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Introduction

The Scottish child health programme and the child health reviews at 13-15 months, 27-30 months and 4-5 years of age

The child health programme is offered to all children in Scotland. The programme includes screening for specific medical problems, provision of routine childhood immunisations, and a series of child health reviews. Health Visitors usually provide reviews for preschool children. The reviews involve assessment of children’s growth and development, and provision of advice and support for children and their families. The Universal Health Visiting pathway in Scotland (2015)¹ described three home visits with developmental and wellbeing reviews that should be offered to families in Scotland. These are offered at:

- 13-15 months of age
- 27-30 months of age
- 4-5 years of age

One part of these reviews is assessing children’s development, and in this publication we report on these Health Visitors’ assessments. We also report on the coverage of the reviews (the proportion of children that received their review) and the quality of the data returned on children’s development.

Overall policy on reviews for preschool children is set out in the Scottish Health Visiting Pathway²; this also includes specific guidance on the content and delivery of the 13-15 month 4-5 year reviews. Specific guidance on the 27-30 month review is also available.³ UK-wide guidance on effective delivery of the child health programme is available from the Royal College of Paediatrics and Child Health.⁴

The importance of early child development

Early child development is the progressive acquisition of skills and abilities as children grow up. Through the process of development, a child goes from being a new-born, entirely dependent on her or his caregivers, to a child increasingly capable of making sense of the world, communicating and forming relationships, and planning and carrying out independent actions.⁵

Biological/medical and environmental/social factors act together to influence children’s development.⁶ Biological factors include prematurity, conditions such as Down’s syndrome,
or severe hearing impairment. Environmental factors include the quality of parenting a child receives, the amount and variety of language they are exposed to, and their opportunities for exploration and play. Specific aspects of parenting that are important for children’s development include warmth, ability to pick up on a child’s needs, and consistency of response.

Children generally acquire developmental skills in a predictable order. Broadly speaking, a child’s development can cause concern if it is disordered or delayed.\(^5\) Disordered development means that certain aspects of a child’s development are not progressing as would be expected, whilst others continue to progress, meaning that skills are not gained in the expected order. Disordered development is more likely to indicate an underlying biological problem. Delayed development means that a child’s development is progressing in the usual fashion, but at a relatively slow rate. Delayed development is more likely to reflect wider environmental problems, particularly if the delay is relatively mild.

Developmental problems can come to light through various routes. More severe problems are likely to be picked up at the new-born examination offered to every baby, or parents may seek medical advice due to obvious problems. More subtle problems are likely to be picked up through the developmental assessments offered as part of child health reviews, including those reported here.

Problems with early child development are important as they are strongly associated with long-term health, educational, and wider social difficulties.\(^7\) Detecting developmental problems early provides the best opportunity to support children and families to improve outcomes. There is good evidence that parenting support and enriched early learning opportunities can improve outcomes for children with, or at risk of, developmental delay.\(^8,9\) In addition, there is increasing evidence that intensive early interventions for children with serious developmental problems can also improve outcomes\(^10\).

Information for parents on early child development, and promoting good development, is available through Ready Steady Baby\(^11\), Ready Steady Toddler\(^12\), and Parent Club\(^13\).

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\(^7\) Harvard University Centre on the Developing Child [https://developingchild.harvard.edu/resources/](https://developingchild.harvard.edu/resources/)


\(^12\) NHS Health Scotland. Ready Steady Toddler. [http://www.readysteadytoddler.org.uk/](http://www.readysteadytoddler.org.uk/)

\(^13\) Parent Club. [https://www.parentclub.scot/](https://www.parentclub.scot/)
How child development is assessed within the reviews and the information used in this publication

Health Visitors assess children’s development during child health reviews by:

• Asking parents/carers about any concerns they have regarding their child’s development
• Asking about the child’s developmental abilities and attainment of relevant milestones
• Careful observation of the child
• Asking parents to complete a questionnaire about their child’s development

Health Visitors are asked to assess the following eight domains of children’s development during the child health reviews:

• Speech, language and communication
• Gross motor
• Fine motor
• Problem solving
• Personal/social
• Emotional/behavioural
• Vision, and
• Hearing

These domains are used consistently at all three reviews, and Health Visitors are asked to record their overall assessment of each domain of a child’s development as:

• No concern about this aspect of the child’s development
• Concern newly suspected as a result of the review
• Concern or disorder already known prior to the review, or
• Assessment incomplete

This publication reports on reviews provided to:

• Children turning 13 months between April 2018 and March 2019 (13-15 month review)
• Children turning 27 months between April 2018 and March 2019 (27-30 month review).
• Children turning 4 years between April 2018 and March 2019 (4-5 year review)
Changes in the development assessments over time

A number of changes to the approach to development assessments and recording of outcomes were implemented in April 2017. The number of domains was reduced from nine to eight, with some domains being merged, and a new domain added (Problem Solving).

Since April 2017, it has also been national policy for Health Visitors to ask all parents to complete an Ages and Stages Questionnaire (ASQ-3) at each of the reviews. Subsequently a child’s scores on the ASQ-3 questionnaire have been recorded for the 5 developmental domains covered by this tool (Communication, Gross motor, Fine motor, Problem solving, and Personal/social).

There is a wider range of questionnaires, which Health Visitors may use if/when they feel it is necessary. Between April 2013 and March 2017 Health Visitors used a range of these validated tools to support the 27-30 month review, and this varied by Health Board area.

Further information on the details of developmental assessment conducted as part of the child health reviews provided between April 2013 and March 2017, and from April 2017 onwards, is provided in the technical report accompanying this publication.

Other sources of information on early child development

The Scottish Government publishes information on children attending funded early learning and childcare (and, for older children, school), who have a recognised Additional Support Need. Information on the number whose need reflects an underlying developmental problem, such as a ‘language, speech or communication problem’, is also provided.

Since academic year 2015/16, the Scottish Government has published information on the proportion of children attaining expected Curriculum for Excellence milestones (based on teachers’ judgement), including achievement of ‘early level’ outcomes by the end of the first year in primary school. Since academic year 2017/18, teachers’ judgement has been supported by national standardised assessment of all children in P1, P4, P7, and S3.

Information on the provision of child health reviews in England, including the 2-2½ year review recommended as part of the English Healthy Child Programme, is provided by both

15 Scottish Government, Early learning and childcare statistics, https://www2.gov.scot/Topics/Statistics/Browse/Children/Pubs-Pre-SchoolEducation
NHS Digital\textsuperscript{19} and Public Health England\textsuperscript{20}. Information on the use of the ASQ-3 within 2-2½ year reviews, and the proportion of children with scores indicating an appropriate level of development for their age, is also provided. The information from NHS Digital is based on data submitted by health services as part of the Community Services Data Set. This is a relatively new data return (established in 2015) and data quality is still evolving. The information from Public Health England is based on aggregate data returns submitted by Local Authorities. This is intended as an interim alternative source of information which will be stopped once the NHS Digital data return is fully established. These two sources of information are not directly comparable to each other, or to the information reported here on the Scottish 27-30 month child health review.

Detailed information on early child development, factors influencing development, and children’s outcomes is also available from major Scottish and UK birth cohort studies. These studies repeatedly survey a group of children and their families as they grow up. Examples include Growing Up in Scotland\textsuperscript{21}, the Millennium Cohort Study\textsuperscript{22}, and the Avon Longitudinal Study of Parents and Children\textsuperscript{23}.


\textsuperscript{20} Public Health England, \url{https://www.gov.uk/government/collections/child-and-maternal-health-statistics} (In particular see Health Visitor service delivery metrics and Child development outcomes at 2-2½ metrics)

\textsuperscript{21} ScotCEN. Growing Up in Scotland. \url{http://growingupinscotland.org.uk/}

\textsuperscript{22} UCL Centre for Longitudinal Studies \url{https://cls.ucl.ac.uk/cls-studies/millennium-cohort-study/}

\textsuperscript{23} University of Bristol. Avon Longitudinal Study of Parents and Children. \url{http://www.bristol.ac.uk/alspac/}
Main Points

- In 2018/19, 12% of children undergoing a 13-15 month review, and 15% of children undergoing a 27-30 month review, had a concern recorded about at least one area of their development. At the 27-30 month review this proportion has fallen from 19% in 2013/14.
- At 13-15 months most concerns were recorded about gross motor (6%), and speech, language and communication development (5%). At 27-30 months most concerns were recorded about speech, language and communication (10%), and emotional and behavioural development (5%).
- At the 27-30 month review:
  - Boys (19%) were almost twice as likely as girls (10%) to have a concern recorded about their development.
  - Children living in the most deprived areas of Scotland (22%) were much more likely than those living in the least deprived areas (8%) to have a concern recorded about their development.
  - Children who were looked after by their Local Authority (28%) were twice as likely as non-looked after children (14%) to have a developmental concern, reflecting the broader vulnerability, and generally poor health, of this group of children.
- The number and proportion of pre-school children receiving child health reviews has increased over time, and in 2018/19 71% of eligible children had a 13-15 month review, 92% of eligible children had a 27-30 month review, and 37% of eligible children had a 4-5 year review recorded.
Results and Commentary

13-15 Month Review

A total of 38,084 children turning 13 months over the year April 2018 to March 2019 were recorded as receiving their 13-15 month review. In interpreting findings, it should be noted that coverage (proportion of eligible children who had a review recorded) was markedly lower in NHS Greater Glasgow and Clyde (4%), than in the 13 other Health Board areas (>80%). See the section below on coverage and the accompanying technical report for further details of review coverage and data quality.

The proportion of children with developmental concerns recorded

Of 38,084 child health reviews undertaken, 4,400 (12%) had a newly identified or previously known concern recorded for at least one developmental domain.

Developmental domains

Six percent of children had a concern recorded for the Gross motor domain (2,423), and 5% for the Speech, language and communication domain (1,786). Concerns about other aspects of children’s development were less common, with up to 3% of children having a concern recorded for each domain: Fine motor (1,137, 3%); Problem solving (1,176, 3%); Personal/social (892, 2%); Emotional/behavioural (339, 1%); Vision (371, 1%); and Hearing (203, 1%).

The proportion of concerns that were newly identified as a result of the 13-15 month review varied between the different developmental domains. A lower proportion of concerns in the Hearing (68%) and Vision (60%) were new, compared to the other domains in which 85-90% of concerns were newly identified.
The proportion of children with no developmental concerns recorded

In 2018/19, 33,684 children (88%) had no specific concerns recorded for any developmental domain. Of these, 30,702 (81%) had ‘No concern’ actively recorded for each of the eight developmental domains. The remaining 2,982 had a mixture of ‘No concern’, ‘Assessment incomplete’, and no information recorded for the various domains.
27-30 Month Review

The proportion of children with developmental concerns recorded

A total of 50,790 children turning 27 months over the year April 2018 to March 2019 were recorded as receiving their 27-30 month review. Of these, 7,376 (15%) had a newly identified or previously known concern recorded for at least one developmental domain.

Developmental domains

Ten percent (4,912) of children had a concern recorded for the Speech, language and communication domain, and 5% (2,630) had a documented concern about emotional/behavioural development. Concerns about other aspects of children’s development were less common, with up to 4% of children having a concern recorded for each domain: Gross motor (1,099, 2%); Fine motor (1,562, 3%); Problem solving (1,387, 3%); Personal/social (2,171 4%); Vision (780, 2%); and Hearing (642, 1%).

The proportion of concerns that were newly identified as a result of the 27-30 month review varied between the different developmental domains. A higher proportion of concerns in the Speech, language and communication, Fine motor, Problem solving, Personal/social and Emotional/behavioural domains were new (82-86%), compared to Hearing (73%) and Gross motor (74%). The lowest proportion of new concerns was in the Vision domain (55%).

Figure 2: Percentage of children with specified developmental concern recorded at 27-30 month review, Scotland, 2018/19

Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland
The proportion of children with no developmental concerns recorded

In 2018/19, 43,414 children (85% of all those receiving a 27-30 month review) had no specific concerns recorded for any developmental domain. Of these, 32,278 (64% of all children reviewed) had ‘No concern’ actively recorded for each of the eight developmental domains. The remaining 11,136 had a mixture of ‘No concern’, ‘Assessment incomplete’, and no information recorded for the various domains.

![Figure 3: Percentage of children with any developmental concern recorded at 27-30 month review, ‘No concern’ actively recorded for every developmental domain, and a mixture of ‘No concern’ and missing information, Scotland, 2013/14 to 2018/19](image)

Note: The number in the centre of each circle shows the number of reviews.
Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland

4-5 Year Review

A total of 21,109 children turning 4 years old over the year April 2018 to March 2019 were recorded as receiving their 4-5 year review. It should be noted that coverage (proportion of eligible children who had a review recorded) varied markedly between Health Board areas; six Boards recorded reviews for more than 80% of eligible children, and five Boards for fewer than 10% of children. In view of this variation, national summary data for Scotland are not available, but findings from particular Board areas with reasonable coverage are highlighted below. For further details of review implementation dates by Board, coverage and data quality, see the section below on coverage and the accompanying technical report.

The proportion of children with developmental concerns recorded

The proportion of children with a newly identified or previously known concern recorded for at least one developmental domain ranged in mainland boards from 3% in NHS Grampian to 16% in NHS Tayside.
The domains within which children were most likely to have concerns recorded were the Emotional/behavioural domain, the Speech, language and communication domain and the Fine motor domain. Smaller numbers of children had concerns recorded for the other domains.

**The proportion of children with no developmental concerns recorded**

In 2018/19 the proportion of children with no specific concerns recorded for any developmental domain ranged in mainland boards from 84% in NHS Tayside to 97% in NHS Grampian. The proportion of children who had ‘No concern’ actively recorded across all domains ranged from 75% in NHS Tayside to 86% in NHS Borders.

**NHS Board and Local Authority areas**

The review of outcomes by area is based upon the 27-30 month review only. This is the only one of the three reviews with sufficient data covering all Health Board and Local Authority areas to permit detailed reporting by area.

In 2018/19, the proportion of children with a concern recorded for at least one developmental domain was between 10% and 20% in the majority of Local Authority areas. In four areas at least 20% of children reviewed had a concern recorded (Inverclyde, West Dunbartonshire, Glasgow City and Western Isles). In six areas, less than 10% of children reviewed had a concern identified (Aberdeen City, Aberdeenshire, Moray, Edinburgh, Midlothian and Orkney).

Across NHS Boards the proportion of children with a concern recorded for at least one developmental domain ranged from 4% of children living in NHS Grampian to 20% in NHS Greater Glasgow & Clyde. This degree of variation is likely to be in part due to differences in approach used to assess child development (see the technical report for further information on developmental tools used at reviews) in different areas. It is also likely to reflect differences in population and place characteristics, such as levels of deprivation, that influence the likelihood of developmental problems.
Figure 4: Percentage of children with any developmental concern recorded at 27-30 month review, by NHS Board of Residence, 2018/19

NHS Boards

A Ayrshire & Arran  B Borders  Y Dumfries & Galloway  F Fife
V Forth Valley  N Grampian  G Greater Glasgow & Clyde  H Highland
L Lanarkshire  S Lothian  R Orkney  Z Shetland
T Tayside  W Western Isles

Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland
Trends over time in developmental concerns

Trend data is based upon the 27-30 month review only. This is the only one of the three reviews with sufficient data over a period of time to allow reporting of trends.

The proportion of children recorded as having any developmental concern at their 27-30 month review has steadily declined from 19% in 2013/14 (when the review was introduced) to 15% in 2018/19. This decline is mainly due to:

• Small decreases over time in the proportion of children recorded as having a concern about their Speech, language and communication development (from 13% in 2013/14 to 10% in 2018/19). This is seen in most, but not all, NHS Board areas. In NHS Greater Glasgow and Clyde the proportion was 13% in 2018/19, having remained between 13% and 15% since 2013/14.

• Small decreases over time in the proportion of children recorded as having a concern about their Emotional/behavioural development (from 8% in 2013/14 to 5% in 2018/19). This is seen in most NHS Board areas, and in NHS Greater Glasgow and Clyde there was a more marked reduction (from 14% in 2013/14 to 8% of children in 2018/19).

Over the same period there has been an increase in the small proportion of children reviewed having a concern recorded about their Fine motor development (from 2% in 2013/14 to 3% in 2018/19)

Interpreting trends in developmental concerns

Changes in the proportion of children with developmental concerns recorded may be influenced by a number of factors, including:

• how children’s development is assessed within the review;
• how information is recorded and reported;
• the thresholds used by Health Visitors to identify what constitutes a ‘concern’;
• genuine changes in the occurrence of developmental problems in children

Looking at the results for Speech, language and communication development in more detail: four NHS Board areas (NHS Ayrshire & Arran, NHS Fife, NHS Lothian, and NHS Tayside) have consistently used the ASQ-3 in a high proportion (>80%) of 27-30 month reviews since the reviews were introduced in 2013/14. Each of these Board areas has seen broadly stable review coverage and quality of data recording on this developmental domain over time. Each of these Boards has seen a decline in the proportion of children identified as having a concern about their Speech, language and communication development in 2018/19 compared to earlier years.

Similarly, looking at the results for Emotional/behavioural development in more detail: NHS Greater Glasgow & Clyde has consistently used the Strengths and Difficulties questionnaire to assess this aspect of children’s development since 27-30 month reviews were introduced.
In addition, the Board has seen consistent or improving review coverage and quality of data recording on this developmental domain over time.

In these specific examples, therefore, changes in review coverage, in the approach to assessing children’s development within reviews, or in the quality of data recording on review records do not appear to explain the decline seen in the proportion of children identified as having a concern about these aspects of their development. The declines may therefore reflect changes over time in the thresholds used by Health Visitors to identify a ‘concern’, and/or a genuine decline in the proportion of toddlers with delayed development. Review of objective data on ASQ-3 scores in conjunction with the more judgement based ‘concern’ data, will further guide interpretation of these trends.

The proportion of children with ‘No concern’ actively recorded for each developmental domain declined from 2013/14 (71%) to 2017/18 (57%), and was higher again in 2018/19 (64%). As described above, the proportion of children having developmental concerns recorded has also declined over the same period. As shown in Figure 3 above, this pattern is due to an increase from 2013/14 (10%) to 2017/18 (28%) in the proportion of children with missing information for at least one developmental domain (who are therefore not included in the number with ‘No concern’ actively recorded for each domain). This percentage has decreased in 2018/19 to 22%. Further information on this is provided in the section on review coverage and data quality below and in the accompanying technical report.

Relationship between developmental concerns and children’s characteristics

Sex

At the 13-15 month review in 2018/19 a higher proportion of boys (13%) had at least one concern identified than girls (10%). At the 27-30 month review this difference was more marked, with 19% of boys having a concern recorded compared to 10% of girls.

At the 13-15 month review similar proportions of girls and boys have concerns recorded for the Fine motor and Gross motor domains, whereas a higher proportion of boys are noted to have concerns in the Speech, language and communication, Personal/social and Problem Solving domains.

At the 27-30 month review boys are around twice as likely as girls to have a concern recorded for every specific developmental domain, except vision. The absolute difference between boys and girls is most marked for the Speech, language and communication, Emotional/behavioural, and Personal/social domains.

Deprivation

At each development review there is a clear deprivation gradient, with those living in the most deprived areas of Scotland (SIMD quintile 1) more likely to have had a concern recorded for at least one developmental domain compared to those living in the least deprived areas (SIMD quintile 5).
At the 27-30 month review, which has the most comprehensive geographical coverage, 22% of children living in the most deprived areas had a concern recorded in 2018/19, compared to 8% of children living in the least deprived areas (SIMD quintile 5).

There is a clear deprivation gradient across all domains, but this is most pronounced in the Fine motor domain at 13-15 months, and the Speech, language & communication domain at 27-30 months.

**Figure 5: Percentage of children with any developmental concern recorded at 27-30 month review by deprivation level, Scotland, 2018/19**

Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland
Information from the Scottish Government has also shown that boys, and children from more deprived areas, are more likely to have an Additional (educational) Support Need identified whilst in nursery\textsuperscript{15} or primary school\textsuperscript{16}, and are less likely to have achieved the Curriculum for Excellence early level by the end of P1\textsuperscript{17}.

**Ethnicity**

The proportion of children with a developmental concern recorded varies by ethnicity. In 2018/19 at the 27-30 month review, a higher proportion of children of Asian (20\%) and Black, Caribbean, or African ethnicity (20\%) had a developmental concern recorded for at least one domain, than among children of White Scottish ethnicity (14\%). Ethnicity was unknown for 4\% of children in 2018/19, a lower proportion than in 2017/18 (9\%).

**Figure 6: Percentage of children with any developmental concern recorded at 27-30 month review by ethnicity, Scotland, 2018/19**

![Diagram showing percentage of children with developmental concerns by ethnicity]

- **White Scottish**: 38,533
- **White Other British**: 2,446
- **White Polish**: 1,391
- **White Other**: 1,942
- **Asian**: 2,430
- **Black, Caribbean, or African**: 807
- **Mixed / Multiple Ethnicity**: 1,245
- **Other / Unknown**: 1,996

<table>
<thead>
<tr>
<th>Concern in any domain</th>
<th>No concerns in ALL domains</th>
<th>No concerns recorded but some domains missing</th>
</tr>
</thead>
</table>

**Note:** The number in the centre of each circle shows the number of reviews

**Source:** CHSP Pre-School May 2020, SIRS, Public Health Scotland
Information from the Millennium Cohort Study has also shown that children from Asian and Black ethnic groups achieve substantially lower scores on tests of cognitive development at age 3 than children of White ethnicity\textsuperscript{24}. These ethnic inequalities in early child development are likely to reflect the wider disadvantages experienced by some ethnic minority groups, and possibly also variation in how reliable developmental assessments are for children from different cultural and language backgrounds.

**Language**

In 2018/19, the proportion of children with a concern recorded for at least one developmental domain at the 27-30 month review was slightly higher for children living in a household where English was not the first language spoken (16\%) compared to those in which it was the main language spoken (14\%).

Children living in households where English is not the main language spoken are likely to come from a wide range of ethnic groups, with some groups being at relatively high risk of developmental concerns, and some at relatively low risk, as shown above.

In 2018/19, the proportion of children with a concern recorded for at least one developmental domain was similar for children in a bi- or multi-lingual household (15\%) compared to a mono-lingual (14\%) household.

**Looked after children**

The ‘looked after’ status of children at the time of their child health review is recorded on the review record. Looked after children are those under the care of their Local Authority due to care, protection, and/or (for older children) offending needs. Looked after children may live at home with their parents under social work supervision, with other family members or friends, with foster carers or prospective adopters, or (again generally for older children) in residential units.

In 2018/19, children who were looked after at the time of their 27-30 month review (28\%) were much more likely than non-looked after children (14\%) to have a concern recorded about their development at the 27-30 month review. This reflects the broader vulnerability (and generally poor health) of this group of children\textsuperscript{25}. Note that the quality of recording of children’s looked after status at the time of their 27-30 month review has improved over time (see technical report for further details).

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Coverage of the child health reviews and data quality

Interpreting information on the proportion of children with (or without) developmental concerns recorded

This report presents information on the proportion of children with (or without) a developmental concern recorded on their child health review records. The extent to which this reflects the true proportion of children in the population with (or without) developmental problems depends on a number of factors, in particular:

- The coverage of the child health reviews for each age group (What proportion of children eligible for a review actually received one?)
- Any systematic differences between children who did and did not receive their child health review (Were children who missed their review more or less likely than those who received it to have a developmental problem?)
- The quality of developmental assessment undertaken within reviews (Were all developmental domains systematically assessed using professional judgement supported by use of a validated developmental questionnaire?)
- The completeness of data recording within review records (Was a meaningful outcome recorded for each developmental domain? Were other factors such as the child’s ethnicity also well recorded?)

The following sections therefore provide information on coverage of the child health reviews for each age group, and the quality of data recording within review records. This information supports interpretation of the headline results on developmental concerns. Further information is provided in the technical report.

Review coverage

Coverage of the child health reviews is calculated as the proportion of children eligible for a review – those turning 13 months, 27 months or 4 years old in the period of interest (for this report in April 2018 to March 2019) who were recorded as receiving their review. All reviews were counted, providing they were completed when the child was aged 11-20 months, 24 to 35 months, and 47-70 months inclusive, for the respective reviews, and the review was recorded on the national child health information system before the information was extracted for this publication in May 2020. Further information on review coverage is available in the coverage publication published in February 2020, although final achieved coverage has increased slightly since then due to the dynamic nature of the child health system.
Review coverage for eligible 13-15 month-olds

In 2018/19, a total of 53,391 children were eligible for the 13-15 month review, of whom 38,084 were recorded as receiving their review, giving an overall review coverage of 71%. This is a marked increase from 53% the previous year.

Review coverage has improved across nearly all NHS Boards, with the majority achieving greater than 90% coverage. NHS Greater Glasgow and Clyde did not fully implement this review until May 2019, therefore only 4% of eligible children had reviews recorded in this reporting period. This had a substantial impact on the overall national coverage, as 23% of eligible children lived in this Health Board area.

In 2018/19, review coverage was similar for girls (71%) and boys (71%).

Review coverage of eligible 27-30 month-olds

In 2018/19, a total of 55,485 children were eligible for the 27-30 month review, of whom 50,790 were recorded as receiving their review, giving an overall review coverage of 92%. Coverage has increased slightly over time, up from 87% for children turning 27 months in 2013/14.

Review coverage varied across NHS Boards from 88% for children living in NHS Grampian to 95% living in NHS Ayrshire & Arran. Across Local Authority areas, coverage varied from 85% of children living in Aberdeen City to 96% of children living in East Dunbartonshire, Inverclyde, Renfrewshire and South Lanarkshire. In general, the degree of variation in coverage across Scotland has reduced over time, as areas with initially low coverage have improved uptake of the review.

In 2018/19, review coverage was similar for girls (92%) and boys (91%). There was no deprivation gradient in coverage, with this being similar across SIMD quintiles (92% in all quintiles except SIMD 2 in which coverage was 91%). Coverage cannot be calculated for other groups of children, such as those whose first language is not English, as this information is only recorded for children who actually have a review.

Review coverage of eligible 4-5 year-olds

In 2018/19, a total of 57,315 children were eligible for the 4-5 year review, of whom 21,109 were recorded as receiving their review, giving an overall review coverage of 37%. Coverage has increased from 22% in 2017/18.

There is substantial variation in review coverage across NHS Boards, reflecting differences in the date of implementation of the review. Further detail is provided in the accompanying technical report.

In 2018/19, review coverage was similar for girls (37%) and boys (37%).
Figure 7: Coverage of the 13-15 month, 27-30 month and 4-5 year review, children turning 13 months, 27 months and 4 years, respectively, between April 2018 and March 2019, by NHS Board of Residence

Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland

Quality of data returned on child development

Data quality is assessed by examining the proportion of records that have meaningful information recorded across all developmental domains. Having meaningful data for every domain means having ‘No concern’, ‘Concern newly suspected’, or ‘Concern or disorder previously known’ recorded for each of the eight domains assessed during reviews. If one of these outcomes is not entered it may be because the developmental assessment of that domain was not completed, and this is documented as ‘Assessment incomplete’, or because no information at all was recorded against that domain.

13-15 month reviews data quality

In 2018/19, 34,825 (91%) of the 38,084 13-15 month review records contained meaningful information for every developmental domain. The remaining 3,259 children had ‘Assessment incomplete’ or no information recorded against at least one of the developmental domains.
This proportion is higher than in 2017/18 (88%), and along with the increase in coverage, this resulted in 9,261 more children in this age group having meaningful data recorded across all domains, than in the previous year.

In 2018/19, the proportion of review records containing meaningful information for every developmental domain varied between NHS Boards from 83% for children living in NHS Highland to 97% for children living in NHS Western Isles. Across Local Authority areas, the proportion varied from 80% of children living in Highland to 97% of children living in Western Isles.

**27-30 month reviews data quality**

In 2018/19, 37,225 (73%) of the 50,790 27-30 month review records contained meaningful information for every developmental domain. The remaining 13,565 children had ‘Assessment incomplete’ or no information recorded against at least one of the developmental domains.

This proportion is higher than in 2017/18 (66%), which was substantially lower than previous years. The Problem solving developmental domain was introduced in April 2017, and in the first year after introduction a high proportion of records had missing information for this domain. The proportion with missing information in this domain was lower in 2018/19, supporting the expectation that completeness would improve as Boards consistently use the ASQ-3 questionnaire and the new review forms which together support capturing and recording this information. Further information is provided in the technical report. This improvement means that the proportion of children with ‘No concern’ recorded for each developmental domain was higher in 2018/19 than in 2017/18, but has not returned to the observed levels in previous years.

In 2018/19, the proportion of review records containing meaningful information for every developmental domain varied widely between NHS Boards from 14% for children living in NHS Greater Glasgow & Clyde to 97% for children living in NHS Dumfries & Galloway and NHS Orkney. Across Local Authority areas, the proportion varied from 5% of children living in Inverclyde to 97% of children living in Dundee City, Orkney & Dumfries & Galloway. This reflects low levels of recording of information against the Problem solving developmental domain for reviews provided in NHS Greater Glasgow & Clyde, but completion is higher than in 2017/18. Again, further information is provided in the technical report.
Figure 8: Percentage of 27-30 month reviews with meaningful information recorded for every developmental domain, 2018/19, by NHS Board of Residence

Source: CHSP Pre-School May 2020, SIRS, Public Health Scotland

4-5 year reviews data quality

In 2018/19, 18,211 (86%) of the 21,109 4-5 year review records contained meaningful information for every developmental domain. The remaining 2,898 children had ‘Assessment incomplete’ or no information recorded against at least one of the developmental domains. This proportion is higher than in 2017/18 (78%), and given the overall increase in coverage, this resulted in 8,091 more children in this age group having meaningful data recorded across all domains, than in the previous year.

Coverage and data quality and children’s characteristics

The reporting of the relationship between review coverage, data quality and children’s characteristics is based on 27-30 month review only, due to substantial geographical variation in coverage of the 13-15 month and 4-5 year reviews.

In 2018/19, the proportion of review records containing meaningful information for every developmental domain was lower for children living in the most deprived areas of Scotland (62%, SIMD quintile 1) compared to all other deprivation quintiles (range 73%-81%). This pattern has only been observed since 2016/17, and was most marked in 2017/18. This suggests it is associated with issues in documentation of the problem-solving domain described above, which particularly affect data from the NHS Greater Glasgow & Clyde area, and which contains a substantial proportion of SIMD1 areas.
The proportion of review records containing meaningful information for every developmental domain was noticeably lower for children from certain ethnic groups (for example 51% for Asian children compared to 75% for White Scottish children); those living in a household where English was not main language spoken (65% compared to 74% for children from English speaking households); and those living in a bi- or multi-lingual household (66% compared to 74% for children in a mono-lingual household). Although more marked in recent years, this is a pattern that was observed prior to the recent recording issues with the Problem-solving domain, which suggests that it is, to some extent, independent of these. This is likely to reflect difficulties in completing and interpreting a comprehensive assessment of a child’s development when there is a language barrier between the family and health professional. This therefore emphasises the importance of Health Visitors having access to appropriate translation and interpretation services.

The proportion of review records containing meaningful information for every developmental domain was similar for girls (74%) and boys (73%).
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Further Information
Further information is available in the interactive data visualisation. Public Health Scotland publishes a wide range of information on Child Health including infant feeding, immunisations, and Primary 1 Body mass Index (BMI). Further information is available on our website.

The next release of this publication will be April 2021.

Open data
Data from this publication is available to download from the Scottish Health and Social Care Open Data Portal.

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