Child Health
27-30 Month Review Statistics
Scotland 2016/17

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Contents

Introduction ........................................................................................................................................3
Main Points .......................................................................................................................................7
Results and Commentary....................................................................................................................8
  The proportion of children with a developmental concern recorded at 27-30 months ..........8
  Children with no developmental concerns recorded .................................................................10
  Relationship between developmental concerns and children’s characteristics .................11
  Coverage of the 27-30 month child health review and data quality .......................................14
References ........................................................................................................................................18
List of Tables ....................................................................................................................................19
Contact ............................................................................................................................................20
Further Information .........................................................................................................................20
Rate this publication .......................................................................................................................20
Introduction

The Scottish child health programme and the 27-30 month child health review

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.

A review for children aged 27-30 months was introduced in Scotland in April 2013. In this publication we report on Health Visitors’ assessment of children’s development at these reviews. We also report on the coverage of the review (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 national Health Visiting Pathway(1). Specific guidance on the content and delivery of the 27-30 month review is also available(2).

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(3).

Biological/medical and environmental/social factors act together to influence children’s development(4). 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(3). Disordered development means that certain aspects of a child’s development are not progressing as would be expected. 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(5). 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 proactive developmental assessments offered as part of child health reviews, including the 27-30 month review.
Problems with early child development are important as they are strongly associated with long-term health, educational, and wider social difficulties(4). 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(6, 7). In addition, there is increasing evidence that intensive early interventions for children with serious developmental problems can also improve outcomes(8).

Information for parents on early child development, and promoting good development, is available through Ready Steady Baby\textsuperscript{a}, Ready Steady Toddler\textsuperscript{b}, and Play, Talk, Read\textsuperscript{c}.

Assessment of child development within the 27-30 month review and 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

Since April 2017, Health Visitors have been asked to assess the following eight domains of children’s development during 27-30 month reviews:

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

Between April 2013 and March 2017, Health Visitors used a slightly different list of domains, and information was not collected on the Problem solving domain.

\textsuperscript{a} NHS Health Scotland. Ready Steady Baby. \url{http://www.readysteadybaby.org.uk/}
\textsuperscript{b} NHS Health Scotland. Ready Steady Toddler. \url{http://www.readysteadytoddler.org.uk/}
\textsuperscript{c} Scottish Government. Play, Talk, Read. \url{http://playtalkread.scot/}
Since April 2017, national policy has also been for Health Visitors to ask all parents to complete an Ages and Stages Questionnaire (ASQ-3)\(^d\) as part of the 27-30 month review(1). Between April 2013 and March 2017, Health Visitors used a wider range of questionnaires, either for all children/parents or if/when they felt it was necessary.

Since April 2013, Health Visitors have been 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

In addition, since April 2017, the child’s scores on the ASQ-3 questionnaire have been recorded for all the domains listed above except Emotional/behavioural, Vision, and Hearing.

This publication reports on reviews provided to children turning 27 months between April 2016 and March 2017. Some (around 15%) of these reviews were provided in April 2017 or later hence had the opportunity to capture information on the full list of developmental domains shown above plus ASQ scores. Most (around 85%) of reviews were conducted prior to April 2017 hence did not have the opportunity to capture information on the Problem solving domain of children’s development or the ASQ scores. For that reason we do not report on Problem solving or ASQ scores in this publication.

Further information on the details of developmental assessment conducted as part of 27-30 month 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(9) (and, for older children, school(10)), 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 also published information on children attaining expected Curriculum for Excellence milestones, including achievement of ‘early level’ outcomes by the end of the first year in primary school(11).

Information on the provision of child health reviews recommended as part of the English Healthy Child Programme, including the 2-2½ year review, is provided by both NHS Digital(12) and Public Health England(13). 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 initially known as the Children and Young People’s Health Services Data Set) 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, the Millennium Cohort Study, and the Avon Longitudinal Study of Parents and Children.

New interactive visual content

For the first time, we have provided an interactive display of information along with this publication. This can be found in the 27-30 Month Review Dashboard. The dashboard presents information on coverage and outcome of developmental assessment, by NHS Board, local authority, deprivation level, age at review, ethnicity, whether English is the main language, whether the child is bi/multilingual and Looked After Child (LAC) status. We would welcome any feedback on this new way of presenting information. Please email nss.isdchildhealth@nhs.net.

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^g University of Bristol. Avon Longitudinal Study of Parents and Children. [http://www.bristol.ac.uk/alspac/](http://www.bristol.ac.uk/alspac/)
Main Points

- In 2016/17, 18% of children undergoing a 27-30 month child health review had a concern recorded about at least one area of their development.

**Percentage of children with any developmental concern recorded at their 27-30 month review, Scotland, 2016/17**

- Concerns were most commonly recorded about children’s speech, language and communication (13% of children), and their emotional and behavioural development (6% of children).
- Boys (23%) were almost twice as likely as girls (12%) to have a concern recorded about their development.
- Children living in the most deprived areas of Scotland (24%) were much more likely than those living in the least deprived areas (11%) to have a concern recorded about their development.
- The percentage of children with any concern recorded about their development ranged from 7% in NHS Grampian to 23% in NHS Ayrshire & Arran. These results should be interpreted with some caution as it is likely that this degree of variation reflects different approaches to assessing child development in different areas.
- Developmental concerns are particularly common for children who are looked after by their Local Authority (38%), reflecting the broader vulnerability, and generally poor health, of this group of children.
- In 2016/17 51,327 eligible children (89%) received a 27-30 month review.
Results and Commentary

The proportion of children with a developmental concern recorded at 27-30 months

A total of 51,327 children turning 27 months over the year April 2016 to March 2017 were recorded as receiving their 27-30 month review. Of these, 9,013 (18%) had a newly identified or previously known concern recorded for at least one developmental domain.

Children most commonly had a concern recorded for the Speech, language and communication domain (6,688, 13%) followed by the Emotional/behavioural (3,230, 6%) and Personal/social (2,051, 4%) domains. Concerns about Gross motor function (1,072, 2%), Fine motor function (1,079, 2%), Vision (985, 2%), and Hearing (881, 2%) were less common.

The proportion of concerns that were newly identified as a result of the 27-30 month review varied between the different developmental domains. 5,487 (82%) of the concerns about Speech, language and communication were new compared to 413 (42%) of those about Vision.

Figure 1: Percentage of children with specified developmental concern recorded at 27-30 month review, Scotland, 2016/17

Source: CHSP Pre-School February 2018, SIRS, ISD Scotland
In 2016/17, the proportion of children with a concern recorded for at least one developmental domain varied across NHS Boards from 7% of children living in NHS Grampian to 23% in NHS Ayrshire and Arran. Across Local Authority areas, the proportion varied from 6% of children living in Aberdeenshire to 26% of children living in Inverclyde. It is likely that this degree of variation reflects differences in approaches to assessing child development (see the technical report for further information on developmental tools used at reviews) in addition to differences in population characteristics such as levels of deprivation that influence the underlying risk of developmental problems.
Figure 2: Percentage of children with any developmental concern recorded at 27-30 month review, by NHS Board of Residence, 2016/17

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 February 2018, SIRS, ISD Scotland

Children with no developmental concerns recorded

Of the 42,314 children with no specific concerns recorded about their development at 27-30 months, 33,951 (66% of all children reviewed) had ‘No concern’ actively recorded for each developmental domain. The remaining 8,363 had a mixture of ‘No concern’, ‘Assessment incomplete’, and no information recorded for the various domains.

The proportion of children with missing information on at least one developmental domain was higher for those turning 27 months in 2016/17 (8,363 children, 16% of all those
reviewed) than it had been in previous years (10% of all children reviewed). This reflects the fact that some (around 15%) of these ‘2016/17’ reviews were provided in April 2017 or later. Reviews provided in April 2017 or later should have had information captured on the eight developmental domains listed in the introduction, including the new domain of Problem Solving. In practice, capturing this additional information is still being established hence information on Problem solving is missing for many of these reviews. Further information on this is provided in the technical report.

As the proportion of children with missing data was higher in 2016/17 than in previous years, the proportion with ‘No concern’ actively recorded against every developmental domain (including Problem solving for reviews provided from April 2017 onwards) was correspondingly lower. The proportion of children with a concern recorded for at least one developmental domain is less affected by these data recording issues and has remained broadly stable since the 27-30 month review was introduced in April 2013.

**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 2016/17**

![Graph showing 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 2016/17.](image)

Source: CHSP Pre-School February 2018, SIRS, ISD Scotland

**Relationship between developmental concerns and children’s characteristics**

**Sex**

Boys are much more likely than girls to have a concern recorded about their development at the 27-30 month review. In 2016/17, 23% of boys had a concern recorded for at least one developmental domain compared to 12% of girls.
Deprivation

In 2016/17, 24% of children living in the most deprived areas of Scotland (SIMD quintile 1) had a concern recorded for at least one developmental domain compared to 11% of children living in the least deprived areas (SIMD quintile 5).

Figure 4: Percentage of children with any developmental concern recorded at 27-30 month review by deprivation level, Scotland, 2016/17

Source: CHSP Pre-School February 2018, SIRS, ISD 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(9) or primary school(10), and are less likely to have achieved the Curriculum for Excellence early level by the end of P1(11).
Information Services Division

Ethnicity

The proportion of children with a developmental concern recorded varies by ethnicity. In 2016/17, children of Asian (23%) and Black, Caribbean, or African ethnicity (21%) were more likely to have a developmental concern recorded than children of White Scottish ethnicity (17%).

**Figure 5: Percentage of children with any developmental concern recorded at 27-30 month review by ethnicity, Scotland, 2016/17**

![Chart showing percentage of children with developmental concerns by ethnicity](chart.png)

Source: CHSP Pre-School February 2018, SIRS, ISD 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(14). 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 spoken at home

In 2016/17, the proportion of children with a concern recorded for at least one developmental domain was slightly higher for children living in a household where English was not (19%) compared to was (17%) the main language spoken, and was similar for those living in a bi- or multi-lingual (18%) compared to a mono-lingual (18%) household.

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.
Looked after children

The ‘looked after’ status of children at the time of their 27-30 month 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 in residential units. In 2016/17, children who were looked after (38%) were much more likely than non-looked after children (18%) 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(15). Please see the technical report for further information on changes in the recording of looked after children at the 27-30 month review over time.

Coverage of the 27-30 month child health review and data quality

Review coverage

Coverage of the 27-30 month review is calculated as the proportion of children eligible for the review – those turning 27 months in the period of interest, most recently April 2016 to March 2017 – who were recorded as receiving their review. All reviews were counted, providing they were completed when the child was aged 24 to 35 months inclusive (i.e. from their second up to their third birthday), and the review was recorded on the national child health information system before the information was extracted for this publication in February 2018. Further information is provided in the technical report.

In 2016/17, a total of 57,485 children were eligible for the 27-30 month review, of whom 51,327 were recorded as receiving their review, giving an overall review coverage of 89%. Coverage has increased slightly over time, up from 87% for children turning 27 months in 2013/14.

In 2016/17, review coverage varied across NHS Boards from 83% for children living in NHS Lothian to 95% living in NHS Ayrshire & Arran. Across Local Authority areas, coverage varied from 74% of children living in West Lothian to 97% of children living in North Ayrshire. 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 2016/17, review coverage was similar for girls (89%) and boys (90%). Coverage was slightly lower for children living in the most deprived areas of Scotland (88%, SIMD quintile 1) compared to the least deprived areas (90%, SIMD quintile 5).

Data from 145 of 150 English Local Authorities suggested that in the three months July to September 2017, coverage of the 2-2½ year child health review in England was 76% (16). Note that this figure is not directly comparable to the coverage figure reported above for the Scottish 27-30 month child health review due to differences in data collection and how coverage is calculated in Scotland and England.

Quality of data returned on child development
In 2016/17, 41,000 (80%) of the 51,327 27-30 month review records contained meaningful information for every developmental domain. This means having ‘No concern’, ‘Concern newly suspected’, or ‘Concern or disorder previously known’ recorded for each of the eight domains (including the new domain of Problem solving) assessed during reviews provided from April 2017 onwards, or for each of the nine developmental domains assessed during reviews provided up to March 2017 (see technical report for further information). The remaining 10,327 children had ‘Assessment incomplete’ or no information recorded against at least one of the developmental domains.
The proportion of reviews containing meaningful information for every developmental domain was lower in 2016/17 (80%) than it has been in previous years (87-88% in 2013/14 to 2015/16). As previously noted, this is due to a high proportion of 2016/17 review records that were provided from April 2017 onwards having missing information for the new Problem solving developmental domain. We expect the completeness of information recorded for this aspect of children’s development to improve over time as Boards consistently use the ASQ-3 questionnaire and the new review forms which together support capturing and recording information on this domain. Further information is provided in the technical report.

In 2016/17, the proportion of review records containing meaningful information for every developmental domain varied widely between NHS Boards from 55% for children living in NHS Greater Glasgow & Clyde to 99% for children living in NHS Western Isles. Across Local Authority areas, the proportion varied from 45% of children living in East Dunbartonshire to 99% of children living in Na h-Eileanan Siar.

**Figure 7: Percentage of 27-30 month reviews with meaningful information recorded for every developmental domain, 2016/17, by NHS Board of Residence**

The particularly low proportion of review records from NHS Greater Glasgow & Clyde (GG&C) containing meaningful information for every development domain reflects the fact that from April 2013 NHS GG&C have focused developmental assessments on specific ‘indicator’ domains (in particular Speech, language and communication, and emotional/behavioural domains) and consequently have returned a relatively high proportion of records with no meaningful information for other domains such as children’s motor function, vision, and hearing. NHS GG&C have also had difficulties implementing the new
(from April 2017) review forms hence have been unable to submit information on the Problem solving domain for 2016/17 reviews provided from that date onwards. Both these issues are being resolved. In particular, NHS GG&C intends to start using the ASQ-3 for all 27-30 month reviews during 2018/19.

In 2016/17, the proportion of review records containing meaningful information for every developmental domain was slightly higher for girls (81%) than boys (79%); slightly lower for children living in the most deprived areas of Scotland (79%, SIMD quintile 1) compared to the least deprived areas (82%, SIMD quintile 5); and similar for children who were (81%) and were not (80%) looked after by their Local Authority.

By contrast, the proportion of review records containing meaningful information for every developmental domain was noticeably lower for children from certain ethnic groups (for example 65% for Asian children compared to 81% for White Scottish children); those living in a household where English was not main language spoken (73% compared to 81% for children from English speaking households); and those living in a bi- or multi-lingual household (75% compared to 81% for children in a mono-lingual household). 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.
References

List of Tables

<table>
<thead>
<tr>
<th>File name</th>
<th>File and size</th>
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<tbody>
<tr>
<td>Coverage and outcome of 27-30 month review, 2013/14-2016/17</td>
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Further information is available in the interactive data visualisation and in the open data tables.
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Further Information

ISD 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 in February 2019.

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