

Publication Report



Child Health 27-30 Month Review Statistics

Scotland 2014/15

Publication date – 15 December 2015

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Introduction

NHS Scotland offers a universal health promotion programme to all children and their families known as the child health programme. The programme includes various elements such as formal screening for specific medical problems, routine childhood immunisations and a structured programme of needs assessment, health promotion, and parenting support provided through regular scheduled contacts with health visitors, school nurses and other health professionals.

The delivery of the child health programme to pre-school aged children in Scotland is supported by the CHSP Pre-School system. The system facilitates the invitation of children for specific child health programme contacts as they reach the appropriate age and also allows recording of information obtained and/or care given during the contacts.

The 27-30 month review was introduced in Scotland in April 2013. National guidance on the purpose, content, and delivery of the reviews was published by the Scottish Government in December 2012 in order to support a consistent approach to provision of effective reviews across Scotland (<http://www.scotland.gov.uk/Publications/2012/12/1478>).

The 27-30 month review is universal and should be offered to every child reaching the appropriate age. It is important that there is high coverage of the review to ensure that there is the opportunity to improve children's outcomes. One of the overall priorities identified in the national guidance document is the 'promotion of strong early child development'.

These statistics are published as 'experimental statistics' as they are recently introduced official statistics undergoing evaluation. A key part of the 'experimental' label is user engagement in the evaluation of these statistics to help inform their development. Readers are invited to send comments on the publication to NSS.isdchildhealth@nhs.net.

This is the second publication of statistics on the child health 27-30 month review. There has been a significant change in the methodology used to calculate coverage of the review in this year's publication compared with last year's. Coverage figures in this publication are not comparable with coverage figures in the December 2014 publication. For more information on the change in methodology and the impact of this see [coverage methodology](#). The figures for both 2013/14 and 2014/15 are shown in the accompanying excel workbooks.

Methods and Definitions

Data collection

During 27-30 month reviews, the health professional (normally a Health Visitor) assesses children's developmental status and records the outcome (e.g. no concern, concern newly suspected as a result of the review, or concern or disorder already known prior to the review) against each of nine developmental domains (social, emotional, behavioural, attention, speech language & communication, gross motor, fine motor, vision and hearing). All available records for children turning 27 months in the period are included in the analyses as long as the review took place before the child turned 3 years.

ISD receives quarterly data extracts from the CHSP-PS system for the purpose of producing and publishing statistics.

Coverage Methodology

A number of different methods for assessing the coverage of the 27-30 month review were explored for last year's publication and an '*Estimated Coverage*' method was chosen. '*Estimated Coverage*' was calculated by comparing the total number of 27-30 month reviews completed in a specific time period (for example, 1 April 2013 to 31 March 2014) to the estimated total number of children eligible for review during the same time period. Eligible children were defined as children who turned 27 months during the analysis period (in this example, 1 April 2013 to 31 March 2014) who were registered to receive the child health programme on the Scottish Immunisation & Recall System (SIRS supports the administration of childhood immunisations in Scotland).

In this publication, an improved method '*Achieved Coverage*' has been used to calculate coverage.

In '*Achieved coverage*' the number of children eligible for a 27-30 month review is calculated in the same way as for estimated coverage using data from the SIRS system. However, the number of reviews for these children is calculated differently. Each of the eligible children is linked to their specific 27-30 month review, provided it took place before they turned three years of age, regardless of whether their review happened in the same time period. For example, a child eligible for review in financial year 1 April 2013 to 31 March 2014 might not receive their review until May 2014. In the estimated methodology this review would not have been included as it was outwith the time period of interest.

The '*Achieved Coverage*' approach means there is an inevitable delay before coverage can be calculated. It is necessary to wait until, as far as reasonably possible, all eligible children have received their reviews and these have been recorded on the CHSP Pre-School system. Having examined the first year's data post publication it was felt that this analysis was feasible if data sourcing continued until November of the relevant year. It is likely that the number of reviews provided after November 2015 would be very small however as even the youngest eligible children would have been 34 months, and hence should have already received their review, by that time.

The result of this change in method means that the '*Estimated Coverage*' in last year's publication is not directly comparable with the '*Achieved Coverage*' provided in this publication. Data for children eligible for review in financial year 2013/14 have been updated to the new methodology in this publication and new data for 2014/15 have been added. Last year's publication reported an '*Estimated Coverage*' for 2013/14 of 76%. This publication reports that '*Achieved Coverage*' (from now on referred to as '*coverage*') for children becoming eligible for their review during 2013/14 was 87%. This discrepancy reflects the fact that additional data have been submitted but also that some areas didn't call eligible children immediately after April 2013 (the number of reviews provided during the first quarter of 2013/14 was particularly low), however many of these children did eventually receive their review.

Development Assessment Analysis Methodology

The 27-30 month review records capture the outcome of developmental assessment for the following 9 domains: social, emotional, behavioural, attention, speech language & communication, gross motor, fine motor, vision and hearing. The Health Visitor can record for each domain whether there were no concerns, a concern that was newly suspected as a result of the assessment carried out during the 27-30 month review, a concern or disorder that was known prior to the review, or if the assessment was incomplete. The analysis looks at the responses for all 9 domains individually as well as summary information for all 9 domains combined and the presence of one (or more) concern. All percentages are based on the total number of reviews provided (not the number of reviews with meaningful assessment information recorded nor the population). For more information on developmental assessments please see [Appendix 1](#) (Background Information).

Definitions

Number of children eligible for review (denominator): total number of children turning 27 months during the year 2014/15 who were registered for child health surveillance on the Scottish Immunisation & Recall System (SIRS) in May 2015.

Number of reviews recorded on CHSP-PS (numerator): Number of children eligible for a review in financial year 2014/15 who had a review recorded on the child health system at the time of the data extract, provided the review took place before the eligible children turned 3 years of age.

Percentage Coverage of eligible children reviewed is calculated as:

$$\frac{\text{Number of reviews recorded on CHSP-PS}}{\text{Number of children eligible for review}} \times 100$$

Meaningful developmental assessment outcome data (N, C, P) across all domains: the number of children reviewed who had meaningful assessment data recorded for all 9 development domains. Meaningful data is defined as N=No Concerns, C=Concern newly suspected, or P=Concern/Disorder previously identified.

Key points

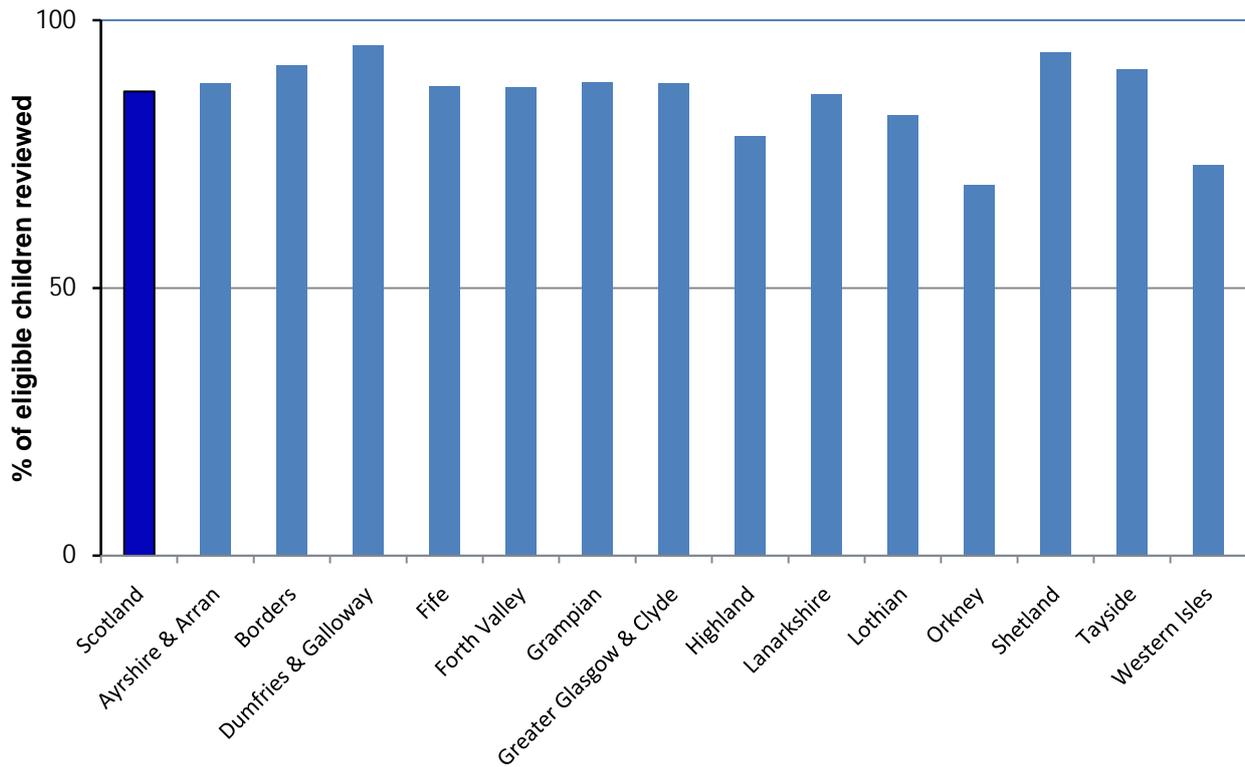
- In 2014/15, the coverage of the 27-30 month review for Scotland was 87% with 50,956 of the 58,779 eligible children having a review by the age of 3 years. Coverage of the review in the mainland boards varied from 78% in NHS Highland to 95% in NHS Dumfries & Galloway.
- 72% of all reviews actively recorded that there were no concerns about any aspects of the child's development. A new or previously known concern was noted for at least one aspect of the child's development in 19% of reviews.
- Children from the most deprived areas were more than twice as likely to have at least one developmental concern identified (27%) than those in the least deprived areas (12%).
- Boys (24%) were considerably more likely than girls (14%) to have at least one developmental concern identified.
- 25% of children reported as 'Asian' or 'Black, Caribbean or African' had at least one developmental concern identified compared to 19% in the White Scottish ethnic group.
- Speech, language & communication was the developmental domain where most concerns were identified. 11% of children reviewed had a newly identified concern about their speech, language & communication and an additional 3% had a known concern in this domain prior to their review.

Results and Commentary

Coverage

Overall the Scottish coverage has remained static at 87% for 2013/4 and 2014/15. For 2014/15, coverage in the mainland boards varied from 78% in NHS Highland to 95% in NHS Dumfries & Galloway (Figure 1).

Figure 1: Coverage of the 27-30 Month Review by NHS Board 2014/15



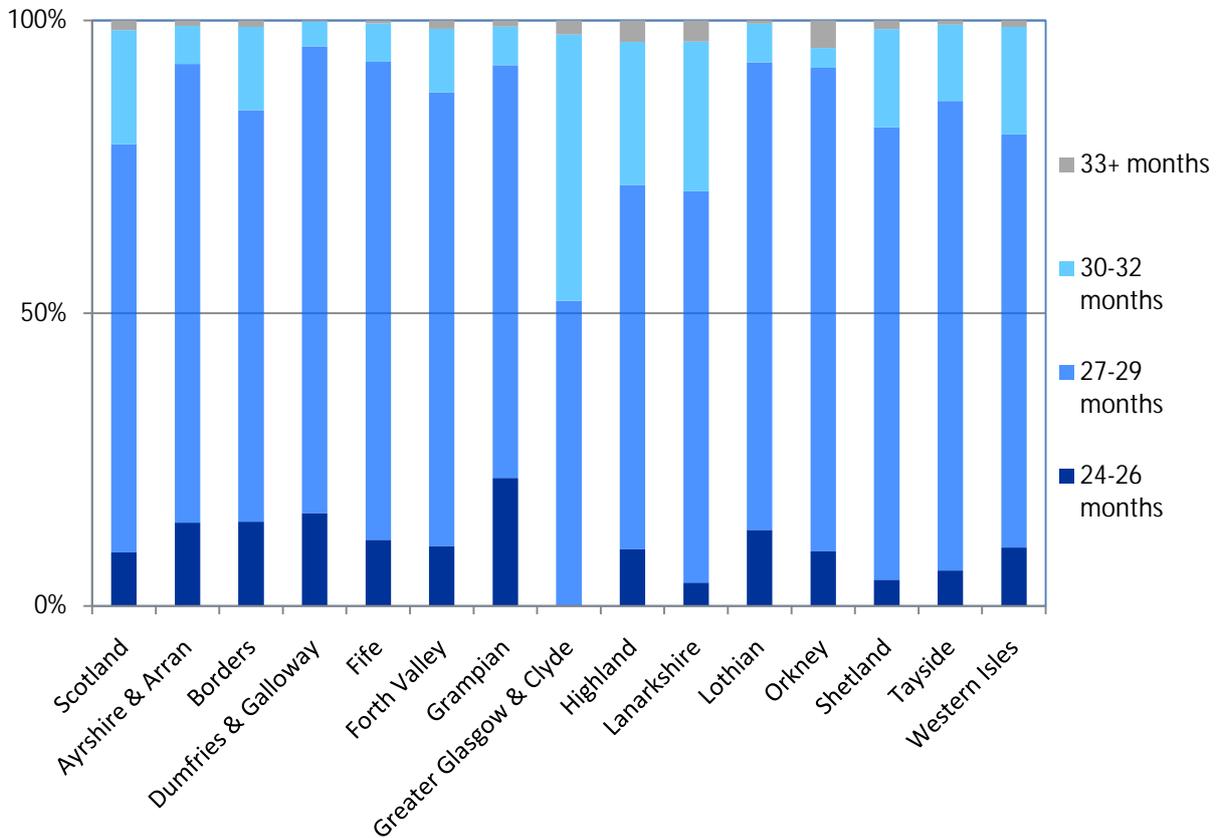
Source: ISD Scotland, CHSP Pre-School Nov 2015

Age at review

There is variation in the timing of reviews carried out by different NHS Boards. The majority of areas start calling children for their review when they turn 27 months but at least one board (NHS Greater Glasgow & Clyde) has implemented the policy slightly differently and calls children when they reach 29 months which may have an impact on achieved review coverage and on the outcome of developmental assessment.

Figure 2 shows the age at which reviews were carried out. 52% of reviews in NHS Greater Glasgow & Clyde were carried out between 27-29 months, compared with 82% in NHS Fife. Some boards also chose to carry out their reviews before 27 months as NHS Grampian carried out over a fifth of their reviews before 27 months.

Figure 2 - Age group at review by NHS Board for children attaining 27 months in 2014/15



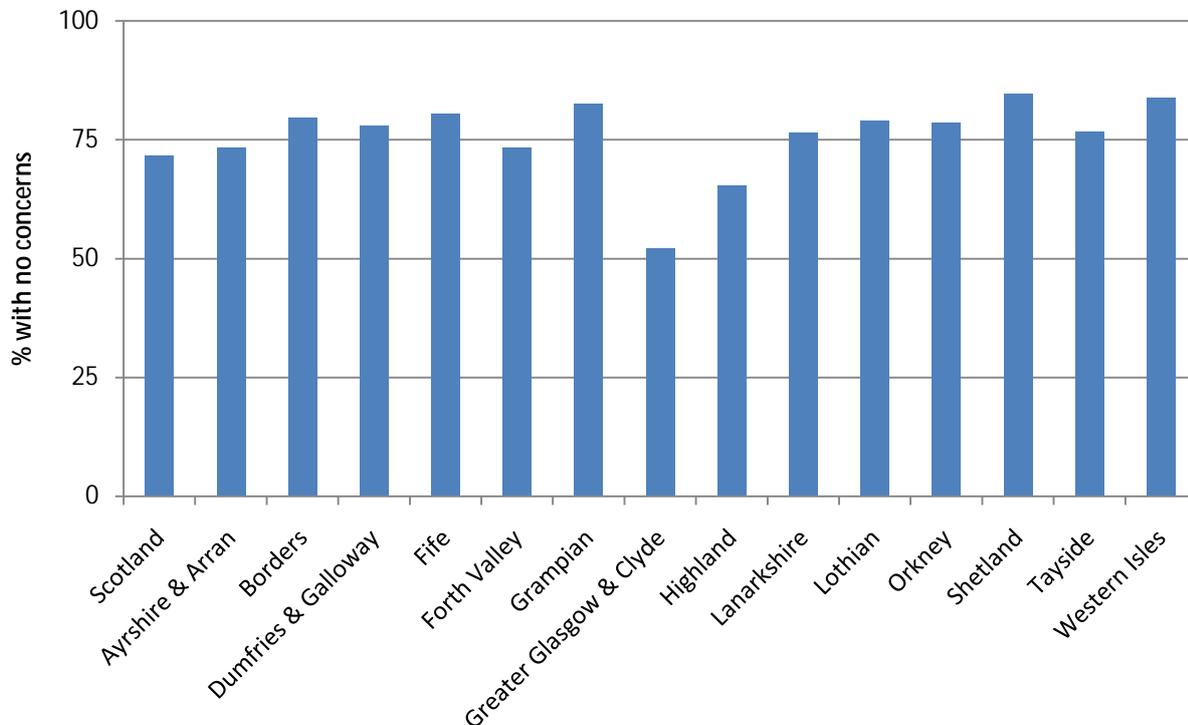
Source: ISD Scotland, CHSP Pre-School Nov 2015

Developmental Assessments

For children turning 27 months during 2014/15 the number of 27-30 month reviews completed was 50,956. Of these completed reviews 88% had meaningful assessment information recorded against each developmental domain. Eleven out of fourteen Boards recorded meaningful information against all development domains for 90% or more of children reviewed. From the mainland Boards NHS Tayside recorded the highest level of meaningful information across all domains with 98%.

In 2014/15, 72% of all children receiving a review had ‘no concerns’ recorded against all of the nine developmental domains in their 27-30 month review. The percentage of children with no developmental concerns varied across the mainland Health Boards from 52% in NHS Greater Glasgow & Clyde to 83% in NHS Grampian (Figure 3).

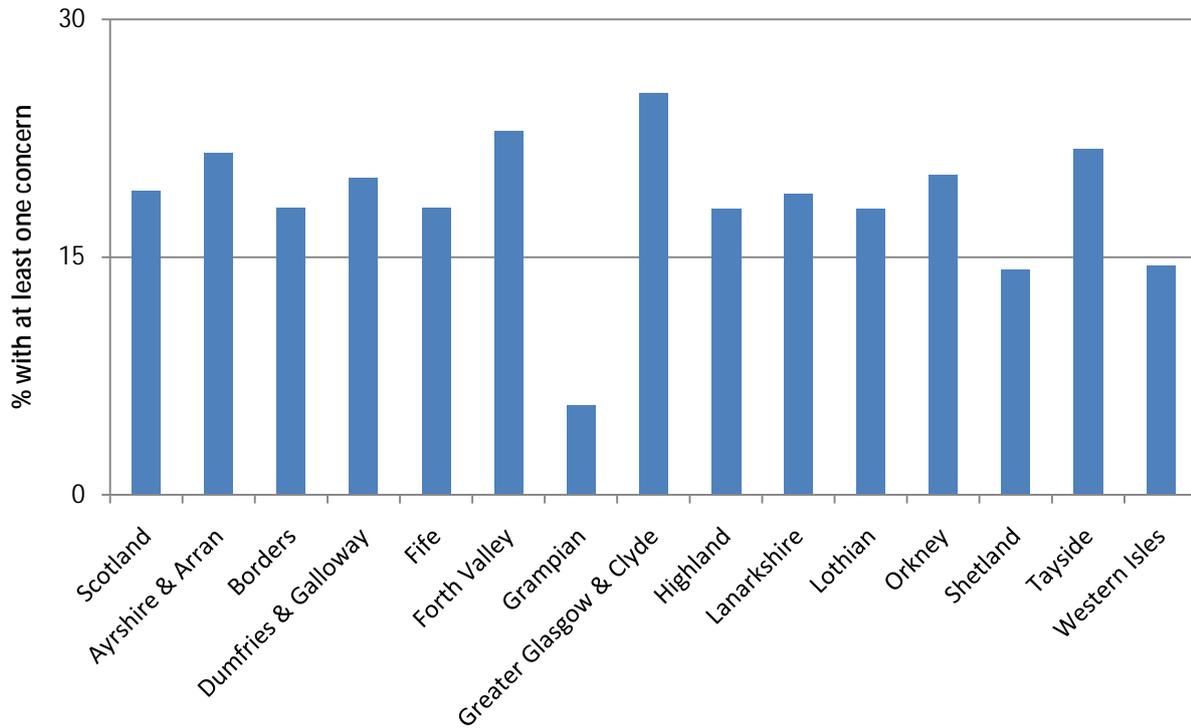
Figure 3 - Percentage of children reviewed with no concerns recorded against each developmental domain, by NHS Board; 2014/15



Source: ISD Scotland, CHSP Pre-School Nov 2015

Children who are not included in the ‘no developmental concerns’ category include those that had specific concerns recorded and those that had incomplete or missing information recorded for one or more domains. Some of the variation between Boards in ‘no concern’ rates is therefore likely to reflect variation in data completeness as well as genuine variation in rates of concerns. In particular NHS Highland had 15% of information not recorded for each domain, and NHS Grampian had 11% not recorded. It should also be noted that NHS Greater Glasgow & Clyde had incomplete assessment information recorded against a quarter of their vision and hearing assessments. For these reasons it is also useful to consider the percentage of children with a new or previously identified concern recorded against at least one domain (Figure 4).

Figure 4 - Percentage of children reviewed with a new or previously identified concern in at least one developmental domain, by NHS Board; 2014/15

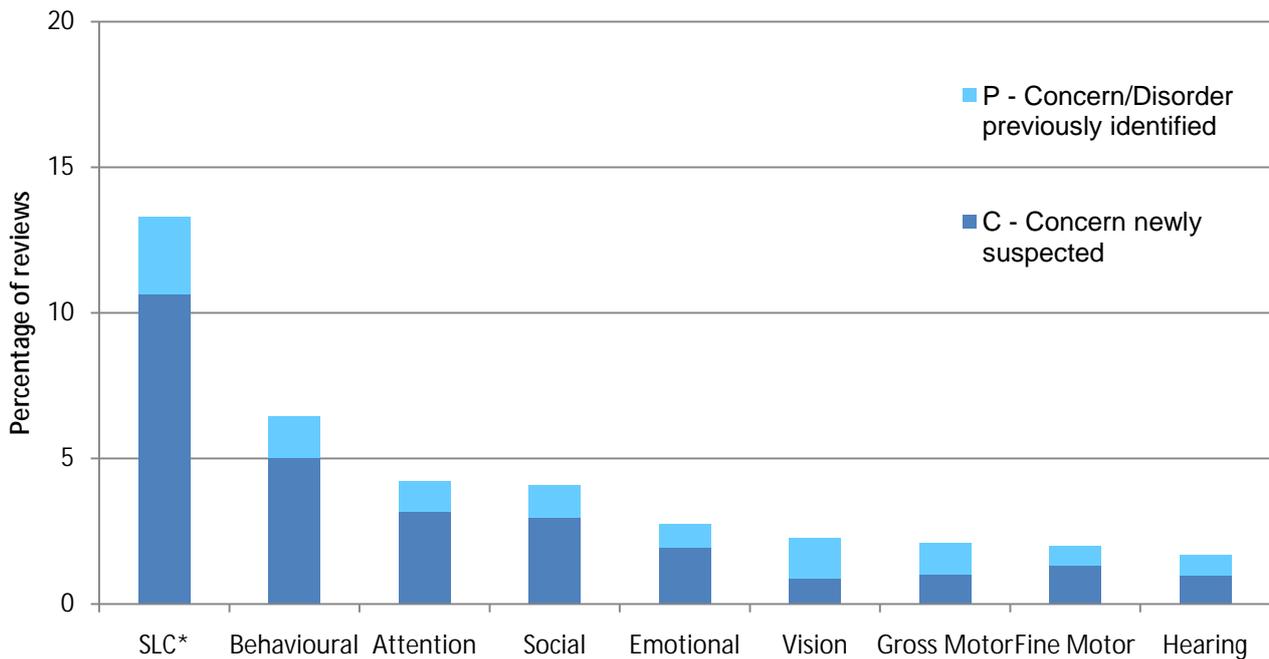


Source: ISD Scotland, CHSP Pre-School Nov 2015

Speech, language & communication was the domain where most concerns were identified (Figure 5). 11% of children reviewed had a concern newly identified about their speech, language & communication and an additional 3% had a known concern in this domain prior to their review.

In comparison around 2% of those assessed had either a concern newly identified or a known concern prior to their review, in one of the gross motor, fine motor, vision or hearing domains.

Figure 5 - Percentage of newly suspected and previously identified concerns in Scotland by developmental domain; 2014/15



*SLC - Speech, language & communication

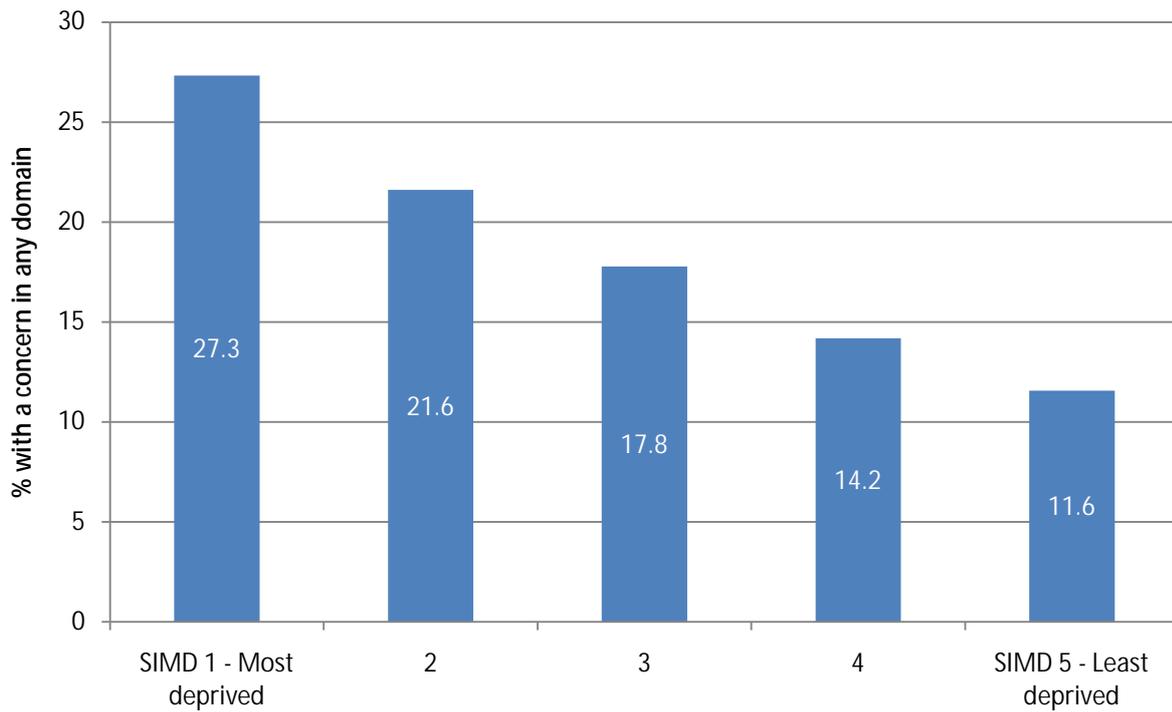
Source: ISD Scotland, CHSP Pre-School Nov 2015

Substantial differences by Health Board can be observed across the individual domains. For example 13% of those children reviewed in NHS Ayrshire & Arran, NHS Lanarkshire & NHS Tayside had a concern newly identified for speech, language & communication compared to 3% in NHS Grampian. Also, 10% of children in NHS Greater Glasgow & Clyde were identified as having a newly identified behavioural concern compared with 1% in NHS Grampian. These differences may be partly due to variation between NHS Boards in the assessment tools/questionnaires they use. See [Appendix A1](#) for further information on the different approaches.

Deprivation

Children from more deprived areas are slightly less likely to have had a 27-30 month review carried out in 2014/15 (84.5% in most deprived areas compared to 86.9% in least deprived). They are also slightly less likely to have meaningful information recorded against the reviews. That said, there is a clear association between deprivation and developmental concerns with children from the most deprived areas more than twice as likely to have at least one developmental concern (Figure 6).

Figure 6 – Percentage with a new or previously identified concern in at least one development domain by deprivation quintile 2014/15

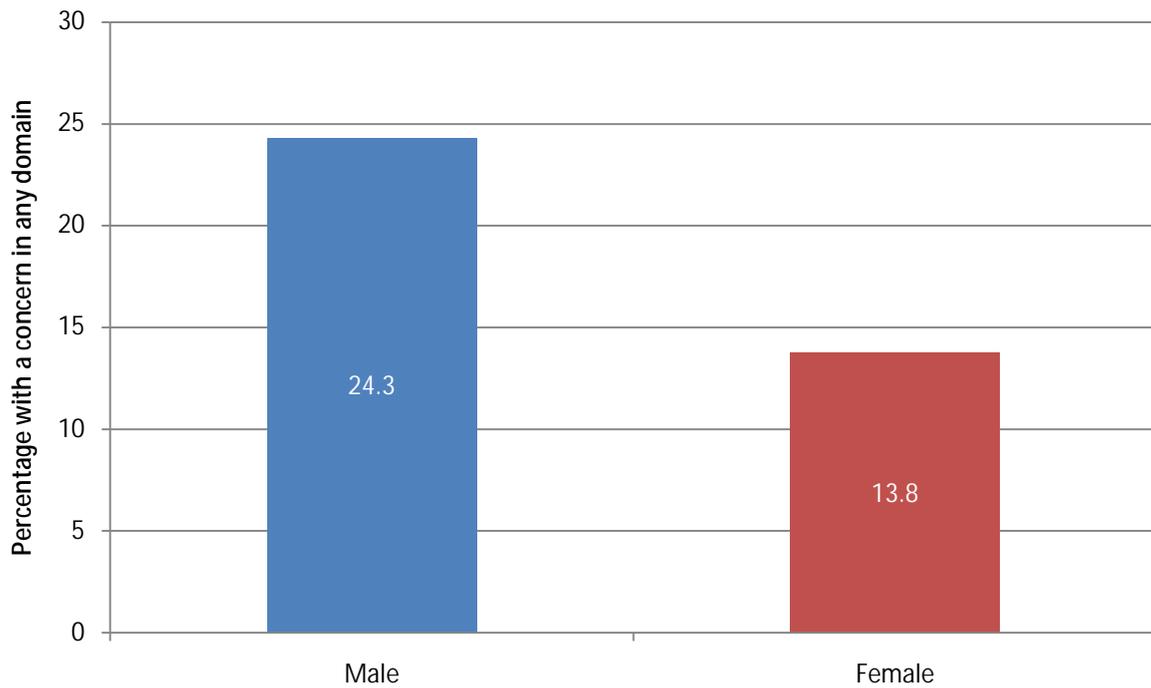


Source: ISD Scotland, CHSP Pre-School Nov 2015

Gender

Males and females had roughly the same percentage of reviews carried out in 2014/15 (86.9% compared to 86.5%), but females were slightly more likely to have meaningful assessment information recorded (88.4% females compared to 87.3% males). Almost a quarter of males had at least one developmental concern recorded (24%), compared with 14% of females. 18% of males had a new or previously identified concern with speech, language and communication compared with 8% of females.

Figure 7 – Percentage with a new or previously identified concern in any developmental domain by gender 2014/15



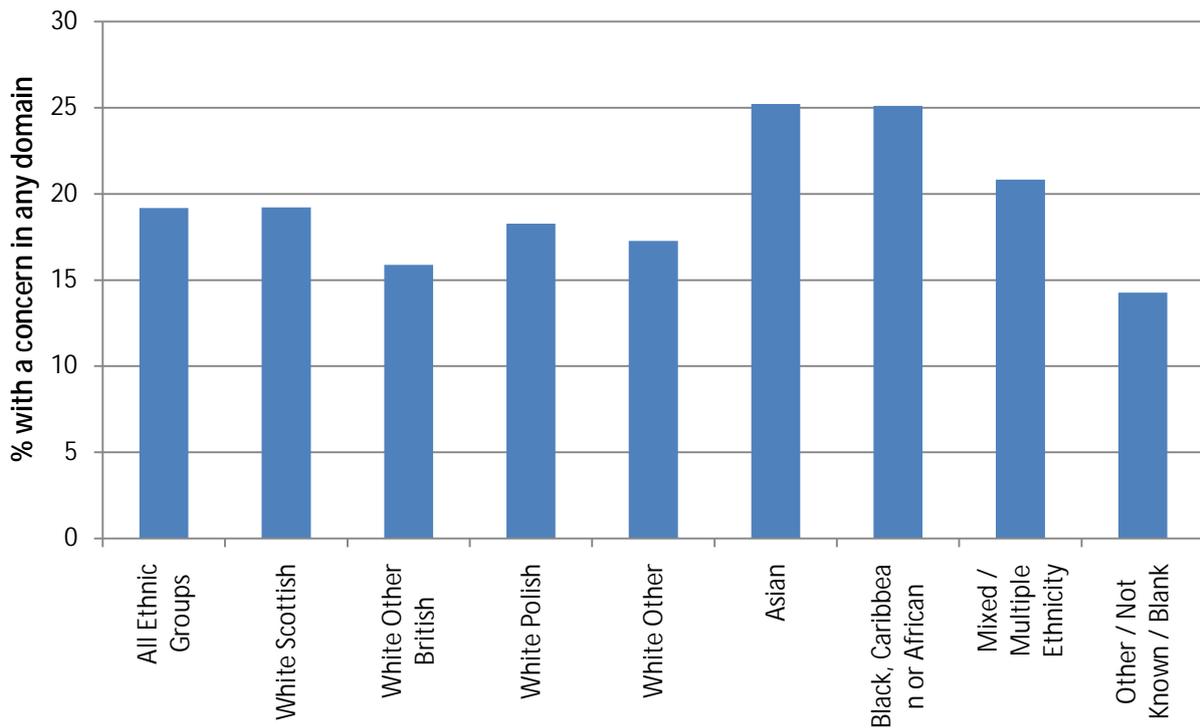
Source: ISD Scotland, CHSP Pre-School Nov 2015

Ethnicity

Children from minority ethnic backgrounds were less likely to have meaningful assessment data recorded, but despite this they were more likely to have a developmental concern identified.

Figure 8 shows that 19% of white Scottish children had at least one developmental concern identified compared with 25% of ‘Asian’ or ‘Black, Caribbean or African’ children.

Figure 8 – Percentage with a new or previously identified concern in any developmental domain by ethnicity 2014/15



Source: ISD Scotland, CHSP Pre-School Nov 2015

Glossary

CHSP Pre-School	Child Health System Programme Pre-School
CHI	Community Health Index
ISD	Information Services Division
SIMD	The Scottish indicator of multiple deprivation. Deprivation is reported via the use of Scottish Index of Multiple Deprivation. See Appendix A1 for more information.
SIRS	Scottish Immunisation & Recall System. SIRS covers the entire child population in Scotland up to six years of age. The data are recorded on SIRS for the primary purpose of facilitating the invitation of children for immunisation. SIRS began in the 1970s and has been used by all NHS boards since 2002.
SLC	Speech Language and Communication

List of Tables

Table No.	Name	Time period*	File & size
1,2,3 (Board)	Coverage and outcome of assessment at 27-30 month review by NHS Board	Financial years 2013/14- 2014/15	Excel [883kb]
4,5,6 (LA)	Coverage and outcome of assessment at 27-30 month review by local authority	Financial years 2013/14- 2014/15	Excel [1030kb]
7,8,9 (Equality & Diversity)	Coverage and outcome of assessment at 27-30 month review by SIMD, gender & ethnicity for Scotland	Financial years 2013/14- 2014/15	Excel [943kb]

*The financial year relates to the time period in which the eligible children turn 27 months, and not necessarily when the review was carried out

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Further Information

Further information can be found on the [ISD website](#).

ISD Scotland publishes a wide range of information on Child Health including breastfeeding, immunisations, and Primary 1 Body mass Index (BMI). Further information can be found in the [Child Health](#) section on the ISD website.

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Appendix

A1 – Background Information

Information on data sources, methods and definitions can be found in the main report – [Methods and Definitions](#).

Developmental Assessment Tools

The national guidance (<http://www.scotland.gov.uk/Publications/2012/12/1478>) recommended that 27-30 month reviews should include 'systematic consideration of all children's development as part of ongoing surveillance'. The guidance described developmental surveillance as comprising the following steps:

- Asking parents/carers about any concerns they have regarding their child's development
- Asking parents/carers about their child's developmental abilities and attainment of relevant milestones
- Structured observation of the child within the context of the review to assess their developmental progress
- Then, if there are any uncertainties or concerns (from the parent/carer or Health Visitor) about the child's development, using an appropriate developmental assessment questionnaire to obtain objective information on the child's developmental status and to help inform decisions about further assessment and support needs.

The validated questionnaires that were recommended in the guidance as suitable for use in 27 month old children were:

- Ages and Stages Questionnaire 3 (ASQ 3 – all developmental domains)
- Schedule of Growing Skills II (SOGS II – all developmental domains)
- Strengths and Difficulties Questionnaire (SDQ – social/emotional domains)
- ASQ: Social and Emotional (ASQ:SE – social/emotional domains)
- Sure Start Language Measure (SSLM – speech and language domain)
- Modified Checklist for Autism in Toddlers (M-CHAT – autism risk)
- Eyberg Child Behaviour Inventory (Eyberg CBI – behavioural difficulties)

NHS Boards adopted different approaches to incorporating the use of the various recommended developmental assessment questionnaires within 27-30 month reviews. Some NHS Boards intended offering questionnaires to all children/parents invited for reviews rather than just administering them if/when a problem was suspected. NHS Boards also differed in the questionnaires they intended to select from the national list for use locally.

In November 2014, ISD produced a supplementary paper on ['Use of developmental assessment questionnaires within 27-30 month child health reviews: insights from the first year of review delivery'](#) which provides more information on the different approaches to assessing development within 27-30 month reviews that different areas were taking and the impact this may have had on both data completeness and the number and type of concerns identified.

Geographical information

NHS Board figures are based on the child's home postcode on the data extract of eligible children from SIRS taken in May. For a small proportion of records postcode data is not available and therefore it is not possible to derive an NHS Board; these records are included in the Scotland total. For the vast majority of children, the NHS Board of residence will be the same as the NHS Board providing the review; therefore NHS Board of review has been used as a proxy for NHS Board of residence when the postcode of residence is missing. Records on the system for the former Argyll & Clyde NHS Board area cannot be amended in this way and so NHS Board of residence will remain unknown. Thus, the sum of the NHS Board areas is slightly less than the Scotland total.

Figures by Local Authority (LA) are based on the child's home postcode on the eligible children data extract from SIRS. For a small proportion of records postcode data is not available and therefore it is not possible to derive a LA; these records are included in the Scotland total. Figures for LAs which share boundaries with a NHS Health Board (e.g. Fife) may differ slightly from figures presented at NHS board level as the proxy allocation for NHS Board or residence described above cannot be applied, or the postcode is not available or there is no mapping to LA.

Scottish Index of Multiple Deprivation (SIMD)

Deprivation is reported using Scottish Index of Multiple Deprivation (SIMD) quintiles matched via the postcode on the extract of eligible children taken from SIRS.

Deprivation is estimated from aggregate data derived from the census and other routine sources. These are used to estimate the deprivation of small geographical areas. The SIMD has seven domains (income, employment, education, housing, health, crime, and geographical access), which have been combined into an overall index to pick out area concentrations of multiple deprivation. SIMD use population weighting when using SIMD. The deprivation quintiles relate to equal fifths of the whole population.

Further information about SIMD can be found at:

<http://www.isdscotland.org/Products-and-Services/GPD-Support//Deprivation/SIMD>

A more detailed explanation about the application of SIMD, its advantages and disadvantages is available at: <http://www.isdscotland.org/Products-and-Services/GPD-Support/Deprivation/docs/PHI-Deprivation-Guidance-version-2.2-100615.pdf>

A2 – Publication Metadata (including revisions details)

Metadata Indicator	Description
Publication title	Child Health 27-30 Month Review Statistics Scotland Financial year 2014/15
Description	Release of statistics from the 27-30 month review. Figures are presented for 2014/15 for the first time and revised figures are published for 2013/14. Information is provided on the coverage of the review and the outcome of developmental assessments. Figures are presented by Health Board, Local Authority, Deprivation, Gender and Ethnicity groupings.
Theme	Health and Social Care
Topic	Child Health
Format	PDF document and Excel workbooks
Data source(s)	Child Health Systems Programme Pre-School (CHSP Pre-School) Scottish Immunisation and Recall System (SIRS)
Date that data are acquired	7 November 2015
Release date	15 December 2015
Frequency	Annual
Timeframe of data and timeliness	Data recorded on CHSP pre-school on 27-30 months reviews up to the data extract on 7 November. Children eligible for the 27-30 month review in financial years 2013/14 and 2014/15. No delays between receipt and processing of data for publication.
Continuity of data	All fourteen Health Boards provided data for 2013/14 and 2014/15.
Revisions statement	The data has a revision to the coverage methodology from the December 2014 publication. See revisions relevant to this publication for more information.
Revisions relevant to this publication	The methodology used for calculating coverage has changed significantly between this publication and the December 2014 publication. Comparisons between coverage in the 2014 publication and the December 2015 publication are not valid. Figures for 2013/14 have been updated in this publication and comparisons between years in this publication are valid. See coverage methodology for more information.
Concepts and definitions	See Methods and Definition section of the publication.
Relevance and key uses of the statistics	Monitoring the delivery of the 27-30 month review and making information publicly available for planning, provision of services and providing comparative information.

Accuracy	Programmes were checked and data was compared with the revised figures for the previous year.
Completeness	See Coverage methodology
Comparability	N/A
Accessibility	It is the policy of ISD Scotland to make its web sites and products accessible according to published guidelines .
Coherence and clarity	Tables and charts are accessible via the ISD website . Information is presented by NHS Board and LA.
Value type and unit of measurement	Numbers and percentages
Disclosure	The ISD protocol on Statistical Disclosure Protocol is followed.
Official Statistics designation	Official Statistics
UK Statistics Authority Assessment	These are new experimental statistics which have not been submitted for assessment by the UK statistics Authority.
Last published	December 2014
Next published	January 2017
Date of first publication	December 2014
Help email	NSS.isdchildhealth@nhs.net
Date form completed	01 December 2015

A3 – Early Access details (including Pre-Release Access)

Pre-Release Access

Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ISD are obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access.

Standard Pre-Release Access:

- Scottish Government Health Department
- NHS Board Chief Executives
- NHS Board Communication leads

A4 – ISD and Official Statistics

About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up.

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Purpose: To deliver effective national and specialist intelligence services to improve the health and wellbeing of people in Scotland.

Mission: Better Information, Better Decisions, Better Health

Vision: To be a valued partner in improving health and wellbeing in Scotland by providing a world class intelligence service.

Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD.

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- National Statistics (ie assessed by the UK Statistics Authority as complying with the Code of Practice)
- National Statistics (ie legacy, still to be assessed by the UK Statistics Authority)
- Official Statistics (ie still to be assessed by the UK Statistics Authority)
- other (not Official Statistics)

Further information on ISD's statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the [ISD website](#).