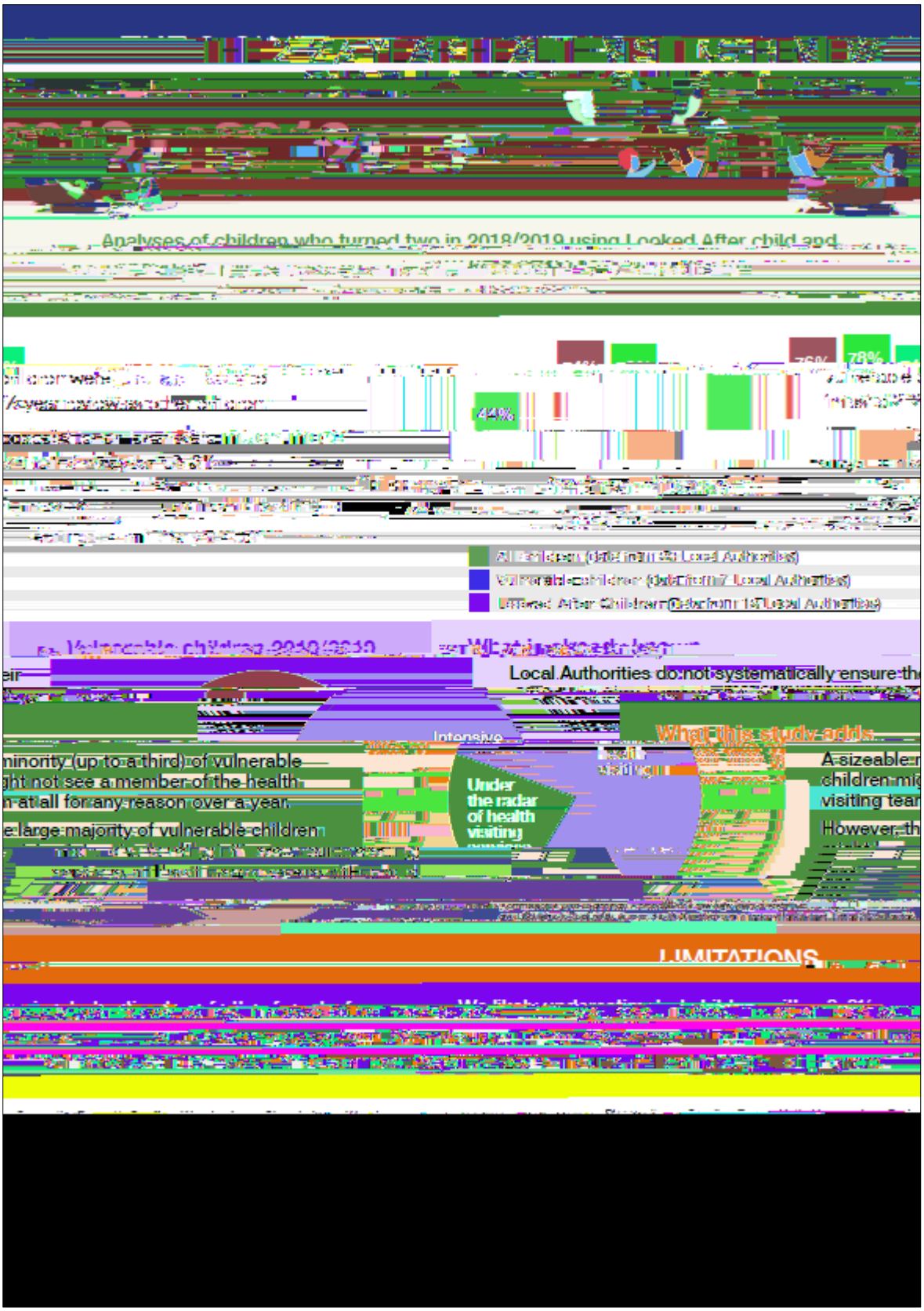
Analyses of children who turned two in 2018/2019 using Looked After child and
44%
Local Authorities do not systematically ensure th
What this study adds
Intensive
Under the radar of health visiting
A sizeable
However, th
LIMITATIONS

i) **Eligible children**: children born in 2018/19 in CSDS compared to ONS births
ii) **2-2½ year reviews:** 2-2½ year reviews in CSDS compared to PHE metrics

Local authorities whose data in the CSDS were highly correlated with the reference data were included in our research-ready subset and used for analyses of the 2-2½ year review (RQ3&4). To assess how similar children in the research-ready subset of data were to all children in England, we compared the distribution of deprivation (IMD quintile) and ethnicity for children aged <5 years in the research-ready subset of data to all of CSDS, and compared all children in CSDS born in 2018/19 to data on ethnicity and deprivation from ONS births.

Using the research-ready subset of data, we calculated the proportion of children with a 2-2½ year review recorded in the CSDS, by available indicators of need and vulnerability: safeguarding vulnerability, index of multiple deprivation (IMD) quintile, Looked After Child status and ethnicity. In the same data, we analysed whether children had a contact with health visiting services

visiting services did so multiple times in the year (3 and 5 times on average, respectively). Contacts with health visiting services for children aged 2 (at the end of 2018/19) were more often at home for Looked After children

Background

The role of health visiting

Health visitors lead the delivery of the Healthy Child Programme (0-5) an evidence-based intervention programme which focuses on promoting

The context of health visiting services

Local delivery models for health visiting services will vary depending on local needs,

needs in children. CSDS is the only child-level national source of information about health visiting (HV) but to our knowledge has not yet been used for research.[i]

Public Health England (PHE) report the percentage of children in England who receive each mandated health review and aim to use CSDS for this purpose, but quality and completeness of data in CSDS is not yet sufficient. PHE therefore set up the 'interim health visiting service delivery metrics', which we refer to as 'PHE metrics' in this report. The purpose of this data collection is to measure how many children receive each of the mandated health reviews and to evaluate the quality of data in CSDS. These aggregate data provide information on the numbers and proportion of children that received each of the five mandatory contacts (one antenatal and four in childhood) with health visitors each year across England and for each local authority. As child-level longitudinal data, CSDS has the potential to tell us much more than the PHE metrics, including which children receive each of the four mandated contacts in childhood and how patterns of health visiting contacts vary over the preschool period by local area and according to child characteristics such as deprivation and other indicators of need. We cannot use CSDS to learn about the mandated pre-birth contact, as there is no denominator for women in the last trimester of pregnancy in the dataset and the only information collected is date of contact. A key difference between CSDS and PHE metrics is that data are submitted to CSDS by service providers (e.g. NHS trusts), whereas local authorities (commissioners) submit data to PHE metrics.

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This report is a first contribution to the evidence-base about data quality in CSDS, focusing on data completeness of health visiting activity. The first step to using administrative data sources, such as CSDS, is to produce reliable and robust evidence about service activity. We use an exemplar question about the delivery of the 2-2½ year review in 2018/9, to illustrate data completeness and what the CSDS can and can't tell us about health visiting activity in this year.

The illustrative example: 2-2½ year health visitor review

The PHE metrics report that while coverage is high, not all children are receiving the five recommended mandatory contacts with health visiting services. Of all the mandatory contacts, coverage of the 2-2½ year review is lowest: according to PHE metrics 22% of eligible children in England did not have a record of this contact in 2018/19.[1] This figures hides substantial variation across the country (27-97%).[2, 25] The 2-2½ year review is the last of the mandated health reviews that all children should receive and was recently described by the Office for the Children's Commissioner (OCC) as a 'vital opportunity' to identify and meet needs of children before they reach five years of age so they can start formal education on a level footing with their peers.[2] Based on a literature review and an analysis of administrative education data, the same report concluded that 'the wider impact of starting school behind are significant and can be devastating to a children's progress and prospects.'[2, 26] The report presents stark inequalities in development aged 5, which persist into the teenage years. In areas of greatest deprivation 1 in 5 children start school 'so far behind that they will struggle to ever catch up' and 40% of the very significant development gap between disadvantaged 16-years olds and their peers has already emerged by the age of 5.[2]

It is clear that the 2-2½ year review is an important contact with health visiting services and yet, if PHE metrics are accurate, 1 in 5 eligible children do not have a 2-2½ year review. This prompts questions. Are these contacts taking place but not captured in the data? Are the children without 2-2½ year reviews the most or least disadvantaged in their local areas? If the poorest, most disadvantaged and highest need children are most likely to 'miss' their 2-2½ year review, this could indicate a missed opportunity to address inequalities in child development in the early years. Conversely, if it is the most affluent and lower need children who do not have a 2-2½ year review, this may be a result of strategic decisions to target their scarce resources to families with the most serious levels of known disadvantage and need.

In this report, we use the 2-2½ year review as an illustrative example of what we can learn about children's contacts with health visiting teams from CSDS. We investigate to what extent we can use CSDS to learn about the children who do and do not receive a 2-2½ year review, including whether they receive any other health visiting support in their second year of life.

As we were writing this report, the Office of the Children's Commissioner published its own report on the early years, also focusing on the 2-2½ year review (17th July 2020).[26] For her report, the Children's Commissioner used her unique statutory powers to request data from all 152 local authorities in England.[27] In the discussion of this report, we compare the learning from the OCC report with our findings from CSDS.

Research Questions

1. How does data in CSDS compare to reference data?
2. Can we identify a 'research-ready' subset of CSDS for research on the 2-2½ year review?
3. What can we learn from CSDS about the characteristics of children who rea9nf 1 0 0 1 407.14

Table 1: Comparison of new birth visits and 2-2½ year reviews recorded in CSDS versus reference data (PHE metrics and ONS births) for all of England

	Number of children (% of all eligible[1])

2. Can we identify a ‘research-ready’ subset of CSDS for research on the 2-2½ year review?

Methods

We developed and applied methods for identifying a subset of ‘research-ready’ CSDS data which was sufficiently complete to use for analyses of the 2-2½ year review. We created two indicators to measure the agreement between CSDS and reference data and then applied thresholds of data agreement to categorise local authorities as having high, moderate or low correlation with reference data (high correlation thresholds shown in Table 1). We describe data that falls within the ‘high correlation’ category as ‘research-ready’.

Table 2: thresholds for identifying research-ready ('high correlation') local authorities

Indicators

Children in the research-ready (high correlation) group were not representative of all children in terms of ethnicity. The percentage of children in the mixed, Asian, Black and other ethnicity categories was lower in the high correlation group compared to all of CSDS (Appendix 2, Table A5). This likely reflects regional differences in ethnicity. People in the Black, Asian, mixed and other ethnic groups are more likely to live in London than any other region in England, but only three London boroughs are in the high correlation subset.[28] Children in the high correlation group were similar in terms of deprivation, based on IMD quintile. Full results presented in Appendix 2, Table A5 and Table A6.

Conclusions

It is possible to identify a research-ready subset of CSDS data for analyses of the 2-2½ year review based on simple indicators of agreement with publicly available reference data. The exact criteria for identifying the research-ready dataset will vary according to the specific research question. For example, an analysis of new birth visits and 2-2½ year reviews will require a subset of data that is sufficiently complete in both these variables. Analyses that require sufficiently complete data across more variables will have a research-ready subset of CSDS that contains data from fewer local authorities.

For current years of CSDS data a research-ready subset of CSDS will

3. What can we learn from the 'research-ready' subset of CSDS about the characteristics of children who receive a 2-2½ year review?

Methods

Using the research-ready subset of data (33 local authorities), we calculated the proportion of children with a 2-2½ year review recorded in CSDS, by available indicators of need and vulnerability: safeguarding vulnerability, index of multiple deprivation (IMD) quintile, Looked After Child status and ethnicity. Box 2 lists the characteristics that are likely to result in a child having a safeguarding vulnerability recorded in CSDS, if known to health visiting services. Other relevant child characteristics were too poorly recorded to use. For example, only 3% of children had completed data for disability (this includes children recorded as **not** having a disability, Appendix 2, Table A4). Detailed methods for research question 3 are available in the Appendix 3, including the assumptions we made when deriving denominators for calculating proportions.

Results

Key findings:

We found that children with a 2-2

not explained by a high number of appointments which were scheduled but then not attended by the family (Appendix 3, Table A8).

There is uncertainty around our estimates of children with a 2-2½ year review. Using the CSDS data on completed Ages and Stages Questionnaires (ASQ), we found evidence that some 2-2½ year reviews had taken place but did not have a 2-2½ year

On the other hand, we may have over-estimated the proportion of children with any contact aged 2 as some children may be missing from CSDS altogether (i.e. not referred in to the system and not known to health visiting services). If this is the case, the true number of eligible children (denominator) may be greater than 93,525 which would decrease the proportion of all children with a contact. If this is an issue, it could only be addressed by improvements in the system which alerts local health visiting teams to children born or moving into their area.

Key finding: Unlike other children, children with safeguarding vulnerabilities and Looked After children who were aged 2 years at the end of 2018/19 and had contact with health visiting services did so multiple times in the year (3 and 5 times on average, respectively,

another in terms of deprivation, ethnicity or recorded safeguarding vulnerabilities. Differences in the proportion of Looked After Children with a record of a 2-2½ year 2 review were attenuated when other face-to-face visits were taken into account.

In this subset 2018/19 CSDS data, there was a consistently high proportion of children not receiving their 2-2½ year review, including among groups with vulnerabilities known to health visiting services. However, there is very high uncertainty about these estimates because of the specifications of the CSDS extract. It may be that a higher proportion of children are receiving the 2-2½ year review than our data suggested.

Our results suggest that Looked After Children who are engaged with health visiting services have multiple contacts a year and often at home but a lower proportion of Looked After children have a 2-2½ year review. It might be that Looked After children are less likely to have a 2-2½ year review due to placement moves or because their 2-2½y review occurs at a time when they are having other reviews from services and the carer or guardian therefore declines the 2-2½ year review.

Between 28% and 40% of all contacts with children aged 2 were at home, taking into account uncertainty caused by missing locatim

2highheat a hvery high

4. How are the 2-2½ year reviews delivered?

Methods

How do our findings about the 2-2½ year review compare to other evidence?

Other available evidence on the 2-2½ year review comprises PHE metrics, which are publicly available statistics provided by PHE, and a report by OCC published on 17th July 2020 ('the OCC report'), which also used the 2-2½ year review as an illustrative example of how young children's additional needs are identified and responded to.[2]The OCC report is based on data from 2018/19 in 148 local authorities in England, obtained using The Children's Commissioner's unique statutory powers to request data from local authorities (only 3 local authorities in England did not comply with the request).[18]

In all three reports, there is evidence that approximately 4 in 5 children received their 2-2½ year review in 2018/19: PHE metrics 78%, OCC report 81%, our analyses of 33 local authorities 74%, rising to 81% if all children aged 2 or 3 with an ASQ were assumed to have had a 2-2½ year review. It is not surprising that our data was similar to PHE metrics as that was a criteria for classifying local authorities as 'research-ready'. However, similarity between the OCC report, PHE metrics and local data from Kent and East Sussex (Appendix 1, Table A1) supports the conclusion that on average across England, approximately 1 in 5 children do not receive a 2-2½ year review.

The OCC report concludes that this 1 in 5 figure masks substantial variation across England (range 0% to 65% of children receiving a 2-2½ year review in 2018/19, see p.28 OCC report). The OCC reported that few local authorities could identify their vulnerable children in their data which groups 'missing' their 2-2½ year reviews. This implies that it is poor recording of data at a local level that is driving the highly missing data on safeguarding vulnerabilities and Looked After children in CSDS rather than problems in transferring local data to NHS Digital. We were only able to include data from 7 local authorities who had sufficiently complete data on 2-2½ year reviews and safeguarding vulnerabilities (<10% missing data). This rose to 13 local authorities for Looked After children.

The OCC requested information from Local Authorities on the proportion of their vulnerable children who had a 2-2½y review in 2018/9, using eligibility for the 2 year childcare offer, Child in Need Status and Special Educational Needs (SEN) as markers of a vulnerable child. However, a minority of Local Authorities could provide this information to the OCC which led the OCC to conclude "There is little evidence that local areas are ensuring that their vulnerable young children are checked". The sub-group analyses for vulnerable children were not presented in the report. We

children. In other words, although a substantial minority of children known to be

delivering health visiting services, both for children and families and for the staff and services.

Research using a longitudinal CSDS extract with age of child in months is needed to asc

Thirdly, we know that much abuse and neglect of children does not come to the attention of professionals and instead remains hidden.[29] The most vulnerable families are known to find it difficult to focus on their child's needs and are often less motivated to seek out and use support services. Some children might be known to be living with adversity by children's social care but there may be failures in sharing this information with the health visiting team and/or recording it using codes in local health visiting systems. We also know that other primary care health professionals (GPs) employ high threshold of certainty for coding vulnerabilities such as domestic violence when a child is not receiving statutory protection services from children's social care.[30, 31] In other words, if professionals think there may be a problem but are not certain, it is unlikely to be recorded in the system using a code that would also be used by CSDS. This means that in CSDS there will be misclassification of children living with adverse childhood experiences (i.e. vulnerable children) and Looked After children in the community as well as misclassification of the subset of these groups who are known to the health visiting team. Classifying vulnerable and Looked After children as not vulnerable or Looked After will mean that our findings under-estimate differences between vulnerable and other children, particularly if there is a high number of children with adversity known to the health visiting team who receive more than average support but do not have any vulnerability recorded using codes in local administrative data systems.

Our results cannot be generalised to all children in England for two reasons. First, children in the 33 local authorities who contributed 'research-ready' data to PHE's CSDS extract were not nationally representative in terms of ethnicity. Second, delivery of health visiting services varies substantially between local authorities and is likely associated with data completeness in CSDS so that local authorities in the research-ready (high correlation) group are probably systematically different from the other local authorities. For example, group contacts may be used more often in the local authorities that were not included based on commissioning decisions. Or it could be that the 'low correlation' group of local authorities are the ones with the most stretched services, leading to differences in service coverage and intensity as well as capacity for recording accurate data. To obtain a full picture of health visiting activity, all types of local authorities need to be investigated and this will involve a triangulation of data sources, including CSDS, Tm 0 g 0 G<y b

postcode, so could not determine whether certain postcodes were used more than expected (which would indicate use of proxy postcode).

Access to CSDS data within PHE

Evaluate the generalisability of the research subset of CSDS for each study. As data quality improves over time, generalisability and reliability will also improve.

A complete CSDS extract that includes age in months and several years of data is necessary for research into national health visiting contacts but will still not be able to answer all research questions. Researchers should also consider using local data from local authorities and CSDS data linked to other sources (e.g. Hospital Episode Statistics or social care data) to find out more about children who do not get the 2-2½ year review (or other health visiting contacts). For example, do they present at A&E with injuries im11(e(ty)8(im)-6(p)-3(rov)9(e)-3(s o)-5(v)10(e)-3(r ti)-8(m)-6(e)-3(,)8(g)4(e)-3(n)

Appendix 1: Data sources and supplementary material RQ1

metrics, which suggests that differences are due to translation of data into CSDS, rather than issues with local data collection.

Figure A1: Scatter plot of the percentage difference in number of eligible children, face-to-face new birth visits and 2-2½ year reviews in CSDS compared to reference data

LA = local authority; Eligible children = all children born in 2018/19

Table A1: The difference between CSDS and two reference data in 2018/19: PHE metrics for all children and local data from two local authorities

	Number of children recorded in			Difference		
	Local data	Reference data	CSDS	Reference vs local	CSDS vs local	CSDS vs reference
All children in England (149 local authorities)						

Appendix 2: Supplementary material RQ2

Can we identify a 'research-ready' subset of CSDS for use in research into the 2-2½ year review?

Methods

Identifying ñhigh correlationòdata for local authorities

To identify local authorities within CSDS with sufficiently complete data for research into 2-2½ year reviews, we created two indicators of how well data was recorded in CSDS and sense-checked these indicators with the research team which includes a Consultant in Public Health working with a Health Visiting Service (SB), an information analyst who manages health visiting data (GW) and the lead for PHE metrics (KT, see ‘contributor’ section). The indicators measure the agreement between CSDS and aggregate reference data (PHE metrics or ONS births). Based on these indicators, we categorised local authorities as having high, moderate or low correlation between data in CSDS and reference data.

The indicators are based on the number of eligible children and children who had 2-2½ year reviews recorded (Table A2). These indicators were selected to account for the two mechanisms of under-recording in CSDS that would affect research into health visiting activity. First, some children may be missingcontr completely from the data. If children are missing from CSDS, we do not have accurate data on how many children are eligible for health visiting and therefore do not have an accurate denominator to calculate the percentage of children who received contacts. We were able to determine whether the number of eligible children were accurate through comparisons between CSDS and ONS birth statistics. We focused on “eligible children” who were aged 0 because we did not have reliable reference data on the number of children aged 2 or 3 to compare with CSDS. Second, contacts with health visitors may be under-recorded. We were able to determine whether the number of contacts were accurate through comparisons between CSDS and PHE metrics.

Table A2: The indicators and limits for identifying high or moderate correlation local authorities in CSDS

children in other local authorities in CSDS, and to all children whether or not they were recorded in CSDS. To determine whether the subset of local authorities were representative, we focused on the IMD quintile

year olds who had their review in the previous year (2017/18) and 2 year olds who were not due their review until the following year (2019/20).

Equation 1: Estimation of the percentage of children with a 2-2½ year review

Results

Identifying ñhigh correlationòlocal authorities

Thirty-three local authorities met the high correlation criteria for research into the 2-2½ year review. These are listed in Box 2 and shown in Figure 1: Map of the 33 'research-ready' local authorities for 2-2½ year reviews in 2018/19 These groupings do not reflect the quality of local data recording for case management purposes or the quality of the health visiting service. The groupings are based solely on the correlation between the reference data and the CSDS extract.

Box 2: Local authorities that had data in CSDS with high correlation between data in CSDS and reference data based on indicators in table 2 for 2018/19

- Blackpool
- Calderdale
- Cornwall and Isles of Scilly
- Coventry
- Cumbria
- Derby
- Devon
- Dudley
- Gloucestershire
- Hampshire
- Haringey
- Hertfordshire
- Islington
- Kingston upon Thames
- Kirklees
- Knowsley
- Lincolnshire
- Liverpool
- North Somerset
- Peterborough
- Portsmouth
- Rochdale
- Sefton
- Shropshire
- Somerset
- Southampton
- St Helens
- Telford and Wrekin
- Thurrock
- Walsall
- Warrington
- Worcestershire
- York

Only 22 of the 33 high correlation local authorities (based on eligible children and 2-2½ year review) met the additional criteria for new birth visits (Table A3). If only using the eligible children and new birth visit criteria, 31 local authorities were high correlation for research into new birth visits. If criteria were applied for eligible children and all four postnatal health reviews, only 17 local authorities would be included.

Table A3: Number of local authorities included with limits applied to different contacts

Review criteria applied to	Number of local authorities
2-2½ year review	33
New birth visit	31
12-month review	41
6-8 week review	34
All four postnatal health reviews	17

The antenatal visit is not included as the contacts are not routinely recorded in CSDS; Criteria is number of children with review recorded in CSDS within +/- 15% of the number of children in PHE metrics

In general, children in the high correlation local authorities had better completed data for other variables, compared to using all of CSDS (Table A4). For example, the high correlation local authorities had better completed data on breastfeeding compared to all local authorities in CSDS (69% vs 26%). However, for the recording of safeguarding factors and whether a child was Looked After was poorer in the high correlation group than all of CSDS. This suggests the recording of these variables is independent from the recording of health visiting contacts. This may be the case if, for example, these variables are recorded at point of referral (from outside of health visiting services), rather than during the health visiting contacts. However, many variables (e.g. accommodation type) were poorly completed even in the high correlation local authorities and there may be different indicators that could be used to identify a more suitable subset for research questions focused on these areas. Information on how the variables in the table are defined are available in the CSDS Technical Output Specification.[36]

For child protection plans, immunisations and the Ages and Stages Questionnaire (ASQ), we cannot tell whether children without a record were negative or missing, as they are only recorded if a child has a child protection plan/immunisation/ASQ. However, there are national estimates that we can compare against: CSDS recorded 121,107 children with an ASQ aged 2 or 3, which is 75% lower than PHE metrics (n=479,887).[25] PHE report that 92% of children aged 1 had the DtaP / IPV / Hib vaccine (a combined vaccine that protects against diphtheria, whooping cough, Haemophilus influenzae type b and polio).[37] In CSDS, only 19% of children aged 1 had a record of any vaccine, increasing to 35% in the high correlation group. According to Children in Need statistics, 17,950 children aged 0-5 years were on a Child Protection Plan on 31st March 2019.[38] This is nearly double the 9,889 children who had a Child Protection Plan recorded in CSDS at any point during 2018/19.

Table A4

Table A5: The distribution of ethnicity and IMD for children aged less than 5 in the high correlation

Table A6: Comparison of the distribution of IMD and ethnicity recorded in local data vs CSDS for East Sussex and Barking and Dagenham

		1		1
White	21,453 (79%)	16,635 (69%)	5,786 (32%)	5,770 (32%)
Mixed	1,140 (4%)	2,585 (11%)	3,672 (20%)	975 (5%)
Asian	556 (2%)	450 (2%)	2,683 (15%)	4,230 (23%)
Black	204 (1%)	190 (1%)	1,081 (6%)	3,350 (18%)
Other	213 (1%)	260 (1%)	428 (2%)	740 (4%)
Missing	3,669 (13%)	4,145 (17%)	4,534 (25%)	3,150 (17%)
Total	27,235	24,265	18,184	18,215
1 (most deprived)	5,162 (19%)	4,840 (20%)	10,067 (59%)	10,190 (56%)
2	5,275 (19%)	4,965 (20%)	6,200 (36%)	6,815 (37%)
3	6,314 (23%)	5,840 (24%)	1,011 (6%)	1,210 (7%)

Figure A2: Percentage of children with each contact by correlation category and in PHE metrics

LAs = local authorities

Table A7: Percentage of children with each contact by correlation category and in PHE metrics

Data source	Percentage of children in 2018/19 with	
	New birth visit [1,2]	2-2½ year review [3]
PHE metrics (150 LAs)	98% (597,830 / 608,847)	78% (531,436 / 672,241)
High correlation (31/33 LAs)	91% (107,470 / 117,620)	74% (55,975 / 75,955)
High & moderate correlation (43/47 LAs)	85% (161,530 / 190,320)	69% (86,705 / 124,355)
All of CSDS (149 LAs)	29% (145,529 / 505,741)	23% (110,975 / 492,840)

[1]

Results

Table A8: Percentage of children aged 2 or 3 with a 2-2½ year review recorded as attended or scheduled by child characteristic

	Percentage of children aged 2 or 3 with a 2-2½ year review recorded [2]			
	Attended [3]		**Scheduled**[4]	
Child characteristic	% (95% CI)	Children with 2-2½ year review r		

centage of children aged with a record of a face-to-face contact in any location and at home by child characteristic

racteristic	Percentage of children aged with a record of a face-to-face contact [1]			
	In any location		At home	
	% (95% CI)	Children with a contact / children aged 2	% (95% CI)	Children with a contact / children aged 2
All children (33 LAs)	76% (75%, 76%)	70,695 / 93,525	28% (27%, 28%)	26,130 / 93,525
IMD (33 LAs)				

Table A11 Characteristics of 2-2½ year reviews by IMD for children in 33 high correlation local authorities

	Number and percentage of 2-2½ year reviews with each characteristic by IMD (95% confidence interval) [1]					
	1 (most deprived)	2	3	4	5 (least deprived)	Total
Location						

>90 min	295 2% (2%, 2%)	160 1% (1%, 1%)	125 1% (1%, 1%)	120 1% (1%, 1%)	85 1% (1%, 1%)	785 1% (1%, 1%)

References

References

13. Institute of Health Visiting, *Health visting in England: a vision for the future*. 2019: London.
14. Department of Health, *Universal Health Visitor Reviews: advice for local authorities in delivery of the mandated universal health visitor reviews from 1 October 2015*. 2015: London.
15. Health and Social Care Select Commitee, *First 1000 Days of Life*. 2018.
16. Institute of Health Visiting, *Health Visiting and the NHS in the next 10 years*. 2018: London.
17. Bryson, C., E. Smith, and J.A. Barlow, *Better Start Implementation Evaluation Workstream Report 4: Mapping the early years' ecosystem*. 2019.
18. Romanou, E. and E. Belton, *Isolated and struggling: Social isolation and the risk of child maltreatment, in lockdown and beyond*, in *NSPCC Learning*. 2020, NSPCC.
19. Office of the Children's Commissioner, *Lockdown babies: Children born during the coronavirus crisis*. 2020.
20. Best Beginnings, Home-Start UK, and the Parent-Infant Foundation, *Babies in lockdown: listening to parents to build back better*. 2020.
21. Barlow, J., et al., *The impact of the COVID-19 pandemic on services from pregnancy through age 5 years for families who are high risk of poor outcomes or who have complex social needs: Stage 2 findings [Unpublished]*. 2020.
22. Public Health England, *Rapid review to update evidence for the Healthy Child Programme 0-5*. 2015: London.
23. Asmussen, K., et al., *Foundations for life: What works to support parent child interaction in the early years*. 2016, Early Intervention Foundation: London
24. NHS Digital. *Community Services Data Set*. 2020 16/04/2020 [cited 2020 14/05/2020]; Available from: https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set.
25. Public Health England, *Health visitor service delivery metrics: 2018 to 2019 annual data*, Public Health En3.6.45 257.81 Tm 0.0196 0.388 0.757 rg

28. Office for National Statistics. *Regional ethnic diversity*. 2018 11/7/2019 3/6/2020]; Available from: https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/national-and-regional-populations/regional-ethnic-diversity/latest.
29. Gilbert, R., et al., *Recognising and responding to child maltreatment.* Lancet, 2009. **373**(9658): p. 167-80.
30. Woodman, J., et al., *A simple approach to improve recording of concerns about childmaltreatment in primary care records: developing a quality improvement intervention.* British Journal of General Practice, 2012. **62**(600): p. e478-e486.
31. Woodman, J., et al., *The GPûs role in responding to child maltreatment*. 2014, NSPCC: London.
32. Public Health England. *Public Health Profiles*. 2020 14/08/2020]; Available from: https://fingertips.phe.org.uk/.
33. Care City. *Care City Cohort*. 2020 24/06/2020]; Available from: https://www.carecity.london/what-we-do/live-projects/advancing-applied-analytics.
34. Office for National Statistics, *Live births by month, sex and area of usual residence of mother, England and Wales, September 2017 to August 2018*, O.f.N. Statistics, Editor. 2020.
35. Office for National Statistics, *Live births by month, sex and area of usual residence of mother, England and Wales: September 2018 to August 2019, provisional*, Office for National Statistics, Editor. 2020.
36.