentives to disclose alcohol use in pregnancy.</p> <p>Data from primary care may provide an alternative data source.</p>	2
19	Substance use in pregnancy	Y (pre-birth)	Substance use status <sup>53</sup>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of pregnant women who are misusing non-medicinal drugs or other unauthorised substances at the time of booking appointment with midwife (experimental).</p>	<p>There will likely be significant underreporting of this data as there are high disincentives to disclose substance use in pregnancy.</p> <p>Administrative data from primary care may offer an alternative source of data.</p>	1

<sup>75</sup> NHS Digital. Statistics on Women's Smoking Status at Time of Delivery: England. 2024. <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-women-s-smoking-status-at-time-of-delivery-england> (accessed 21 September 2024).

<sup>76</sup> Public Health England. Characteristics of women who stop smoking in pregnancy. 2021. [https://assets.publishing.service.gov.uk/media/614c3ee2e90e077a2ba1f350/Analysis\\_characteristics\\_of\\_women\\_who\\_stop\\_smoking\\_in\\_pregnancy.pdf](https://assets.publishing.service.gov.uk/media/614c3ee2e90e077a2ba1f350/Analysis_characteristics_of_women_who_stop_smoking_in_pregnancy.pdf) (accessed 21 September 2024).

20	Weaning	N	Timing of weaning and introduction to appropriate foods <sup>53</sup>	<i>Infant Feeding Survey</i> Publishes data on timing of when babies are introduced to solid foods and type of foods introduced (data collected every 5 years between 1975 and 2010, with the final survey in 2023. It is unclear whether the survey will continue after 2023).	It is difficult to define what is meant by 'weaning' as there is no strict guidance on the age at which babies should be weaned and what food they should be weaned on to.	1
21	Sleep quality and duration	N	Definition unclear includes sleep problems, awakenings from sleep, daytime sleepiness, total time asleep, sleeping time, total time asleep in 34 hours <sup>55</sup>  Definition unclear <sup>51</sup>	<i>Understanding Society</i> Publishes survey data from parents on the time typically taken for their newborn child to settle into sleep and the number of times a newborn child usually wakes themselves up at night.	It is difficult to define what 'healthy' sleep quality and duration should look like for <3s, making it difficult to interpret data on this indicator.	2
22	Crying/ Consolability	N	Definition unclear but includes consolability, crying, discomfort of infant, duration of crying <sup>55</sup>	<i>Understanding Society</i> Publishes data on how difficult a parent finds calming or soothing their newborn child when they are upset and how often their child usually fusses or cries during a typical 24-hour period.	It is difficult to define what 'healthy' crying/consolability should look like for <3s making it difficult to interpret data on this indicator.	1
<b>Developing</b>						
23	Overall development including gross and fine motor	Y (2-2½y)	Definition unclear but mentions "meeting overall developmental milestone at age 2" <sup>43</sup>  % child developing typically across all domains <sup>46</sup>  Developmental needs met inc. communication skills/speech and language, problem-solving, school readiness, personal social and emotional development. 'Met' defined as sufficient scores on ELM, ASQ or SDQ (3+) <sup>49</sup>  Proportion of children scoring above the cut off for all areas as measured using the ASQ®-3 <sup>47</sup>  Definition unclear <sup>50, 55</sup>  Definition unclear but includes all aspects of child development, behaviour and functioning in day-to-day life and any relevant individual child education or training outcome <sup>51</sup>	See 'Language and communication development' indicator.  <i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of children achieving a good level of development at 2-2½y review (% at or above the expected level in all five Ages and Stages Questionnaire 3 (ASQ®-3) domains).  <i>Understanding Society</i> Publishes survey data from parents on their child's behaviour including whether they believe their child to be anxious, nervous, unhappy, amongst other things.  Individual childcare settings record data on children's development, although this is not currently available at a national level.	See 'Language and communication development' indicator.	7

24	Language and communication development	Y (2-2½y)	<p>Vocalising, babbling, development of communicative gestures, combinatorial speech and more complex sentences and word learning<sup>53</sup></p> <p>Definition unclear<sup>52</sup></p> <p>Definition unclear but includes speech &amp; language, receptive language skills, speech development, listening skills, communication, literacy<sup>55</sup></p> <p>Definition unclear but includes children developing age appropriate comprehension of spoken and written language, building age appropriate use of spoken and written language, such as imitating words and sounds at 8-20 months and beginning to put two words together at 16-26 months<sup>56</sup></p> <p>Definition unclear but includes any concern about speech, language and communication development at 27–30months<sup>45</sup></p> <p>% children referred to speech and language therapy<sup>47</sup></p>	<p>Child developmental data is collected as part of a universal health and developmental review at age 2-2½ years and is, in theory, available in the Community Services Data Set (CSDS). The universal health and developmental review has good coverage but not as high as the health visiting reviews earlier in a child's life (there's around 80% coverage of universal health and development reviews, of which 94% use the ASQ®-3, and relatively stable coverage over time)<sup>77,78</sup>. There is emerging evidence that children living in deprived neighbourhoods are less likely to receive their universal health and developmental review at age 2-2½ years<sup>79,80,81</sup>. There is mixed and/or weaker evidence young children from minority ethnic groups and with children's social care contact are less likely to get their mandated health review than other children<sup>79, 80, 81</sup>.</p> <p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of children achieving the expected level in communication skills at their 2-2½y review (% at or above the expected level in the Ages and Stages Questionnaire 3 (ASQ®-3) communication skills domain).</p> <p>Other data sources All LAs are expected to use the early language identification measure (ELIM) to collect data on children's speech, language, and communication development as part of the 2-2½y review. This data should be collected as part of the Community Services Data but completeness is unknown (likely to be low).<sup>82</sup></p>	<p>ASQ®-3 data in the CSDS is very incomplete. Previous analysis found that (in 2018-20/21) only 64/149 LAs had contributed complete data to the CSDS<sup>83</sup>. There are no currently adequate data flows into national data sets to analyse ASQ®-3 scores at a population level<sup>84</sup>. ASQ®-3 is also not very sensitive but is specific; the tool will miss many children who have below expected development but does not often misidentify delay in children developing typically<sup>83</sup>. There will also be variation in how the tool is used across health visiting teams and local authorities, which complicates geographical comparisons<sup>84</sup>.</p>	
----	--	-----------	---	---	---	--

<sup>77</sup> Liu, M., Woodman, J., Mc Grath-Lone, L., Clery, A., Bunting, C., Bennett, S., ... & Harron, K. (2024). Local area variation in health visiting contacts across England for children under age 5: a cross-sectional analysis of administrative data in England 2018-2020. *International Journal of Population Data Science*, 9(2), 2382.

<sup>78</sup> Office for Health Improvement and Disparities. Health visitor service delivery metrics: quarterly data for 2023 to 2024. 2024.

<https://www.gov.uk/government/statistics/health-visitor-service-delivery-metrics-quarterly-data-for-2023-to-2024> (accessed 28 September 2024).

<sup>79</sup> Woodman, J., Harron, K., & Hancock, D. (2021). Which children in England see the health visiting team and how often?. *Journal of Health Visiting*, 9(7), 282-284.

<sup>80</sup> Department of Health and Social Care. The best start for life: a vision for the 1,001 critical days.

<https://www.gov.uk/government/publications/the-best-start-for-life-a-vision-for-the-1001-critical-days> (accessed 25 September 2024).

<sup>81</sup> Fraser, C., Harron, K., Barlow, J., Bennett, S., Woods, G., Shand, J., ... & Woodman, J. (2022). Variation in health visiting contacts for children in England: cross-sectional analysis of the 2–2½ year review using administrative data (Community Services Dataset, CSDS). *BMJ open*, 12(2), e053884.

25	Social and emotional development (social skills, self-regulation, engagement with others)	Y (2-2½y)	<p>Complex process encompassing self-perceptions and self-awareness, motivation, self-control and self-regulation, social skills, resilience and coping<sup>53</sup></p> <p>Definition unclear<sup>52</sup></p> <p>Definition unclear but includes psychosocial development, friendships, behaviour concerns, impulsivity<sup>55</sup></p> <p>Age appropriate self-management and self-control, such as cooperating with boundaries and routines, taking turns and sharing, being aware of others' feelings and expressing own feelings, and engaging in age-appropriate play, such as being interested in others' play and starting to join in<sup>56</sup></p> <p>Definition unclear but includes any concern about social and emotional development at 27–30months<sup>45</sup></p> <p>Proportion of children reaching expected level of social and emotional development at 2½ years as measured using the ASQ:SE-247</p> <p>Concept includes the ability to self-regulate, empathy and be emotionally resilient<sup>50</sup></p>	<p>See 'Language and communication development' indicator.</p> <p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on percentage of children achieving the expected level in personal-social skills at 2-2½y review (% at or above the expected level in the Ages and Stages Questionnaire 3 (ASQ®-3) personal-social skills domain).</p>	See 'Language and communication development' above.	7
----	---	-----------	---	--	---	---

<sup>82</sup> Public Health England. Early language identification measure and intervention. 2020.

[https://assets.publishing.service.gov.uk/media/5fc50ee4e90e0762aabe93b6/ELIM\\_Handbook\\_December-2020.pdf](https://assets.publishing.service.gov.uk/media/5fc50ee4e90e0762aabe93b6/ELIM_Handbook_December-2020.pdf) (accessed 28 September 2024).

<sup>83</sup> Jung J, Cattan S, Powell C, et al. Early child development in England: cross-sectional analysis of ASQ®-3 records from the 2-2½-year universal health visiting review using national administrative data (Community Service Dataset, CSDS). medRxiv;2024.09.28.24314205.

<sup>84</sup> Lysons J, Pineda RM, Alarcon G, et al. Measuring child development at the 2-2½ year health and development review. 2024. Children and Families Policy Research Unit. [https://www.ucl.ac.uk/children-policy-research/sites/children\\_policy\\_research/files/asq\\_final\\_report\\_fin.pdf](https://www.ucl.ac.uk/children-policy-research/sites/children_policy_research/files/asq_final_report_fin.pdf) (accessed 25 September 2024).

26	Cognitive development (executive function, concentration, attention, memory)	Y (2-2½y)	<p>All children are developing age-appropriate skills in drawing and copying, and children increase the level to which they pay attention during activities and to the people around them<sup>56</sup></p> <p>Definition unclear but includes general cognitive ability, cognitive function/impairment, executive function, concentration, memory, brain function, learning<sup>55</sup></p>	<p>See 'Language and communication development' indicator.</p> <p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of children achieving the expected level in problem solving skills at 2-2½y review (% at or above the expected level in the Ages and Stages Questionnaire 3 (ASQ®-3) problem solving skills domain).</p>	See 'Language and communication development' above.	2
27	Connected to family, friends, and culture	N	<p>Attending cultural venues and events, feeling connected to adults in their home and community<sup>43</sup></p> <p>Definition unclear but includes having at least two strong relationships with adults, engaged in community and all families have healthy relationships<sup>57</sup></p> <p>Quality, opportunity for and type of any non-family relationships, such as peers or friends<sup>51</sup></p>	<p>There is currently no available and validated tool to measure this indicator at a population level.</p> <p><i>Understanding Society</i> Publishes survey data from parents on activities they do as a household such as have friends over, do hobby/leisure activities, family holidays, and whether their children of on school trips and have celebrations on special occasions. Publishes data on a parent's social networks (friends and family, including those living nearby). Has derived data on neighbourhood cohesion, measured using Buckner's Neighbourhood Cohesion Instrument.</p>	It may be difficult to interpret changes to this indicator as any stimulation would need to be age-appropriate to support development.	3

External factors						
Physical environment						
28	Housing	Y (all children)	Homelessness <sup>43, 44, 49, 52, 57</sup>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on households with one or more dependent children owed a prevention or relief duty under the Homelessness Reduction Act</p> <p><i>Local Vulnerability Profiles</i> Publishes data on rates of households assessed as threatened with homelessness and rates of households assessed as homeless</p> <p><i>Census 2021</i> The census produces statistics on the number of people in hostels and temporary shelters for people 4 years and under<sup>85</sup></p> <p><i>Other data sources</i> The Ministry of Housing, Communities and Local Government publishes annual data on statutory homeless rates<sup>86</sup> for households with dependent children. The Ministry of Housing, Communities and Local Government publishes rough sleeping rates<sup>87</sup> for under 18s. Both data are available by local authority but not for children &lt;3y specifically.</p>	It was suggested by experts that data from local authorities would be much more reliable and complete than police data. Regardless, changes to data for this indicator (when available for <2y) would likely indicate an improvement in child health and wellbeing.	7

<sup>85</sup> Office for National Statistics. People experiencing homelessness, England and Wales. 2023. <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/peopleexperiencinghomelessnessenglandandwales/census2021>. (accessed 28 September 2024).

<sup>86</sup> Ministry of Housing, Communities and Local Government. Homelessness statistics. 2013. <https://www.gov.uk/government/collections/homelessness-statistics> (accessed 21 September 2024).

<sup>87</sup> Ministry of Housing, Communities and Local Government. Rough sleeping snapshot in England: autumn 2022. 2023. <https://www.gov.uk/government/statistics/rough-sleeping-snapshot-in-england-autumn-2022/rough-sleeping-snapshot-in-england-autumn-2022> (accessed 25 September 2024).

		Y (all children)	Temporary and unstable accommodation <sup>44, 49, 51</sup>	<p><i>Local Vulnerability Profiles</i> Publishes annual data on rates of households in temporary accommodation with children and total number of children in temporary accommodation. This data comes from the Ministry of Housing, Communities and Local Government homelessness statistics<sup>86</sup>.</p> <p><i>Other data sources</i> Our experts stated that local authority data captures the number of mothers and children who are in temporary accommodation and / or have been relocated due to domestic abuse, and they openly provide this data online at an aggregate level, though it's often difficult to locate.</p>		
		Y (all children)	Household crowding, suitability and quality (e.g., damp, no heating) <sup>47, 49, 51, 52</sup>	<p><i>Local Vulnerability Profiles</i> Publishes data on estimated prevalence rates of children living in crowded spaces (occupancy rating for bedrooms of less than -1) and population-based projected rates of overcrowded households in 2018. Based on 2011 census data and data isn't available for &lt;3s specifically.</p> <p><i>Census 2021</i> Produces statistics on household overcrowding and lack of central heating at a local area level<sup>88</sup>, through this data isn't available for &lt;3s specifically.</p> <p><i>English Housing Survey</i> Collects data on overcrowding rates and the number of decent homes in small areas in England<sup>89</sup>, by tenure and over time. Data is collected on the age of children in a household and publicly available data is available for &lt;1s and 1-5s.</p>		

<sup>88</sup> Office for National Statistics. Housing, England and Wales: Census 2021. 2023. <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingenglandandwales/census2021#rooms-bedrooms-and-occupancy-rating> (accessed 21 September 2024).

<sup>89</sup> English Housing Survey. Questionnaire Documentation. [https://assets.publishing.service.gov.uk/media/6399b86fd3bf7f7b68afc11f/EHS\\_Questionnaire\\_documentation\\_2021-22.pdf](https://assets.publishing.service.gov.uk/media/6399b86fd3bf7f7b68afc11f/EHS_Questionnaire_documentation_2021-22.pdf) (accessed 21 September 2024).

		N	Household affordability and access <sup>51, 52</sup>	<i>Office for National Statistics</i> Produces statistics on the housing affordability in England and Wales <sup>90</sup> but not broken down by age of child in the household.		
29	Air pollution	Y (not children specifically)	Fraction of mortality attributable to particulate air pollution <sup>52</sup>  No definition <sup>44</sup>	<i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the fraction of mortality attributable to particulate air pollution and annual concentration of fine particulate matter at an area level, adjusted to account for population exposure.  <i>Understanding Society</i> Publishes data on whether a household experiences pollution, grime or other environment problems caused by traffic or industry.  <i>Department for Environment, Food and Rural Affairs</i> Publishes a range of data on air quality in England <sup>91</sup> , collected by a network of air quality monitoring stations across the country. This could be modelled to make predictions about air quality in a child's local area. Annual averages in small areas could be used to see if it's above the World Health Organisation's recommended limit: less than five micrograms per cubic meter annually for PM 2.5 (fine particulate matter with particles $\leq 2.5$ micrometres diameter), and less than 10 micrograms per cubic meter annually for Nitrogen dioxide.	Experts stated that there is no safe level of air pollution; exposure to air pollution is harmful for the health of children at any age, but particularly harmful for pregnant women and young children <sup>92, 93</sup> .  Health effects of air pollution for babies and young children include low birth weight, asthma, slower development of lung function and development problems <sup>93</sup> .	

<sup>90</sup> Office for National Statistics. All data related to Housing affordability in England and Wales: 2023.

<https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingaffordabilityinenglandandwales/latest/relateddata> (accessed 21 September 2024).

<sup>91</sup> Department for Environment, Food and Rural Affairs. Air quality and emissions statistics. 2013.

<https://www.gov.uk/government/collections/air-quality-and-emissions-statistics> (accessed 21 September 2024).

<sup>92</sup> Schwartz, J. (2004). Air pollution and children's health. *Pediatrics*, 113(Supplement\_3), 1037-1043.

<sup>93</sup> Department of Health and Social Care. Chief Medical Officer's annual report 2022: air pollution. 2022. <https://assets.publishing.service.gov.uk/media/639aeb81e90e0721889bbf2f/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf> (accessed 21 September 2024).

30	Neighbourhood factors (includes green spaces, walkability, playgrounds, traffic)	Y (not children specifically)	<p>Quality of and access to/use of aspects of the physical environment including playgrounds, walkable streets and outdoor green spaces<sup>44, 50, 52, 53</sup></p> <p>Exposure to traffic, noise and noise caused by traffic<sup>44, 52</sup></p>	<p><i>Understanding Society</i> Publishes data on whether a child has safe space outdoors to play by age of child in a household.</p> <p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on rates of complaint about noise, the percentage of the population exposed to road, rail and air transport noise of 65 decibels (A-weighted) or more during the daytime and the percentage of the population exposed to road, rail and air transport noise of 55 decibels (A-weighted) or more during the night-time.</p> <p><i>Office for National Statistics</i> Publishes data on access to garden space, public parks and playing fields at a small area level<sup>94</sup>. Data on garden space is published as a count of addresses in each area with garden space, the total area (in m<sup>2</sup>) of space and the average space (in m<sup>2</sup>) per household. Data on public parks and playing fields is published as average distance to and average size of the nearest park, public garden or playing field, density of the areas around local parks, public gardens and playing fields, and the average number and combined size of parks, public gardens and playing fields within a 1000m radius. Data is not available specifically for &lt;3s.</p> <p><i>Adults People and Nature Survey for England</i> Asks ~1000 people about children's experiences of green and natural spaces, their barriers to visiting and reasons for not spending more time outside. Respondents are asked monthly and data is released quarterly. It is unclear if this data is available for &lt;3s specifically.</p> <p><i>Other data sources</i> Fields in Trust create and published the <i>Green Space Index</i><sup>95</sup> (GSI) – a data tool designed to track and analyse the provision of green space (including playgrounds) in the UK. Data is available for all children and is not broken down for &lt;3s specifically. Data is published annually.</p>	Experts stated that data on various neighbourhood factors including access to green space, playgrounds and rates of complaints about noise is readily available, interpretable and can be easily used for population level monitoring.	4
----	--	-------------------------------	---	---	--	---

<sup>94</sup> Office for National Statistics. Access to gardens and public green space in Great Britain.

<https://www.ons.gov.uk/economy/environmentalaccounts/datasets/accesstogardensandpublicgreenspaceingreatbritain> (accessed 21 September 2024).

<sup>95</sup> Fields in Trust. Green Space Index. <https://fieldsintrust.org/insights/green-space-index> (accessed 21 September 2024).

31	Access to books	N	Definition unclear <sup>52</sup>	<i>Understanding Society</i> Publishes data on specific aspects of the home environment such as how often a parent reads to their child.	Access to books does not necessarily mean a child will read them, either independently or with a parent/carer. Access to age-appropriate books may also be important.	1
<b>Social environment</b>						
32	Community violence/crime	N	Children should be safe within their community and be protected from harm <sup>50, 57</sup>	This indicator is difficult to measure for young children and there is no data available to measure this indicator at a population-level for this age group, however proxy data could be collected via parents' own feelings of safety within their community. For example, the Crime Survey for England and Wales asks parents about experiences of crime via a self-completion module and Understanding Society publishes survey data from parents on their own feelings of safety in their local area, whether they avoid parts of their area and experiences of crime. The Crime Survey for England would need to report its data by households with/without children, stratified by age of youngest child (data is currently collected but not reported). Understanding Society data is available for the <3-year-old population specifically. The Office for National Statistics publish data on incidences of household crime, personal crime and data recorded by the Community Safety Partnership Area <sup>96</sup> .	Data collected would be a proxy answer by the parents, so not necessarily reflective of the child's feelings of safety. In addition, it is unclear to what extent young children's development is affected by community violence and crime if their home environment is safe and secure.	2
33	Support from friends/family	N	Definition unclear <sup>56</sup>  All families feel part of and supported by a wider network inc. across their extended family and/or within their community <sup>51, 57</sup>  Quality of the relationship between caregivers <sup>51</sup>	<i>Understanding Society</i> Publishes survey data on a parent's social networks (friends and family, including those living nearby).  There is currently no other data available to measure this indicator at a population-level.		3

<sup>96</sup> Office for National Statistics. All data related to crime and justice.

<https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datalist?filter=datasets> (accessed 21 September 2024).

Economic circumstances						
34	Poverty/levels of deprivation/ socioeconomic deprivation	Y (<16y and all children)	<p>Poverty<sup>53</sup></p> <p>Poverty and inequality<sup>52</sup></p> <p>Basic care needs met<sup>52</sup></p> <p>Financial hardship<sup>43</sup></p> <p>Children in low-income families<sup>44</sup></p> <p>Fuel poverty<sup>44, 49</sup></p> <p>Financial stability<sup>52</sup></p> <p>Inequalities<sup>52</sup></p> <p>Children in families where financial support needed from service<sup>49</sup></p> <p>Protected from poverty and social exclusion including adequate income, resources, living in decent houses, access to quality affordable food, good quality education and healthcare, and opportunities necessary to develop and participate as equals in society<sup>50</sup></p> <p>Extreme poverty<sup>57</sup></p> <p>'Family income &amp; employment' defined as including caregiver access to employment, their capacity to attend education, the extent to which family financial needs are met (or perceived to be) met, including access to benefits and welfare support<sup>51</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the percentage of children in low-income families for under 16s only, percentage of children in relative / absolute low-income families for under 16s only and proportion of children aged 0 to 15 living in income deprived families. This data is collected for &lt;3s but not reported for children &lt;3y. Fingertips also has Income Deprivation Affecting Children Index (IDACI) data, reported as a proportion of all children in each local authority and data on the percentage of households in an area that experience fuel poverty. This data isn't reported for children &lt;3y specifically but could be.</p> <p><i>Local Vulnerability Profiles</i> Publishes data on households with children claiming universal credit, but not broken down by child age.</p> <p><i>Department for Work and Pensions (DWP)</i> Has local authority and ward level data on the number of households below average income<sup>97</sup>, including a specific measure on material deprivation and food insecurity, and income dynamics (including persistence in poverty) of households in local area. Also publishes data on children in low incomes families before and after housing costs<sup>98</sup>, broken down by age of child (though the 0 to 5 population subsumes &lt;3s).</p> <p><i>Office for National Statistics</i> Derives estimates of household income<sup>99</sup>, but allows their use only at the area level.</p> <p><i>Understanding Society</i> Publishes data on parents' income, benefits receipt, debt, outgoings (for housing, food and energy) and use of foodbanks. Publishes survey data from parents on whether they have, in the last 12 months, been unable to eat food or healthy nutritious foods because of financial restrictions. This data is available for &lt;3s.</p>	<p>Different measures can capture different factors of deprivation and poverty. For example, measures of household income more strongly and consistently predict child health and educational outcomes than area-based measures of deprivation<sup>100</sup>. Experts advised that, where possible, household measures of this indicator be used in place of or in conjunction with area-based measures<sup>100</sup>.</p> <p>In addition, binary data (e.g. % of children in low-income families) or small area level data (e.g. index of multiple deprivation) obscure the gradient of income where lower income predicts adverse health outcomes for young children across the whole distribution of income deprivation<sup>96,101</sup>.</p>	9

<sup>97</sup> Department for Work and Pensions. Households below average income (HBAI) statistics. 2013.

<https://www.gov.uk/government/collections/households-below-average-income-hbai--2> (accessed 21 September 2024).

<sup>98</sup> Department for Work and Pensions. Children in low income families: local area statistics.

<https://www.gov.uk/government/collections/children-in-low-income-families-local-area-statistics> (accessed 21 September 2024).

35	Employment	Y (not children specifically)	<p>Definition unclear<sup>52, 54, 57</sup></p> <p>Parents accessing good work or developing skills needed for employment, particularly those furthest away from the labour market<sup>56</sup></p> <p>'Family income &amp; employment' includes caregiver access to employment, their capacity to attend education, the extent to which family financial needs are (or perceived to be) met, including access to benefits and welfare support<sup>51</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the % of people in employment (16-64 yrs) (not available for parents of children &lt;3y specifically)</p> <p><i>Local Vulnerability Profiles</i> Publishes data on the estimated local unemployment rate (%) (not available for parents of children &lt;3y specifically)</p> <p><i>Understanding Society</i> Publishes data on parents' employment status and history, income, benefits receipt, debt, outgoings (for housing, food and energy) and use of foodbanks. Publishes survey data from parents on whether they have, in the last 12 months, been unable to eat food or healthy nutritious foods because of financial restrictions.</p>	Increased employment rates for parents of the under 3s do not necessarily translate to improved outcomes for children. In-work poverty rates are high and rising, particularly for families with children <sup>102</sup> , and employment rates might rise due to parents working than one job, which might detrimentally impact child outcomes depending on childcare arrangements and the time this allows families to spend together.	6
		N	<p>Children in families with workless adults<sup>49</sup></p>	<p><i>Office for National Statistics</i> Produces annual estimates of the number of children living in households in the UK where all the adults have not worked for at least 12 months, by age of child.</p>		

<sup>99</sup> Office for National Statistics. Income estimates for small areas, England and Wales: financial year ending 2020. 2023. <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/smallareamodelbasedincomeestimates/financialyearending2020> (accessed 22 September 2024).

<sup>100</sup> Skarda, I., Cookson, R., & Gilbert, R. Does household income predict health and educational outcomes in childhood better than neighbourhood deprivation?. medRxiv, 2024-07.

<sup>101</sup> Timpson K, McCartney G, Walsh D, et al. What is missing from how we measure and understand the experience of poverty and deprivation in population health analyses? European Journal of Public Health. 2023;33:974–80. doi: 10.1093/eurpub/ckad174

<sup>102</sup> The Health Foundation. 2024. In-work poverty trends. <https://www.health.org.uk/evidence-hub/money-and-resources/poverty/in-work-poverty-trends> (accessed 22 September 2024).

Parent and carer health						
36	Parental mental health/well-being	Y (<1y)	<p>Perinatal maternal mental health including depression and anxiety<sup>53</sup></p> <p>Parental stress and mental wellbeing<sup>56</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on the estimated number of women with adjustment disorders and distress in perinatal period, mild-moderate depressive illness and anxiety in perinatal period, chronic SMI in perinatal period, PTSD in perinatal period and severe depressive illness in perinatal period.</p> <p><i>Local Vulnerability Profiles</i> Publishes data on Children In Need episodes for children aged 0-4 at 31st March 2019 with mental health of/substance misuse by a parent/someone else in household identified as a factor at assessment (excluding looked after children), modelled pre-C-19 prevalence of 0-4s in households where parent suffering alcohol/drug dependency and modelled pre-C-19 prevalence of 0-4s in households where parent suffering severe mental health problem.</p> <p><i>Understanding Society</i> Publishes survey data from parents on their mental health including type of condition and activities limited because of that condition.</p>	Increased rates of reported poor mental wellbeing can be linked to increased health-seeking behaviours, making changes to data on this indicator difficult to interpret <sup>103</sup> . Changes in rates of reporting can also be linked to service provision and capacity.	9
		N	<p>Parental stress and mental wellbeing<sup>56</sup></p> <p>Definition unclear<sup>49, 52, 57, 59</sup></p> <p>People with a low satisfaction score, low worthwhile score, low happiness score or high anxiety score<sup>44</sup></p> <p>Proportion of mothers screened for depression at 6-8wk HV appt<sup>53</sup></p> <p>All aspects of general wellbeing, including emotional wellbeing, mental health difficulties, sense of self and self-care &amp; wellbeing<sup>51</sup></p>	There is currently no available and no validated tools to measure further definitions of this indicator at a population level.		

<sup>103</sup> Cavallaro, F., Clery, A., Gilbert, R., van der Meulen, J., Kendall, S., Kennedy, E., ... & Harron, K. Evaluating the real-world implementation of the Family Nurse Partnership in England: a data linkage study. *Health and social care delivery research*, 2024;12(11), 1-223.

37	Parent physical health and disability	Y (<4y)	<p>Definitions includes long-standing health conditions requiring management and physical disabilities requiring adaptations<sup>49</sup></p> <p>Definition unclear but includes maternal vitamin and mineral status, diet quality, nutritional intakes, need for treatments, interventions, medications and supplements<sup>59</sup></p> <p>Definition unclear<sup>57</sup></p> <p>All aspects of physical health including pain, sleep and stress<sup>51</sup></p>	<p><i>Local Vulnerability Profiles</i> Publishes data on Children In Need episodes for children aged 0-4 at 31st March 2019 with a parent or someone else in the household's disability identified as a factor at assessment (excluding looked after children)</p> <p><i>Understanding Society</i> Publishes survey data from parents on their physical health including type of condition and activities limited because of that condition.</p>	Changes to this indicator might be difficult to interpret as changes in rates of disability do not necessarily mean changes in rates of parental health - parents can be disabled and in good health.	4
38	Parental weight	Y (pre-birth)	<p>Obesity at booking<sup>44</sup></p> <p>Gestational weight change<sup>59</sup></p> <p>Parent or family obesity<sup>57</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on percentage of pregnant women who are obese (BMI&gt;=30kg/m2) at the time of booking appointment with midwife (from the Maternity Services Dataset)</p> <p><i>Understanding Society</i> Publishes survey data from parents on their physical health including whether a doctor has ever told them they're very overweight (a BMI of 40 or above).</p>	It is unclear to what extent young children's health is affected by their parents' weight. There is evidence to suggest parental overweight can be an indicator of children's overweight, but it is not clear if this is relevant for children <3y <sup>104</sup> .	3
39	Parental activity level	Y (not for parents of <3y specifically)	<p>Percentage of physical active and inactive adults<sup>44</sup></p>	<p><i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on overall % of physical active and inactive adults (19+years) (not available for parents of children &lt;3y specifically)</p> <p><i>Understanding Society</i> Publishes survey data from parents on the amount of vigorous and moderate activity they have done in the last 7 days.</p>	There is evidence to suggest a positive relationship between parental activity level and children's activity levels, but it is not clear if this is relevant for children <3y <sup>105</sup> .	1

<sup>104</sup> Lee, C.Y., Ledoux, T.A., Johnston, C.A. et al. Association of parental body mass index (BMI) with child's health behaviors and child's BMI depend on child's age. BMC Obes. 2019; 6, 11. <https://doi.org/10.1186/s40608-019-0232-x>

<sup>105</sup> Moore LL, Lombardi DA, White MJ, et al. Influence of parents' physical activity levels on activity levels of young children. The Journal of Pediatrics. 1991;118:215–9. doi: 10.1016/S0022-3476(05)80485-8

40	Eating behaviours & environment	N	<p>Definition unclear but includes feeding environment, parental modelling of eating behaviour, pressurising child to eat, portion size, child self or assisted feeding, parental perception of food preferences, parent perception of food safety<sup>55</sup></p> <p>Definition unclear but includes maternal vitamin and mineral status, diet quality, nutritional intakes, need for treatments, interventions, medications and supplements<sup>59</sup></p>	<p><i>Understanding Society</i> Publishes survey data on parents' preferences for different food types including the number of vegetables eaten per day.</p>	<p>It is unclear the extent to which parental eating behaviours affect children aged &lt;3. For example, parental responses to the child's eating behaviour may be more influential at this young age<sup>106</sup>.</p>	2
41	Parent alcohol or substance use (post-pregnancy)	Y (<4y)	<p>Drug/alcohol use defined using screening tools AUDIT, AUDIT-C and ASSIST-Lite, SADQ<sup>49</sup></p> <p>Proportion of mothers of children aged 0-4 reporting alcohol/drug abuse<sup>47</sup></p> <p>Definition unclear<sup>57</sup></p>	<p><i>Local Vulnerability Profiles</i> Publishes data on CiN episodes for children aged 0-4 at 31st March 2019 with mental health of/substance misuse by a parent/someone else in household identified as a factor at assessment (excluding looked after children) and modelled pre-C-19 prevalence of 0-4s in households where parent suffering alcohol/drug dependency.</p> <p><i>Understanding Society</i> Publishes survey data from parents on the use of drugs and alcohol in the previous year and current alcohol use. (Note: small sample size for drug use).</p>	<p>Due to stigma surrounding alcohol and substance use, data collected may be unreliable.</p>	3
<b>Other parent and carer circumstances</b>						
42	Parental quality of life	N	<p>Definition unclear but overarching concept includes disease specific and health-related QoL, sleep quality and parent-infant bonding and parental stress<sup>55</sup></p> <p>Definition unclear but includes all aspects of general wellbeing (inc. emotional wellbeing and overall quality of life)<sup>51</sup></p>	<p>There is currently no available data collected specifically to measure quality of life or family life. The five question Quality of Life tool<sup>58</sup> has been used in previous studies and could be explored in future research<sup>107</sup>.</p>	<p>Parental quality of life may include their mental and physical health, parent-child relationship, conflicts within personal relationships, and social support. If available, changes to data for this indicator would likely indicate an improvement in child wellbeing.</p>	2

<sup>106</sup> Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors Influencing Children's Eating Behaviours. *Nutrients*. 2018;10(6):706. doi: 10.3390/nu10060706. PMID: 29857549; PMCID: PMC6024598.

<sup>107</sup> Howard, L. M., Trevillion, K., Potts, L., Heslin, M., Pickles, A., Byford, S., ... & Abel, K. M. Effectiveness and cost-effectiveness of psychiatric mother and baby units: quasi-experimental study. *The British Journal of Psychiatry*, 2022;221(4), 628-636.

43	Parental imprisonment	N	Definition unclear <sup>57</sup>	The Ministry of Justice has estimates of the number of parents in prison <sup>108</sup> derived from linked His Majesty's Prison and Probation Service and HMRC data. Data is not disaggregated by age of child.	Parental imprisonment is recognised as having a significant impact on children's outcomes, particularly if the mother is imprisoned <sup>109</sup> .	1
44	Parental literacy and numeracy	N	Basic skills, particularly literacy and numeracy <sup>56</sup>	<i>Understanding Society</i> Publishes survey data from parents on whether they have difficulties reading, speaking or writing English. Publishes data on whether they were unable to complete certain survey assessments due to their literacy and/or numeracy (note: small sample sizes).	It is unclear to what extent children's outcomes are affected by their parents' and carers' literacy and numeracy levels. There is strong evidence to suggest the home learning environment is related to children's development <sup>110</sup> , but not parental literacy and numeracy levels as independent indicators.	1
45	Parent language (levels of pregnant women with little or no spoken English)	N	Proportion of pregnant women with little or no spoken English ability <sup>47</sup>	<i>Understanding Society</i> Publishes survey data from parents on their language including English as a first language and if they have difficulties reading, speaking or writing in English.	It is unclear to what extent children's outcomes are affected by their mother's level of English. Differences in outcomes may be more reflective of service performance e.g. the availability of translators, outreach programs into the local community.	1
46	Parent aged under 20 at time of birth	Y (pre-birth)	Proportion of mothers under 20 years when giving birth <sup>43</sup>	<i>Fingertips (Public Health Outcomes Framework)</i> Publishes data on mothers aged <20 at antenatal booking (from the Maternity Services Dataset) and the percentage of delivery episodes where the mother is aged under 18 years.  <i>Understanding Society</i> Publishes data on age of parent when child born.	There's evidence to suggest the association between teenage parenthood and child outcomes is not casual but confounded by environmental and/or genetic factors) <sup>111</sup> .	1

<sup>108</sup> Ministry of Justice. Official Statistics in Development: Estimates of children with a parent in prison. 2024. <https://www.gov.uk/government/statistics/estimates-of-children-with-a-parent-in-prison/official-statistics-in-development-estimates-of-children-with-a-parent-in-prison> (accessed 21 September 2024).

<sup>109</sup> Beresford S, Loucks N, Raikes B. The health impact on children affected by parental imprisonment. *BMJ Paediatr Open*. 2020;4(1):e000275. doi: 10.1136/bmjpo-2018-000275

<sup>110</sup> Lehl, S., Evangelou, M., & Sammons, P. The home learning environment and its role in shaping children's educational development. *School Effectiveness and School Improvement*. 2020;31(1), 1–6. <https://doi.org/10.1080/09243453.2020.1693487>

<sup>111</sup> Pogarsky G, Thornberry TP, Lizotte AJ. Developmental Outcomes for Children of Young Mothers. *Journal of Marriage and Family*. 2006;68:332–44.

47	Parenting capacity/skills	N	Reading, talking and singing to babies and toddlers <sup>53, 56</sup>	<i>Understanding Society</i> Publishes data on specific aspects of the home environment such as how often a parent talks with and reads to their child.	If available, data on this indicator would likely be difficult to interpret and subject to reporting biases and subjective assessments. For example, an increase in a parents' knowledge of the parental role would not necessarily translate to better outcomes for children.	4
		N	<p>Praising and positively engaging with babies and toddlers<sup>53, 56</sup></p> <p>Knowledge, application of good parenting, general parenting behaviours, practices and sensitivity<sup>51, 56</sup></p> <p>Definition unclear<sup>57</sup></p> <p>Parents' thoughts, feelings, knowledge and understanding of the parental role<sup>51</sup></p>	There is currently no available and no validated tools to measure further definitions of this indicator at a population level.		

**Colour coding key<sup>a</sup>**

	= Data for this indicator is already collected and used in the Public Health Outcomes Framework (Fingertips)
	= Data for this indicator is already collected and solely used in The Children's Commissioners' Local Vulnerability Profiles

## Description of data sources

### Fingertips

From the Department of Health and Social Care, the Fingertips dashboard is a large public health data collection organised into themes around health and wellbeing. It was designed to support the delivery of the Public Health Outcomes Framework, Joint Strategic Needs Assessments and commissioning to improve health and wellbeing and reduce inequalities. It covers a range of topics and indicators including birth outcomes, breastfeeding rates and mental health, and includes indicators grouped into four domains:

1. Wider determinants of health
2. Health improvement
3. Health protection
4. Healthcare and premature mortality

Data is reported at an area (e.g., counties, NHS boards) and national level. See here for further details: <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>

### Understanding Society

Understanding Society (the UK Household Longitudinal Study) is a longitudinal household survey conducted annually since 2009. Approximately 40,000 UK households are included each year, with all members of a household interviewed about a range of topics including family life, health, education and income. Parents are asked questions about their children and newborn children are included in a household's sample at the next opportunity following their birth. The Understanding Society main survey sample consists of a large sample of the general population plus an ethnic minority boost sample, the former British Household Panel Survey sample (Understanding Society's predecessor) and an immigrant and ethnic minority boost sample.

Data is available at an individual and household level. See here for further details: <https://www.understandingsociety.ac.uk/>

### Local Vulnerability Profiles

Developed during the height of Covid-19 pandemic, Local Vulnerability profiles were created by The Children's Commissioner to help national government and councils identify how many vulnerable children there were in each local authority area. The data still fulfils that purpose today and contains local-authority level data on topics of importance to children including domestic abuse, housing and parental mental health.

Data is reported at a local authority level. See here for further details:

<https://www.childrenscommissioner.gov.uk/vulnerable-children/local-vulnerability-profiles/#:~:text=It%20provides%20a%20way%20for%20their%20responses%20to%20Covid%2D19>

### Social Care National Dashboard

The Department for Education's Children's Social Care National Dashboard builds on the Children's Social Care National Framework (National Framework). It is intended to provide insight and learning to members of the public and those working in, with and around children's social services by providing accessible, up-to-date data on children in social care. Data is grouped into four outcomes:

- Children, young people and families stay together and get the help they need, which includes indicators around family stability and child wellbeing and development
- Children and young people are supported by their family network, which includes indicators around families engaging and receiving support from their family network
- Children and young people are safe in and outside of their home, which includes indicators around child safety, abuse and neglect
- Children in care and care leavers have stable, loving homes, which includes indicators round child wellbeing and quality of life

This data is published at a local authority level. Further details can be found here:

<https://www.gov.uk/government/consultations/childrens-social-care-national-framework-and-dashboard>

## Crime Survey for England and Wales

The Crime Survey for England and Wales is a longitudinal household survey conducted annually. About 75,000 households in England and Wales are invited to take part each year, with about three quarters agreeing. One randomly selected member of a household is interviewed about their experiences of and perceptions of crime in the last 12 months and asked to provide information such as age, education and employment.

Data is reported at an individual and household level. See here for further details:  
<https://www.crimesurvey.co.uk/en/index.html>

## The National Child Mortality Database (NCMD)

The NCMD collates data on all children in England who die before their 18th birthday from child death overview panels, who are local statutory panels responsible for carrying out a child death review process whenever a child dies in their area. It is an NHS-funded programme delivered by the University of Bristol. It collects comprehensive data on circumstances of children's deaths to inform service improvement. See here for further details:

<https://www.ncmd.info/about/>

## Infant Feeding Survey

Funded by the Department of Health and Social Care, the Infant Feeding Survey was conducted every five years between 1975 and 2010. Since 2010 the latest survey is the Infant Feeding Survey 2023 which was run by Ipsos. It explores infant feeding practices in England in the first year of a child's life, asking mothers about topics such as breastfeeding, use of formula, perceptions of feeding and weaning. Approximately 20,000 mothers were invited to take part in 2023.

Data is reported at an individual level. See here for further details:

<https://infantfeedingsurvey.ipsos.com/2023/>

## The National Child Measurement Programme

NHS England's National Child Measurement Programme measures the height and weight of all children aged 4 to 5 in state-maintained schools. The data is collected to support national and local public health initiatives.

Data is reported at a national and local level. See here for further details:

<https://digital.nhs.uk/services/national-child-measurement-programme/>

## The KANTAR Dataset

KANTAR collates data on household grocery purchasing by compiling data from the UK's biggest supermarket and grocery retail chains. It links this data to panel data from ~30,000 British households capturing food usage within the home. For further details see here:

<https://www.kantar.com/solutions/consumer-and-shopper-behaviour/#tabstrip-panel2>

## Community Services Data Set (CSDS)

NHS Digital extracts clinical and operational data on children and adults from community services such as health centres, Sure Start centres, day care facilities, schools or community centres or mobile facilities.

This data is available via the CSDS. Data collated includes personal and demographic data, social and personal circumstances, breastfeeding and nutrition information, care event and screening activity and diagnoses, including long-term conditions and disabilities. Data is available for secondary uses such as research. There are known issues with data completeness<sup>112</sup> and this dataset is classified as 'Experimental' by NHS England (in 2024).

See here for further details:

<https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set>

## Maternity Services Data Set (MSDS)

NHS Digital extracts clinical and operational data about activity carried out by Maternity Services relating to a mother and baby(s). This data is available via the MSDS. Data collated includes mother's details, mother's booking, pregnancy and diagnosis details, care contacts and activities, mother's labour and activity details, anonymous assessments and findings, baby's details and hospital provider spells (inpatient stays in hospital during the pregnancy). Data is available for secondary uses such as research. There is a data dashboard giving trends in data completeness within MSDS over time<sup>113</sup>. See here for further details: <https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/maternity-services-data-set>

## English Housing Survey

The English Housing Survey is a national survey commissioned by the Ministry of Housing, Communities and Local Government (MHCLG) and delivered by the National Centre for Social Research. It collects information about people's housing circumstances, including tenure type and composition and the conditions and energy efficiency of housing in England. Approximately ~10,000 households take part each year and data are published annually. See here for further details: <https://www.gov.uk/government/collections/english-housing-survey>

## Adults People and Nature Survey for England

Every month Natural England ask approximately 2000 adults about their general experiences of green and natural space in the Adults People and Nature Survey for England. Approximately 50% of the sample is eligible to be asked about their children's experiences of green and natural space. Data are collected via an online panel of adults aged 16 years and older and published approximately quarterly. See here for further details: <https://www.gov.uk/government/collections/people-and-nature-survey-for-england>

<sup>112</sup> Clery A, Bunting C, Liu M, et al. Can administrative data be used to research health visiting in England? A completeness assessment of the Community Services Dataset. International Journal of Population Data Science Journal Website: [www.ijpds.org](http://www.ijpds.org). 2024;9. doi: 10.23889/ijpds.v9i2.2385

<sup>113</sup> NHS England. Maternity Services Data Set (MSDS) data quality dashboard. <https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/maternity-services-data-set/guidance/data-quality-dashboard> (accessed 21 September 2024).

## Commentary on deprioritised indicators

### SAFE

#### Family and social relationships (conflict/stress)

Five publications recommended family and social relationships, capturing conflict and stress in relationships, as an indicator. Two defined this as conflict within the family that is frequent, intense or poorly resolved and affecting the child, two as the quality of family life including stress and relationships with parents, carers and siblings and one paper had an unclear definition. There is currently no available data collected specifically to measure quality of life or family life. The five question Quality of Life tool<sup>114</sup> could be explored in future research, however it is unclear whether parental reporting of this indicator using a Quality of Life measure would be an appropriate proxy to determine quality of life for a child <3y. Data from FamilyMan (the Family Courts' Case management system) and private law courts could be an alternative source of data and could be used to measure custody arrangements and resulting conflicts for the proportion of children that come into contact with the Family Courts. However, this data would miss the majority of family conflict/stress in the population.

### HAPPY

#### Quality of life (overall quality including physical wellbeing)

Quality of life was recommended as an indicator in one paper. There are available tools that might be used to capture data at a population-level but more research would be needed to ascertain the feasibility of this and acceptability to families and professionals. The EuroQoL EQ-5D-5L tool<sup>115</sup> has been used to measure patients' self-reported quality of life in health research<sup>116</sup> and a study comparing outcomes for mothers admitted to psychiatric Mother and Baby

Units<sup>117</sup>. There are also health-related quality of life tools available for the children <5y, completed by parents and carers as proxies<sup>118</sup>. However, it is unclear how accurately these measures would capture the child's experience.

#### Play

Play was included as a recommended indicator in two publications, with a broad definition of children having access to resources and spaces that support play e.g. play groups. 'Play' is a multi-dimensional activity and there are different types of play that children engage in, including adult-led, child-led, parallel play. Play is an integral part of the formation of early parent-child relationships, taking the form of playful interactions and playfulness within communication<sup>119</sup>. One key informant noted that some parents do not feel comfortable engaging in play and would benefit from this being modelled to them in 'stay and play' groups in the local community. There is currently no data collected at a population-level measuring the amount of time spent in play, quality of play, or access to resources that support play. It is possible to analyse the number of children's centres available in an area at a given time, but this does not identify the quality of play, or frequency and quality of parent-child playful interactions.

### HEALTHY

#### Weaning

One publication recommended weaning as an indicator and defined it as encompassing both the timing of weaning and the introduction to appropriate foods. One expert reiterated the importance of capturing the type of foods babies are weaned on to, not just age of weaning. There are no measures of weaning at a population level. There is also no strict guidance on the age at which babies should be

<sup>114</sup> Mansukoski L, Albert A, Vafai Y, et al. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing. *International Journal of Environmental Research and Public Health*. 2022;19:7947. doi: 10.3390/ijerph19137947

<sup>115</sup> EQ-5D-5L. EuroQoL. <https://euroqol.org/information-and-support/euroqol-instruments/eq-5d-5l/> (accessed 28 September 2024).

<sup>116</sup> Jankowska A, Młyńczak K, Golicki D. Validity of EQ-5D-5L health-related quality of life questionnaire in self-reported diabetes: evidence from a general population survey. *Health Qual Life Outcomes*. 2021;19:138. doi: 10.1186/s12955-021-01780-2

<sup>117</sup> Howard LM, Trevillion K, Potts L, et al. Effectiveness and cost-effectiveness of psychiatric mother and baby units: quasi-experimental study. *Br J Psychiatry*. 2022;221:628–36. doi: 10.1192/bjp.2022.48

<sup>118</sup> Germain N, Aballéa S, Toumi M. Measuring the health-related quality of life in young children: how far have we come? *J Mark Access Health Policy*. 2019;7:1618661. doi: 10.1080/20016689.2019.1618661

<sup>119</sup> Yiran Zhao V, Kulkarni K, Gibson J, et al. Introducing the Play in Education, Development and Learning (PEDAL) Research Centre. *International Journal of Play*. 2019;8:308–19. doi: 10.1080/21594937.2019.1684144

weaned and what food they should be weaned on to, which makes population measurement difficult. The Infant Feeding Survey collected data on the timing of when babies are introduced to solid foods and type of foods introduced, however this data is only been collected every 5 years and it's unclear whether the survey will continue after 2023.

### **Sleep quality and duration**

One publication recommended sleep quality and duration as an indicator. There is currently no data available at a population level to measure this, but Understanding Society publishes data from parents on how long it takes their newborn to settle into sleep and the number of times they wake in the night.

### **Crying/consolability**

One publication recommended crying and/or consolability as an indicator. Feedback from experts highlighted that this indicator could potentially problematise normal infant behaviour and contribute to parents' feelings of guilt or shame. However, one expert suggested that this indicator could be used to gain insight into the individual's experience of parenting, such as their stress levels or lack of sleep. There is no data available to measure this at a population-level, but qualitative data may be available in health visitor records.

## **DEVELOPING**

### **Connected to family friends and culture**

This indicator was recommended in three publications, one of which had a particular focus on indigenous people being able to celebrate their culture. Connections to family and friends can be seen as a component of social and emotional development and family relationships, which are included in the main Table of Indicators. For the 0-2y population, this indicator may also include opportunities for age-appropriate stimulation and engagement in community events and celebrations.

## **EXTERNAL**

### **Employment**

Six publications recommended parent employment as an indicator. Definitions of employment varied across these publications, for example, one defined it as parents accessing good work or developing skills needed for employment, one as children in families with workless adults and three publications did not include any definition. Data on employment is collected and recorded in several existing population-level frameworks. Fingertips publishes data on the percentage of people in employment (16-64 years) and the Children's Commissioner's Local Vulnerability Profiles publishes data on the estimated local unemployment rate, however both data are not available for parents of children <3y specifically. In contrast, the Office for National Statistics produces annual estimates of the number of children living in households in the UK where all the adults have not worked for at least 12 months, disaggregated by age of child, and Understanding Society provides employment data for parents of children <3y, though this would need to be modelled to produce population estimates. Despite the availability of data for this indicator, increased employment rates for parents of children <3y do not necessarily translate to improved outcomes for children. In-work poverty rates are high and rising, particularly for families with children, and employment rates might rise due to parents working than one job, which might detrimentally impact child outcomes depending on childcare arrangements and the time this allows families to spend together<sup>120</sup>.

### **Parenting capacity/skills**

Four publications recommended parenting capacity/skills as an indicator. These publications included defined of parenting capacity/skills in different ways; two publications defined it as reading, talking and singing to babies and toddlers, whilst a further publication defined it as parents' thoughts, feelings, knowledge and understanding of the parental role. This indicator was not discussed during our expert consultations.

Whilst Understanding Society publishes data on specific aspects of the home environment, such

<sup>120</sup> The Health Foundation. In-work poverty trends. 2024.

<https://www.health.org.uk/evidence-hub/money-and-resources/poverty/in-work-poverty-trends> (accessed 28 September 2024).

as how often a parent talks with and reads to their child, there is currently no available and no validated tools to measure further definitions of parenting capacity/skills at a population level. If available, data on this indicator would likely be difficult to interpret and subject to reporting biases and subjective assessments. For example, an increase in a parents' knowledge of the parental role would not necessarily translate to better outcomes for children.

### **Parent literacy and numeracy**

One publication recommended parental literacy and numeracy as an indicator, defined as parents having 'basic skills, particularly literacy and numeracy'. Parent language is not collected at a population level and would be difficult to collect in a standardised way at a population level; however, Understanding Society has survey data from parents on whether they have difficulties reading, speaking or writing English and whether they were unable to complete certain survey assessments due to their literacy and/or numeracy. The validity and utility of this data for this purpose would need further exploration, particularly given small sample sizes.

### **Parent language**

One publication recommended parent language as an indicator, defined as the proportion of pregnant women with little or no spoken English ability. Parent language is not collected at a population level; however, Understanding Society has survey data from parents on their language including English as a first language and if they have difficulties reading, speaking or writing in English, which could be modelled to produce population-level estimates.

Indicators not identified by the literature

Indicator	Importance	Further notes
ACES (capturing parental separation/ abandonment)		Included in excluded paper.
(Gross and fine) motor skills	Several experts and the research team noted that indicators specifically capturing just gross and fine motor skills were not identified in our study but important for child development at this age.	It is important to note though that motor skills were captured in definitions of the 'Overall development' indicator identified by and included in this study.
Access to parental leave and pay	One expert stated that access to parental pay, as well as leave, is an important indicator to measure. Statutory maternity leave is currently 52-weeks whereas statutory maternity pay is 39-weeks <sup>121</sup>	
Support and opportunities for parents to engage in play	Two experts stated that for the 0-2 age range, parental involvement in play is important. This expert stated that many parents do not feel comfortable engaging in play and might benefit from local Stay and Play sessions.	
Intergenerational trauma	One expert stated that the influence of generational trauma, previous parental trauma and parental ACEs are key factors influencing the health and wellbeing of children 0-2y via a parent's ability to attune to a child's emotions, parent-child attachment and a parent's ability regulate their own emotions.	
Emotional safety	One expert stated that emotional safety is an important aspect of safety for a child aged 0 to 2 years old.	The literature review predominantly identified indicators around physical safety.
Maternal morbidity/mortality	DHSC officials noted that our literature review did not identify studies that included any indicators around maternal morbidity/ mortality, despite being important to child development. One expert also stated that maternal mortality is extremely important to child health, wellbeing and development and should be included in this framework.	Comment from DHSC official during study knowledge exchange
Domestic abuse during pregnancy	DHSC officials noted our literature review did not identify studies that included any indicators around abuse during pregnancy, despite being important to child development. One expert also stated that domestic abuse during pregnancy is extremely important to child health and wellbeing and should be included in this framework.	Comment from DHSC official during study knowledge exchange

<sup>121</sup> UK Government. Maternity pay and leave. <https://www.gov.uk/maternity-pay-leave> (accessed 21 September 2024).

Formula feeding inc responsive feeding, safe preparation, appropriate formula milks at the right ages	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around formula feeding, despite being important to child development.	Comment from DHSC official during study knowledge exchange
Food types introduced when weaning	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around food types introduced during weaning, despite being important to child development.	Comment from DHSC official during study knowledge exchange
Growth trajectory	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around growth trajectories from birth to age 3, despite being important to other aspects of child development.	Comment from DHSC official during study knowledge exchange
Rates of polio and measles cases	DHSC officials noted following initial data extraction our literature review did not identify studies that included any indicators around rates of polio and measles cases and immunisations for polio and measles, despite rising rates of cases of both in England.	Comment from DHSC official during study knowledge exchange
Parental disability	Some experts stated that parental disability is distinct from parental health, as someone may have a disability but be in good health. Parental disability may affect how they access services for their health, income level and stress within the household.	
Multivitamin (and particularly vitamin D) uptake	One expert stated that access to and take up of multivitamin and vitamin D supplements, supplied universally by health visitors, are important for overall child health.	
Parental mood/mental health/ wellbeing during pregnancy	One expert stated that this is important for overall child health and development prenatally and should be included as an indicator.	
Discrimination based on parent sexual and gender identity and same-sex parenthood	One expert noted that, as with racial discrimination, parents can be discriminated against based on their sexual and gender identity and this could, in turn, influence their child's health and wellbeing <sup>122</sup> .	

<sup>122</sup> Mazrekaj, D., Fischer, M. M., & Bos, H. M. Behavioral outcomes of children with same-sex parents in the Netherlands. *International journal of environmental research and public health*. 2022;19(10), 5922.

Table of service performance indicators

Key principle	Included publications	Definition in included publications	No. of publications
<b>Reach across the spectrum of child and family need</b> <i>Are universal services reaching all pregnant women, babies and young children for health promotion and universal support and in order to identify any additional need?</i> <i>Are targeted services reaching a high proportion of pregnant women, babies and children who need their help, including non-statutory children's services?</i>			
Access to early education and care (childcare)	<ol style="list-style-type: none"> <li>1. South Australia's Outcomes Framework for Children and Young People (Government of South Australia, 2023)</li> <li>2. Developing an early years Outcomes Framework using area-level routine data (Bonin, Matosevic &amp; Beecham, 2016)</li> <li>3. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing (Mansukoski et al., 2022)</li> <li>4. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</li> <li>5. National Supporting Families Outcome Framework (Ministry of Housing, Communities and Local Government, 2022)</li> <li>6. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (Born in Bradford, 2023)</li> </ol>	<p>Early education services (1,2) and access to education (no further definition given) (3); Percentage of children aged 2y benefiting from funded early year education (4); Taking up 2y entitlement or 3–4y universal early years entitlement (5); Proportion of children eligible for nursery at 2y and 3y who take up childcare offer (6)</p> <p>Childcare services (no further details given) (1)</p>	6
Access to / attendance at antenatal and postnatal healthcare appointments	<ol style="list-style-type: none"> <li>1. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review (Musgrove et al., 2022)</li> <li>2. South Australia's Outcomes Framework for Children and Young People (Government of South Australia, 2023)</li> <li>3. National Supporting Families Outcome Framework (Ministry of Housing, Communities and Local Government, 2022)</li> <li>4. Public Health Outcomes Framework 2019/20: a consultation (Public Health England and Department of Health and Social Care, 2023)</li> </ol>	<p>Timing of first antenatal maternity services contact: Gestational age at first antenatal visit captured under broad outcome of 'prenatal and antenatal care' (1); Proportion of women attending a first antenatal visit in the first 14 weeks of pregnancy (2)</p> <p>Receipt of universal health visiting contacts: Attends 2-year universal health visitor review (3); New birth visits (Percentage of completed New Birth Visits) (4)</p>	4

Access to hospital services	<p>1. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review (Musgrove et al., 2022)</p> <p>2. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (Born in Bradford, 2023)</p>	<p>Definition unclear but includes hospital admission/duration and length of hospital stay, which can depend on available beds and hospital thresholds as well as the severity of illness or injury in a child (1)</p> <p>Rate of children attending A&amp;E (3)</p>	3
Identification of SEND needs/disabilities and access to provision for SEND needs/disabilities	<p>1. National Supporting Families Outcome Framework (Ministry of Housing, Communities and Local Government, 2022)</p> <p>2. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (Born in Bradford, 2023)</p> <p>3. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review (Musgrove et al., 2022)</p>	<p>Child's needs appropriately assessed and suitable support in place, family engaging with support and a trusted relationship between the team and family (1)</p> <p>Proportion of children with an EA1 notification (2)</p> <p>Supporting children with impairment to their physical function and disabilities, including cerebral palsy, motor impairment, fine motor impairment, gross motor functions (3)</p>	3
Capacity and reach of statutory children's social care services (i.e. section 47, child protection, children in care)	<p>1. Children's Social Care National Framework (Department for Education, 2023)</p> <p>2. Outcomes taxonomy for child and family-focused interventions for domestic violence &amp; abuse, and child maltreatment (Powell et al., 2021)</p> <p>3. How do we know if children's social care services make a difference? Development of an outcomes framework (LaValle, Hart and Holmes, 2019)</p> <p>4. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</p>	<p>Rate and number of section 47 investigations; Rate of section 47 investigations which result in an initial child protection conference; Rate of new child protection plans; Rate of new entrants to care; Rate of assessments completed; Rate of children in care (1)</p> <p>Number of children in care, service caseloads, service response, support offered, provision of early intervention, rates of child removal (2)</p> <p>Partner agencies can identify children and families in need of support, support is appropriate to the level of need (3)</p> <p>Children's social care services reach children and families who need support and offer them the level of support they're entitled to (4)</p>	4
Capacity and reach of non-statutory family support across the spectrum of need (i.e., Family Support services)	<p>1. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (Born in Bradford, 2023)</p> <p>2. Developing an early years Outcomes Framework using area-level routine data (Bonin, Matosevic &amp; Beecham, 2016)</p> <p>3. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</p>	<p>Proportion of families with child referred to Early Help (now Family Support)</p> <p>Definition unclear but states "One example is the success of pre-school programmes in improving education outcomes and preventing later criminality by targeting both cognitive and non-cognitive skills" (2)</p> <p>Improved access to Family Hub services and quality of service for families/communities (3)</p>	3

**Sub-groups – to ensure equitable reach**

*Are populations across different social dimensions reached equitably by services?*

*Are adjustments made to services to ensure equitable service reach and equitable access for children and families?*

<p>Equitable reach of universal and targeted services and up-take</p>	<ol style="list-style-type: none"> <li>1. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</li> <li>2. National Supporting Families Outcome Framework (Ministry of Housing, Communities and Local Government, 2022)</li> <li>3. Interventions to manage use of the emergency and urgent care system by people from vulnerable groups: a mapping review (Booth et al., 2019)</li> <li>4. A comprehensive health service evaluation and monitoring framework (Reeve, Humphreys &amp; Wakerman, 2015)</li> <li>5. Performance measurement and improvement frameworks in health, education and social services systems: a systematic review (Klassen et al., 2010)</li> </ol>	<p>Families able to make positive choices/improved family awareness of where to get help and confidence to ask for help, Improved access to wider info/support e.g., housing, employment, finances (1)</p> <p>Expectant or new parent/carers who require additional or specialist support (e.g., young parents, parents who have been in care, parents with learning needs) receive it (2)</p> <p>Services are tailored to individuals to reduce barriers to access (3)</p> <p>Equity of access in terms of geography, physical environment, affordability, people's needs and cultural differences (4, 5)</p>	
---	--	--	--

**Quality of services**

*Do services provide high quality care for children and families? Are children and families satisfied with the care they receive?*

<p>Effective assessment and appropriate service provision</p>	<ol style="list-style-type: none"> <li>1. Performance measurement and improvement frameworks in health, education and social services systems: a systematic review (Klassen et al., 2010)</li> <li>2. How do we know if children's social care services make a difference? Development of an outcomes framework (LaValle, Hart and Holmes, 2019)</li> <li>3. Children's Social Care National Framework (Department for Education, 2023)</li> <li>4. A comprehensive health service evaluation and monitoring framework (Reeve, Humphreys &amp; Wakerman, 2015)</li> <li>5. South Australia's Outcomes Framework for Children and Young People (Government of South Australia, 2023)</li> <li>6. Development of an outcome indicator framework for a universal health visiting programme using routinely collected data (Home et. al., 2024)</li> <li>7. An Outcomes Framework for Early Childhood in Jersey (National Children's Bureau, 2018)</li> <li>8. The power of child-centred data: The example of the Bradford 0-19 Children and Young Peoples' Outcomes Framework (Born in Bradford, 2023)</li> <li>9. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review (Musgrove et al., 2022)</li> <li>10. Public Health Outcomes Framework 2019/20: a consultation (Public Health England and Department of Health and Social Care, 2023).</li> <li>11. NHS Outcomes Framework Indicators, April 2024 release (NHS Digital, 2024)</li> </ol>	<p>Services are effective and achieve desired outcomes for clients (1)</p> <p>Effective identification of children in need (% of re-referrals of children who had not received a service and % of re-referrals of children previously subject to a CiN plan), effective identification of children at risk of harm (% of re-referrals of children who had not received a service, % of repeat S47 enquiries of children previously subject to a CP plan, % of children with repeat CP plans, rate and number of section 47 investigations and of those which result in an initial child protection conference, rate of new child protection plans, % of referrals which are repeat referrals and % of children whose plans were deescalated and did not present again with unmet needs in 2 years) and effective identification of children who cannot be cared for safely at home (% of children with unplanned admissions into care and re-admitted into care, rate of children in care and rate of new entrants to care) (2, 3)</p> <p>Preventative health services are available, and services are appropriate for community needs, preventable injuries effectively dealt with in the community (e.g., reductions in numbers of children presenting at A&amp;E, having unplanned hospitalisations or admitted to hospital or dying due to preventable accidents) (4, 5, 6, 7, 8, 11)</p> <p>Readmission to hospital and emergency readmissions within 30 days of discharge from hospital (9, 10, 11)</p> <p>Unplanned hospitalisations for chronic ambulatory care sensitive conditions and emergency admissions for acute conditions that should not usually require hospital admission (11)</p>	<p>11</p>
<p>Access to high quality health services (more generally)</p>	<ol style="list-style-type: none"> <li>1. Development of Public Health Core Outcome Sets for Systems-Wide Promotion of Early Life Health and Wellbeing (Mansukoski et al., 2022)</li> <li>2. Outcomes framework Annex to A positive approach to parenting: Part 2 of the Independent Family (Children's Commissioner, 2022)</li> </ol>	<p>Access to high quality health services, not defined (1, 2)</p>	<p>2</p>

<p>Low risk of harm from services</p>	<ol style="list-style-type: none"> <li>1. Synthesizing Core Outcome Sets for outcomes research in cohort studies: a systematic review (Musgrove et al., 2022)</li> <li>2. Important research outcomes for treatment studies of perinatal depression: systematic overview and development of a core outcome set (Hellberg et al., 2021)</li> <li>3. Pregnancy Nutrition Core Outcome Set (PRENCOS): A core outcome set development study (Killeen et al., 2023)</li> <li>4. Outcomes taxonomy for child and family-focused interventions for domestic violence &amp; abuse, and child maltreatment (Powell et al., 2021)</li> <li>5. Performance measurement and improvement frameworks in health, education and social services systems: a systematic review (Klassen et al., 2010)</li> </ol>	<p>Definition unclear but overarching concept of harm from pregnancy intervention/delivery formed from core concepts of harm to offspring from intervention, birth trauma, adverse events (1)</p> <p>Definition unclear (2)</p> <p>Definition unclear but includes pregnancy complications, delivery complications, neonatal complications, pregnancy loss or perinatal death, birth defects or congenital anomalies (may or may not be caused by interventions) (3)</p> <p>Harm from Children's Social Care Services and wider services e.g., re-traumatising effects of interventions by services (4)</p> <p>Harm to clients is reduced (5)</p>	<p>5</p>
<p>Cost-effectiveness of services</p>	<ol style="list-style-type: none"> <li>1. A comprehensive health service evaluation and monitoring framework (Reeve, Humphreys &amp; Wakerman, 2015)</li> <li>2. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</li> </ol>	<p>Services use resources in a cost-effective way to achieve desired results, are sustainable (1, 2)</p>	<p>2</p>
<p>Engagement/satisfaction in support/interventions</p>	<ol style="list-style-type: none"> <li>1. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</li> <li>2. How do we know if children's social care services make a difference? Development of an outcomes framework (LaValle, Hart and Holmes, 2019)</li> <li>3. Outcomes taxonomy for child and family-focused interventions for domestic violence &amp; abuse, and child maltreatment (Powell et al., 2021)</li> <li>4. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</li> <li>5. NHS Outcomes Framework Indicators, April 2024 release (NHS Digital, 2024)</li> </ol>	<p>Trusting relationships between child, families and staff and children and families are involved in identifying their needs and planning their support, children/parents/carers think services are responding to their needs (1, 2)</p> <p>Experience of community resources including any feelings about the local community, trust in services, evaluation of service responses, perception of stigma, satisfaction with and experience of any aspect of social services (3)</p> <p>Children and families' rights are respected and protected, they have a say in decisions that affect them, social care involvement is proportionate, services are humane and respectful (4)</p> <p>Patient experience of care and services (5)</p>	<p>5</p>

Person-centred care	<p>1. Barriers and facilitators perceived by women while homeless and pregnant in accessing antenatal and/or postnatal healthcare: A qualitative evidence synthesis (McGeough et al., 2020)</p> <p>2. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</p> <p>3. How do we know if children's social care services make a difference? Development of an outcomes framework (LaValle, Hart and Holmes, 2019)</p> <p>4. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</p>	<p>The individual's needs are considered, clients are treated with dignity and respect, and patients can access the right support at the right time (1)</p> <p>Service design/commissioning focused on family needs and outcomes (2)</p> <p>Services learn from the experiences of staff, children and families, relationship-based practice that values children and families and involves them in identifying the support they need (3)</p> <p>Services are respectful and humane, take a rights-based approach, support and empower service users (4)</p>	4
<p><b>Workforce capacity</b>  <i>Does the service have a sufficient workforce to deliver quality care?</i>  <i>Does the service workforce receive the right training and support in order to give a high quality service?</i></p>			
Workforce capacity	<p>1. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</p> <p>2. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</p>	<p>Staff retention and sufficient staff numbers (1)</p> <p>Stably employed and well-supported staff, stable workforce at different levels (2)</p>	2
Workforce skills and motivation	<p>1. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</p> <p>2. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</p>	<p>Training / CPD of staff, local capacity building, skills and confidence for whole family work (1)</p> <p>Workforce with the right skills (2)</p> <p>Motivated workforce (2)</p>	2
<p><b>Signposting for wider or specialist support</b>  <i>Do services provide information on other services that can offer different types of support or more specialist support e.g., Citizen's Advice?</i>  <i>Do services signpost to other services efficiently and effectively?</i>  <i>Is the information on other types of support or more specialist support provided by services accessible to all?</i></p>			
Availability of information for wider and/or specialist support	<p>1. Outcomes taxonomy for child and family-focused interventions for domestic violence &amp; abuse, and child maltreatment (Powell et al., 2021)</p> <p>2. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</p>	<p>The provision of relevant and appropriate support (1)</p> <p>Families able to make positive choices/ improved family awareness of where to get help and confidence to ask for help (2)</p>	

Up-take of information for wider and/or specialist support	<ol style="list-style-type: none"> <li>1. Outcomes framework Annex to A positive approach to parenting: Part 2 of the Independent Family (Children's Commissioner, 2022)</li> <li>2. Outcomes taxonomy for child and family-focused interventions for domestic violence &amp; abuse, and child maltreatment (Powell et al., 2021)</li> <li>3. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</li> <li>4. National Supporting Families Outcome Framework (Ministry of Housing, Communities and Local Government, 2022)</li> </ol>	<p>All families can access support e.g., around finances and are able to make decisions in their best interests (1)</p> <p>Access to education or training, access to and use/engagement with any community services and knowledge and understanding of any community resources, services and rights (2)</p> <p>Improved access to wider info/support e.g., housing, employment, finances (3)</p> <p>Expectant or new parent/carers who require additional or specialist support (e.g., young parents, parents who have been in care, parents with learning needs) receive it (4)</p>	4
<p><b>Processes, procedures, conditions and culture</b>  <i>Does the service operate in such a way that maximises the effective delivery of quality services for children and families?</i>  <i>Are there the right conditions and culture?</i></p>			
Service procedures, processes and operations	<ol style="list-style-type: none"> <li>1. Family hubs evaluation innovation fund: final research report (Ecorys UK, Clarissa White Research, Starks Consulting for DfE, 2023)</li> <li>2. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</li> </ol>	<p>Use of information/data (1)</p> <p>Financial circumstances of services (1)</p> <p>Adequate support infrastructure, there are complaints procedures and quality assurance processes in place (2)</p>	2
Right conditions and the right culture	<ol style="list-style-type: none"> <li>1. Performance measurement and improvement frameworks in health, education and social services systems: a systematic review (Klassen et al., 2010)</li> <li>2. How do we know if children's social care services make a difference? Development of an outcomes framework (LaValle, Hart and Holmes, 2019)</li> <li>3. Barriers and facilitators perceived by women while homeless and pregnant in accessing antenatal and/or postnatal healthcare: A qualitative evidence synthesis (McGeough et al., 2020)</li> <li>4. Factors that influence the implementation of dietary guidelines regarding food provision in centre based childcare services: A systematic review (Seward et al., 2017)</li> <li>5. Outcomes Framework: Making sure we focus on the issues that really matter (What Works for Children's Social Care, n.d.)</li> </ol>	<p>Linkages and partnerships between services and providers to support planning and high-quality service delivery, effective multi-agency working (1, 2)</p> <p>Effective leadership, leaders create the right conditions and culture that support good social work practice, corporate support enables services to work effectively (2)</p> <p>Continuous learning environment, services learn from the experience of staff, children and families, culture that support reflective learning, research, evidence-based practice, dissemination and sharing of learning and practice, workforce development (1, 2, 3, 4, 5)</p>	5

