

National Dental Inspection Programme (NDIP) 2016

Report of the 2016 Detailed National Dental Inspection Programme of Primary 1 children and the Basic Inspection of Primary 1 and Primary 7 children

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Introduction

The 2016 National Dental Inspection Programme (NDIP) in school year 2015/16

The National Dental Inspection Programme (NDIP) is carried out annually with the support and approval of the Scottish Dental Epidemiology Co-ordinating Committee. Its principal aims are to inform parents/carers of the oral health status of their children and, through appropriately anonymised, aggregated data, advise the Scottish Government, NHS Boards and other organisations concerned with children's health of oral disease prevalence at national and local levels. This ensures that reliable oral health information is available for planning initiatives directed towards health improvements.

Two school year groups are involved: i) at entry into Local Authority schools in primary one (P1) and ii) in primary seven (P7) before the move to secondary education. The Inspection Programme has two levels: a *Basic Inspection* (intended for all P1 and P7 children) and a *Detailed Inspection* (where a representative sample of either the P1 or the P7 age group is inspected in alternate years).

This year's report focuses on the results of the *Detailed Inspection* of P1 school children in school year 2015/16 (noted as 2016 throughout the report). Information relating to the *Basic Inspection* of both P1 and P7 children can be found in [Appendix A6](#) of this Report. An Executive Summary of the main findings can be found at <http://www.isdscotland.org/Health-Topics/Dental-Care/National-Dental-Inspection-Programme/>.

Key Definitions

Detailed Inspection

- A comprehensive assessment of the mouth of each inspected child using a light, mirror and ball-ended probe.
- It involves recording the status of each surface of each tooth in accordance with international dental epidemiological conventions.
- It measures obvious decay into dentine (see below) when seen under school (rather than dental surgery) conditions.
- More information on the different stages of dental decay can be found in [Appendix A1](#).
- Those undertaking the inspections attend (and pass) a training and calibration course prior to the annual inspection process. Details of the course and of the calibration results can be found in [Appendix A2](#).

Obvious Decay (d₃)

- This is when the disease process clinically appears to have penetrated dentine (i.e. the layer below the outer white enamel of the teeth) on a tooth surface.
- This is described internationally as decay at the d₃ level and includes *pulpal decay* (i.e. decay into the deeper dental pulp).
- The definition of decay used here is in accordance with the British Association for the Study of Community Dentistry (BASCD) guidelines and international epidemiological conventions, thus allowing comparisons to be made over time and with other countries in Europe and beyond.

- This is a different diagnostic level from that used by many dentists when examining patients in a dental surgery, i.e. for dental check-ups.
- Decay is also known as caries.

Obvious Decay Experience (d_3mft)

- The sum of teeth which have decay into dentine (including teeth with fillings which require further treatment), filled teeth and teeth that are missing (extracted) due to decay. A hierarchy was used to ensure there was no double counting of teeth.
- Thus no obvious decay experience has $d_3mft=0$.

Care Index

- The percentage of teeth with obvious decay experience in a population that have been treated restoratively (filled).
- This is calculated as follows:

$$\frac{\text{number of filled teeth}}{\text{number of obvious decayed, missing and filled teeth}} \times 100$$

or simply

$$\frac{ft}{d_3mft} \times 100.$$

Scottish Index of Multiple Deprivation (SIMD)¹

- A tool for measuring the extent of deprivation across Scotland.
- Uses several different aspects of deprivation, combining them into a single index.
- This report looks at different versions of SIMD, broken down by both quintiles and deciles, It should be noted, the labelling of the deprivation categories changed order, e.g. for SIMD 2012, '1 (most deprived)' ... '5 (least deprived)' and for SIMD 2006, '1 (least deprived)' ... '5 (most deprived)' - see [glossary](#) for more details.

Slope Index of Inequality (SII)

- The absolute difference overall in obvious decay experience (d_3mft) score when moving across the socio-economic (SES) spectrum. It shows the total experience of individuals in the whole population and it is considered to be a consistent indicator with local populations.

Relative Index of Inequality (RII)

- The relative difference in obvious decay experience (d_3mft) when moving across the socio-economic (SES) spectrum. This can be calculated by dividing the SII by the mean level of decay in the population.

SiC, SiC10 and SCIM10 (see below) are all considered to be non-socio-economic (non-SES) based tests of inequality.

Significant Caries Index (SiC)²

- Used to bring attention to the individuals with the highest caries values in each population under investigation. The Significant Caries Index is calculated as follows:

- Individuals are sorted according to their d_3mft values
- The third of the population with the highest caries scores is selected
- The mean d_3mft for this subgroup is calculated. This value is the SiC Index.

Significant Caries Index 10 (SiC10)

- This is calculated in the same way as SIC but instead of taking the third of the population with the highest mean d_3mft scores, the top tenth is chosen and this tenth of the sample with the most teeth affected by obvious decay experience was calculated.

Scottish Caries Inequality Metric (SCIM10)³

- The area under the curve in relation to the distribution of the tenths of the population by obvious decay experience (d_3mft).

Specific Goals of the Detailed Inspection

- To determine current levels of obvious decay experience nationally and across the NHS Boards.
- To determine the influence of deprivation on the dental health of children in Scotland.

How many children had a Detailed Inspection?

Each NHS Board is required to identify the number of Local Authority (LA) schools needed to obtain a representative sample of a given size from their P1 population. The sample sizes used provide adequate numbers to allow meaningful statistical comparisons between NHS Boards. Whole classes are randomly selected to simplify the process for schools while ensuring that results are representative of the P1 population in Scotland.

Between November 2015 and June 2016, 15,365 children (or more than 25% of the estimated P1 population) from Local Authority Schools across Scotland were included in the Detailed Inspection (Table 1). Across the NHS Boards, the percentage of P1 children inspected ranged from 9% to 91%.

NHS Boards can choose to increase the sample size above minimum requirements to aid local planning needs, and some less populated Boards need to include large proportions to achieve statistically meaningful results.

The average age of the children examined (both girls and boys) was 5.5 years. The range of ages across Scotland was 4.2 – 6.9 years.

Table 1. Estimated Primary 1 population and the number and percentage who received a Detailed Inspection by NHS Board across Scotland in school year 2015/16¹⁻⁴

NHS Board	Estimated Primary 1 (P1) population	Number of P1 children receiving a Detailed Inspection	% of P1 population receiving a Detailed Inspection
Ayrshire & Arran	4,020	1,139	28.3
Borders	1,196	343	28.7
Dumfries & Galloway	1,526	386	25.3
Fife	4,269	397	9.3
Forth Valley	3,404	1,580	46.4
Grampian	6,714	3,287	49.0
Greater Glasgow & Clyde	12,286	3,459	28.2
Highland	3,495	634	18.1
Lanarkshire	7,722	903	11.7
Lothian	9,984	1,763	17.7
Orkney	235	213	90.6
Shetland	276	215	77.9
Tayside	4,378	796	18.2
Western Isles	275	250	90.9
Scotland	59,780	15,365	25.7

Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. Primary 1 population is estimated using an aggregated population lookup file of children aged 5 (2014).
4. The estimated Primary 1 population of Orkney and Shetland was increased for analytical purposes.

Main points

- More than two thirds (69%) of P1 children had no obvious decay experience in their primary teeth in 2016. This is a large improvement since ISD started recording this information in 2003 (45%).
- The average number of P1 children's teeth affected by obvious decay experience in 2016 is 1.21. This is less than half of the average number of teeth affected in 2003 (2.76).
- Inequalities remain, with only 55% of P1 children having no obvious decay experience in the most deprived areas compared with 82% in the least deprived areas.
- Note no obvious decay experience means there are no obvious decayed, missing or filled teeth.

Results and Commentary

Detailed Inspection Results

What are the obvious decay experience results for the teeth of P1 children in NHS Boards in Scotland?

Table 2 provides details of the results for all 14 NHS Boards across Scotland. In this 2016 survey, 31% of P1 children in Scotland had obvious decay experience in their primary teeth. For those children, the mean number of affected teeth was 3.93. This ranged across the Boards from 2.80 in children in Borders to 4.36 in children in Lothian. The number of teeth affected in an individual child varied from one tooth to all 20 teeth.

Table 2. Obvious decay experience in primary teeth of P1 children for each NHS Board and Scotland in 2016¹⁻³

NHS Board	% with no obvious decay experience in primary teeth	Mean number of:					decayed, missing and filled teeth for those with obvious decay experience (d ₃ mft>0)
		decayed, missing and filled teeth (d ₃ mft)	decayed teeth (d ₃ t)	missing teeth (mt)	filled teeth (ft)		
Ayrshire & Arran	72.5	1.06	0.59	0.32	0.14	3.82	
Borders	76.2	0.66	0.33	0.11	0.22	2.80	
Dumfries & Galloway	68.1	1.32	1.04	0.17	0.11	4.11	
Fife	67.2	1.26	0.67	0.38	0.21	3.83	
Forth Valley	69.7	1.20	0.85	0.17	0.18	3.97	
Grampian	70.2	1.09	0.68	0.23	0.19	3.75	
Greater Glasgow & Clyde	68.2	1.29	0.80	0.31	0.18	4.07	
Highland	71.9	1.03	0.67	0.20	0.16	3.63	
Lanarkshire	66.2	1.42	0.90	0.41	0.11	4.26	
Lothian	70.3	1.29	0.81	0.29	0.18	4.36	
Orkney	79.1	0.76	0.38	0.14	0.25	3.64	
Shetland	79.4	0.70	0.53	0.01	0.16	3.44	
Tayside	68.5	1.18	0.75	0.28	0.15	3.71	
Western Isles	79.0	0.65	0.40	0.00	0.25	3.10	
Scotland	69.4	1.21	0.76	0.27	0.18	3.93	

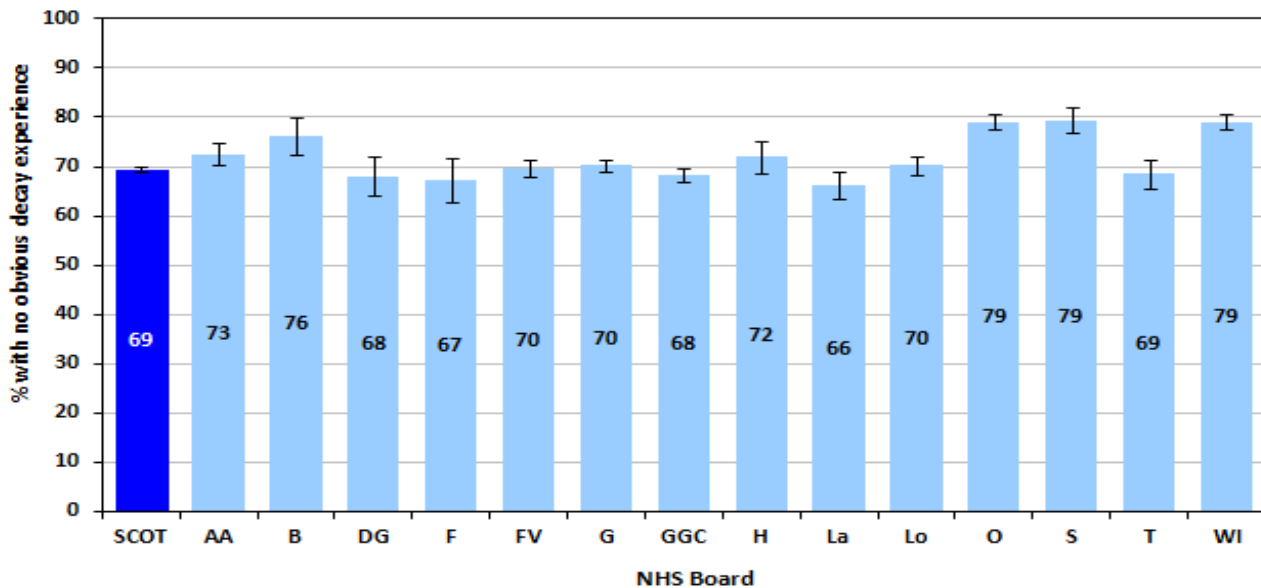
Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. The definitions of d₃mft, dt, mt, ft and d₃mft>0 can be found in the [Glossary](#).

What percentage of P1 children in Scotland had no obvious decay experience in 2016?

In Scotland, 69% of P1 children fell into this category, with a range of 66% in NHS Lanarkshire to 79% in NHS Orkney, NHS Shetland, and NHS Western Isles across the 14 NHS Boards. Figure 1 shows the percentages and the 95% confidence intervals for P1 children free from decay.

Figure 1. Percentage of P1 children in Scotland with no obvious decay experience in 2016; by NHS Board¹⁻⁴



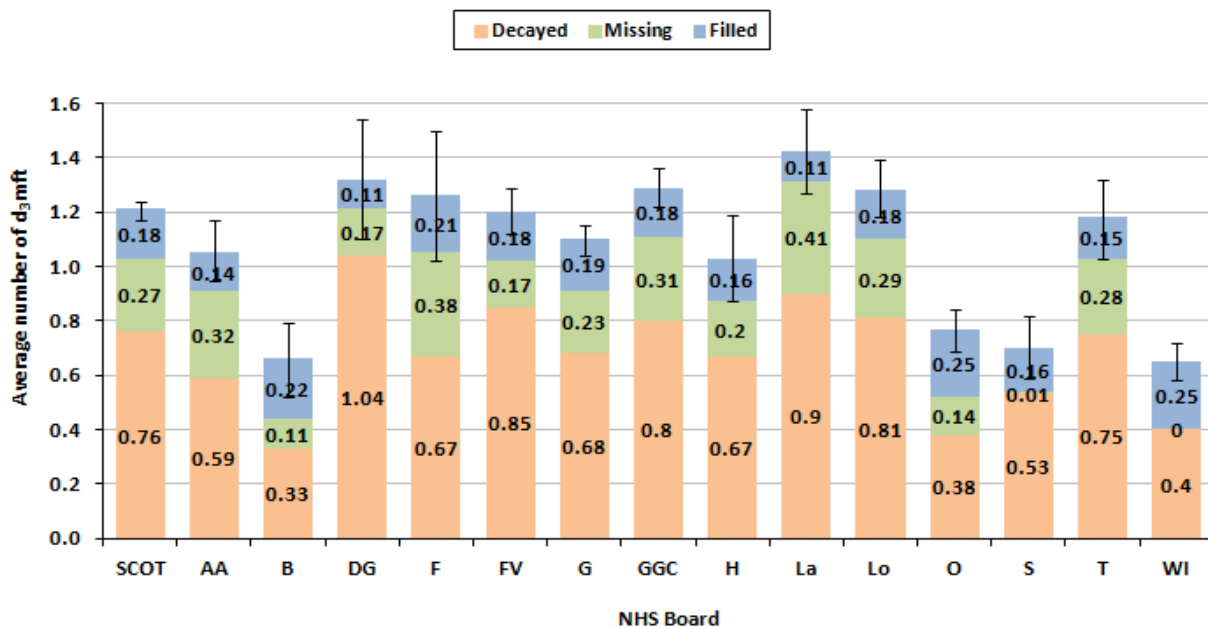
Source: ISD NDIP Database

1. No obvious decay experience is when $d_3mft=0$.
2. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
3. Based on NHS Board boundaries as defined in 2014.
4. A key for the NHS Board abbreviations can be found in the [Glossary](#).

What levels of obvious decay experience were seen in P1 children in 2016?

The average number of obvious decayed, missing and filled teeth (d_3mft) across all P1 children inspected in Scotland was 1.21. This ranged from 0.65 in NHS Western Isles to 1.42 in NHS Lanarkshire across the 14 NHS Boards in Scotland. Figure 2 shows the mean numbers and 95% confidence intervals for P1 children.

Figure 2. Mean number of obvious decayed, missing and filled primary teeth (d_3mft) of P1 children in 2016 in Scotland and by NHS Board¹⁻³



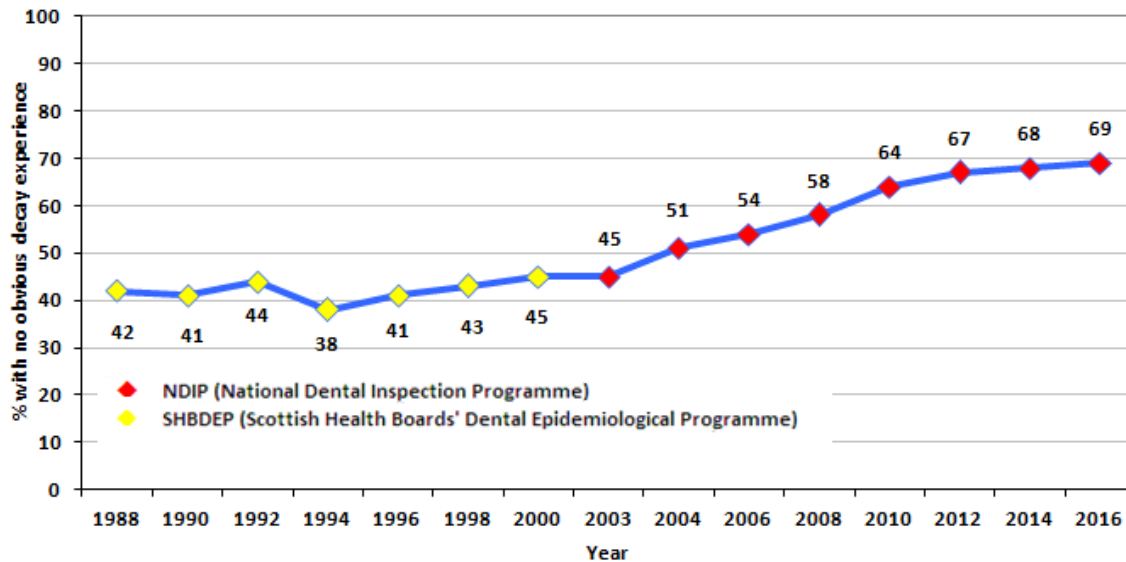
Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. A key for the NHS Board abbreviations can be found in the [Glossary](#).

How has the dental health of P1 children in Scotland changed over time?

Figure 3 shows there has been a small increase since 2014 in the percentage of P1 children with no obvious decay experience ($d_3mft=0$), but a large increase since 2003.

Figure 3. Trends in the percentage of P1 children with no obvious decay experience in Scotland; 1988-2016¹

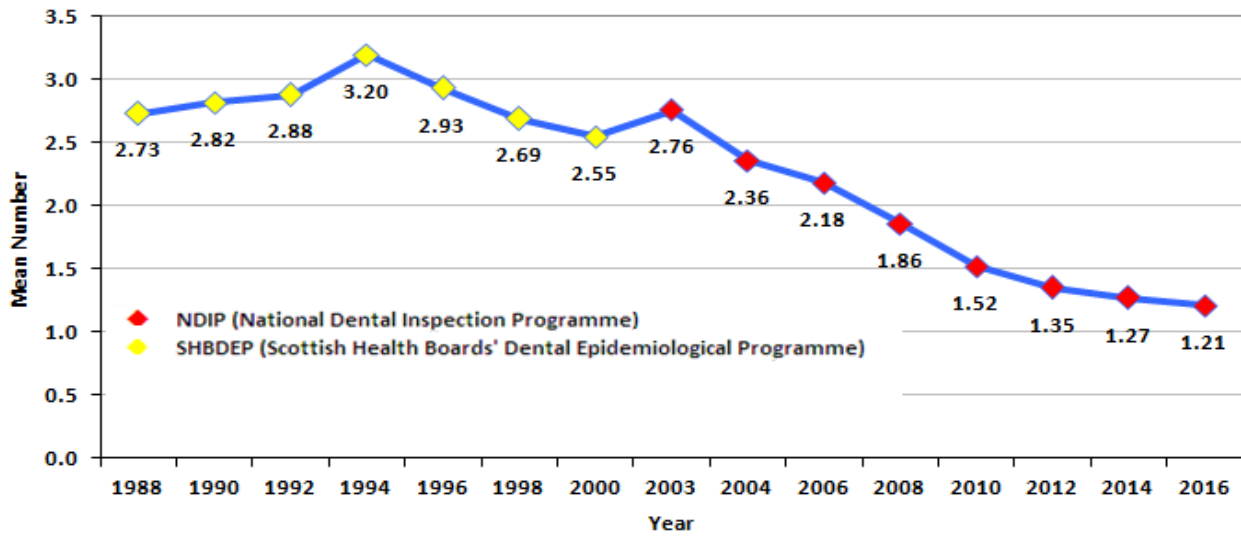


Sources: ISD NDIP Database, SHBDEP

1. The distance between each point does not represent an equal period of time as the results have not been published consistently over the 28 year period.

Similarly, there has been a continuing decline (improvement) in the mean number of decayed, missing and filled primary teeth for the P1 population as a whole (Figure 4) and also for the subgroup with obvious decay experience (Figure 5). In the subgroup of children with obvious decay experience, the mean number of decayed, missing and filled teeth is 3.93 – which is a significant number of teeth affected by decay.

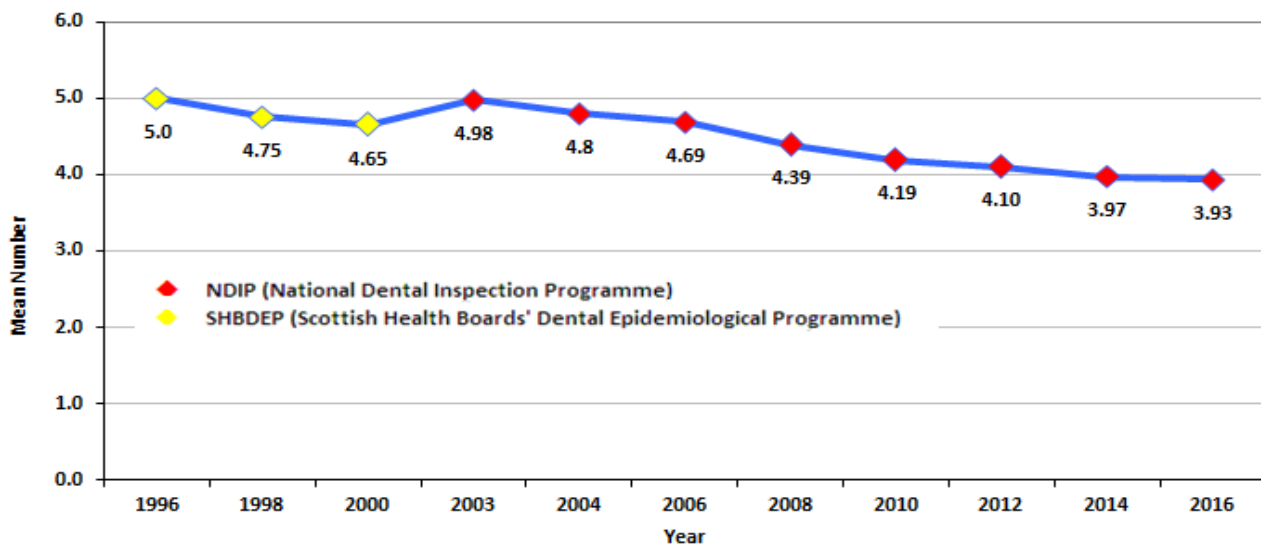
Figure 4. Mean number of decayed, missing and filled primary teeth (d₃mft) in the P1 population in Scotland; 1988-2016¹



Sources: ISD NDIP Database, SHBDEP

1. The distance between each point does not represent an equal period of time as the results have not been published consistently over the 28 year period.

Figure 5. Mean number of decayed, missing and filled primary teeth in P1 children with obvious decay experience (i.e. in those with d₃mft>0) in Scotland; 1996-2016^{1,2}



Sources: ISD NDIP Database, SHBDEP

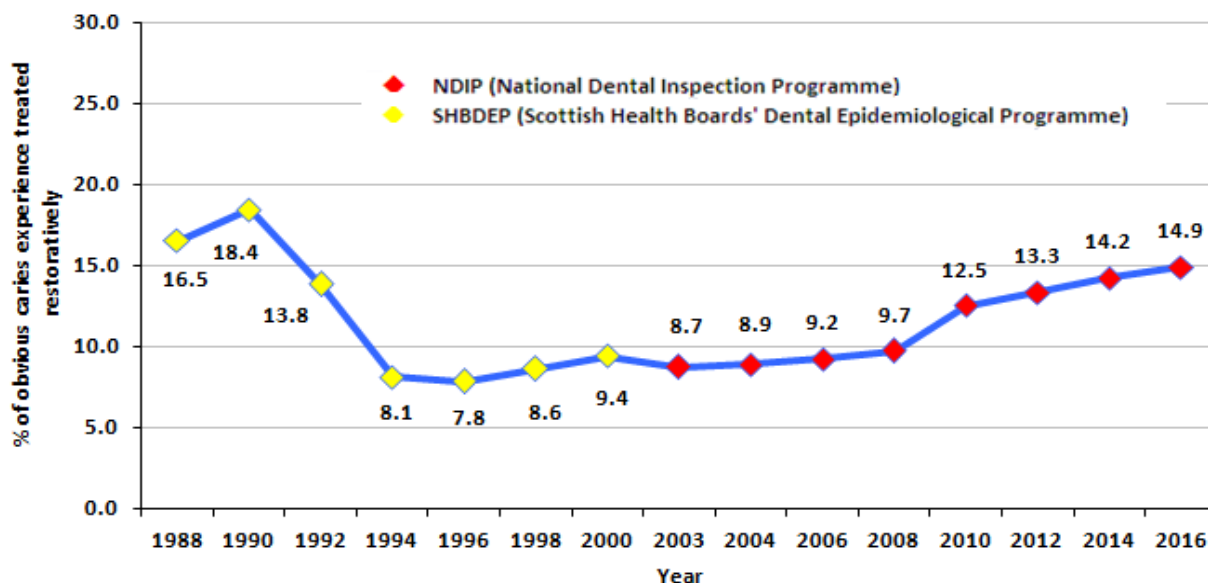
1. The distance between each point does not represent an equal period of time as the results have not been published consistently over the 20 year period.

2. This measure was not calculated prior to 1996.

What percentage of obvious decay experience in P1 children was treated with fillings?

Figure 6 shows the Care Index (percentage of filled teeth for those with obvious decay experience) for the last 15 surveys. There has been a relatively stable improvement since 1994. In the 2016 survey, 15% of teeth with obvious decay experience had been filled. This ranged from 8% to 39% among the 14 NHS Boards. These results can be found in [Appendix A4](#) (Table A2).

Figure 6. Care Index for P1 children in Scotland; 1988-2016^{1,2}



Sources: ISD NDIP Database, SHBDEP

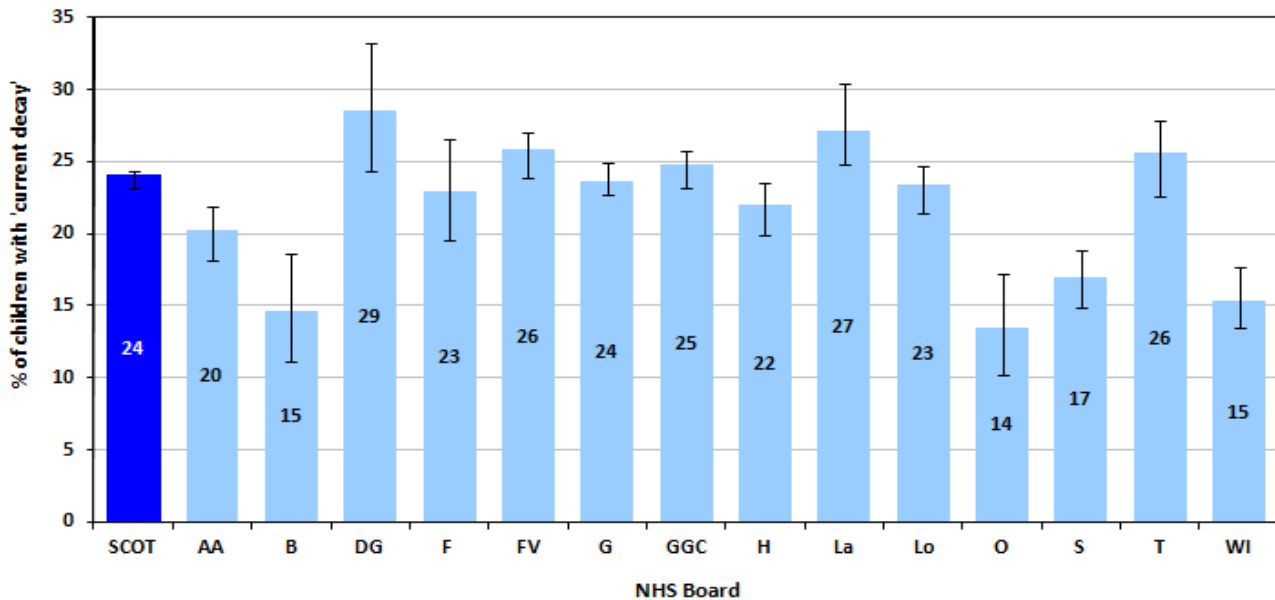
$$1. \text{ Care Index} = \frac{\text{number of filled teeth}}{\text{number of teeth with obvious decay experience}} \times 100$$

2. The distance between each point does not represent an equal period of time as the results have not been published consistently over the 28 year period.

What percentage of P1 children had untreated decay?

In Scotland, 24% of P1 children had untreated decay ($d_{3t} > 0$), with a range of 14% in NHS Orkney to 29% in NHS Dumfries and Galloway across the 14 NHS Boards. Figure 7 shows the percentages and the 95% confidence intervals of P1 children with untreated decay.

Figure 7. Percentage of P1 children in Scotland with untreated decay; by NHS Board in 2016¹⁻⁴



Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. A key for the NHS Board abbreviations can be found in the [Glossary](#).
4. Current decay is when $d_{3t} > 0$ as per BASCD.

Measures of Oral Health Inequalities

- Health inequalities can be measured and reported using simple or complex methods.
- The simple methods compare only two groups on a socio-economic scale, usually the most and least disadvantaged.
- The complex methods look across the whole social gradient, rather than solely at the most and least disadvantaged groups (e.g. Slope Index of Inequality (SII)).

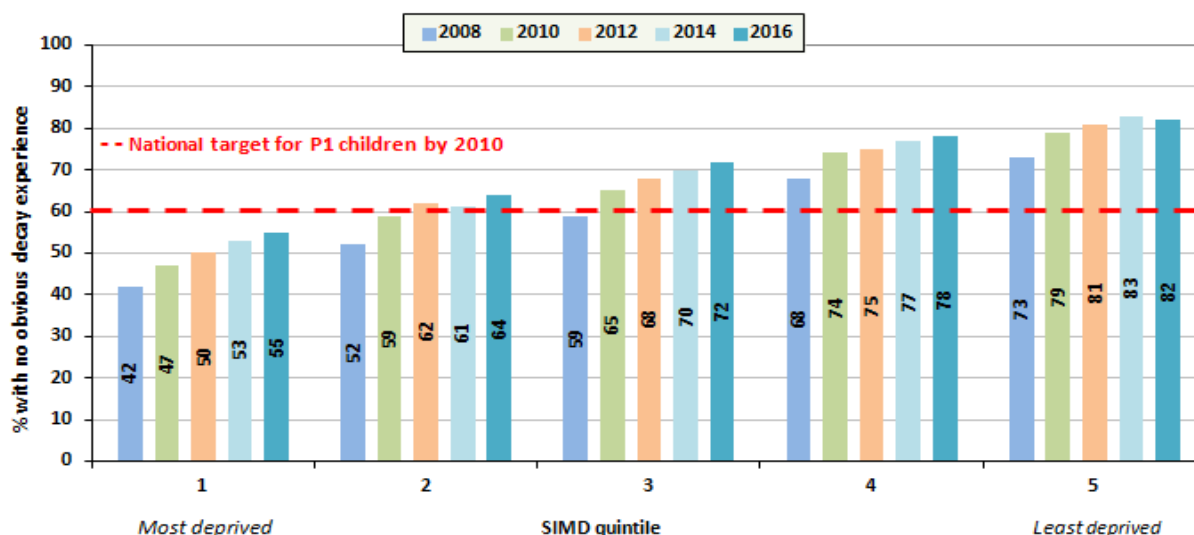
Is there a continuing link between area-based socio-economic deprivation and poor dental health among P1 children in Scotland?

The main SIMD classification used here is based on quintiles of deprivation, where quintile SIMD1 is the most deprived and quintile SIMD5 is the least deprived.

There is clearly a difference in dental health among P1 children in the different SIMD quintiles. The most deprived quintile (SIMD1) showed an increase of two percentage points, free from no obvious decay, from 2014. Similarly SIMD2, 3, and 4 showed an improvement by three, two, and one percentage points, respectively. The least deprived quintile (SIMD5) showed a decrease of one percentage point from the 2014 inspection (Figure 8).

The absolute inequality between SIMD1 and SIMD5 has decreased to 27%, a 3 percentage point decrease (i.e. improvement) since 2014, with 55% of P1 children in the most deprived area showing no obvious decay experience, compared with 82% of P1 children in the least deprived area. The national target set for 2010 (60% of all P1 children to have no obvious decay experience) has still not been met for children in the most deprived area.

Figure 8. Change between 2008 and 2016 in the percentage of P1 children in Scotland with no obvious decay experience; by SIMD quintile^{1,2}



Source: ISD NDIP Database

1. No obvious decay experience is when $d_3mft=0$.

2. SIMD used has been subject to availability, as follows: 2008- SIMD 2006; 2010 & 2012- SIMD 2009; 2014 & 2016- SIMD 2012, more details can be found in the [Glossary](#).

Similarly, there is an inequality gap in the average number of teeth with obvious decay experience ($d_{3mft}>0$). This was 0.54 in the least deprived quintile (SIMD5) compared with 1.99 in the most deprived (SIMD1).

Table 3. Mean number of decayed, missing and filled primary teeth (d_{3mft}) in P1 children by SIMD quintile, 2010-2016¹

Year	SIMD 1 (most deprived)	SIMD 2	SIMD 3	SIMD 4	SIMD 5 (least deprived)
2010	2.61	1.76	1.39	0.99	0.64
2012	2.42	1.57	1.19	0.85	0.55
2014	2.14	1.61	1.13	0.76	0.56
2016	1.99	1.48	1.07	0.75	0.54

Source: ISD NDIP Database

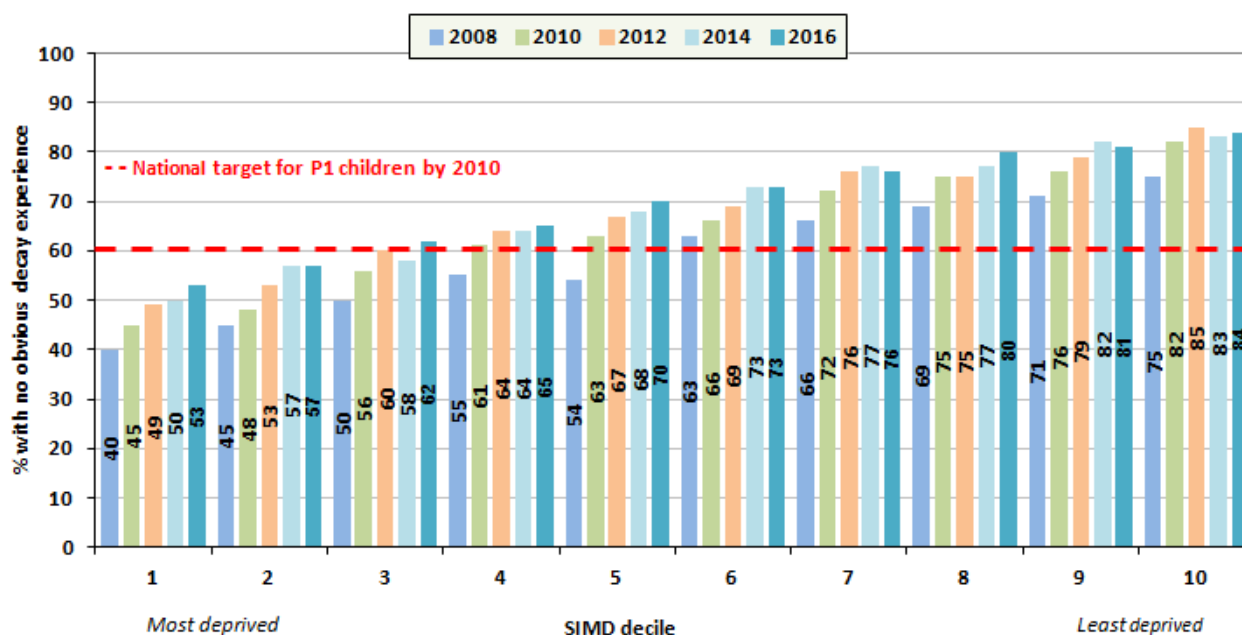
1. SIMD used has been subject to availability, as follows: 2010 & 2012- SIMD 2009; 2014 & 2016- SIMD 2012, more details can be found in the [Glossary](#).

The SIMD decile classification has 10 divisions of deprivation from decile 1 (most deprived) to decile 10 (least deprived).

As with the SIMD quintiles, there is a clear difference in dental health among P1 children in the different SIMD deciles. The most deprived decile (SIMD1) showed an increase of 3 percentage points, free from obvious decay, from 2014. A slight increase of one percentage point resulted in the least deprived decile (SIMD10).

The absolute inequality between the most and least deprived deciles has decreased to 31%, a 2 percentage point decrease (improvement) since 2014. In addition, the national target set for 2010 (60% of all P1 children to have no obvious decay experience) has not been met in the two most deprived deciles.

Figure 9. Change between 2008 and 2016 in the percentage of P1 children in Scotland with no obvious decay experience; by SIMD decile^{1,2}



Source: ISD NDIP Database

1. No obvious decay experience is when $d_{3mft}=0$.

2. SIMD used has been subject to availability, as follows: 2008- SIMD 2006; 2010 & 2012- SIMD 2009; 2014 & 2016- SIMD 2012, more details can be found in the [Glossary](#).

Distribution of obvious decay experience across the number of P1 children in Scotland

The value for the Slope Index of Inequality (SII) in 2016 was 1.84, which is an improvement since 2010 (Table 4). Similarly, the three non-SES-based measures of dental health inequalities shown in the table (SiC, SiC10, SCIM10) also show overall improvements since 2010.

Table 4. Inequality measures in teeth of P1 children in Scotland; 2010-2016

Year	Slope Index of Inequality (SII)	Relative Index of Inequality (RII)	Significant Caries (SiC) Index	Significant Caries 10 (SiC10)	Scottish Caries Inequality Metric (SCIM10)
2010	2.42	1.58	4.50	8.52	11.07
2012	2.25	1.63	4.13	7.97	9.80
2014	1.99	1.61	3.72	7.64	8.57
2016	1.84	1.54	3.59	7.48	8.22

Source: ISD NDIP Database

Results from the detailed inspection for the Health and Social Care Partnerships are given in [Appendix A5](#).

Results of the Basic Inspection for all P1 and P7 children are given in [Appendix A6](#).

Conclusions

- The oral health of P1 children in Scotland is slightly better than in 2014, and is considerably improved since the early 2000s when the National Dental Inspection Programme started.
- It is anticipated this improved level of dental health will be maintained as the Childsmile Programme⁴ continues to be refined and implemented by the NHS Boards.
- Clear health inequalities remain, with only small improvements seen for both the socio-economic and non-socio-economic tests of dental health inequality over the time period.

Glossary

BASCD	British Association for the Study of Community Dentistry
Basic Inspection	Simple assessment of the mouth of the child using a light, mirror and ball-ended probe. The dental status of each child is assigned to one of three categories, depending on the level of dental health and treatment need observed
Care Index	Percentage of obvious decay experience that has been treated restoratively; expressed as number of filled teeth divided by number of obvious decayed, missing and filled teeth, multiplied by 100 [(ft/d ₃ mft)x100]
Childsmile	National oral health improvement programme for children in Scotland
Deprivation decile	This SIMD classification is based on deciles of deprivation (and is often used for greater depth of geographical analysis): decile 1 is the most deprived and decile 10 is the least deprived
Deprivation quintile	This SIMD classification is based on quintiles of deprivation: quintile 1 is the most deprived and quintile 5 is the least deprived.
Detailed Inspection	Comprehensive assessment of the mouth of the child using a light, mirror and ball-ended probe. The status of each surface of each tooth is recorded in accordance with international epidemiological conventions
d ₃ mft	Obvious decay experience in primary teeth, as noted above; includes both missing teeth (extracted due to decay) and filled teeth
d ₃ mft>0	(Any) amount of decay experience in primary teeth
d ₃ t	Obvious decayed primary teeth
ft	Filled primary teeth
LA	Local authority
mt	Missing primary teeth
NHS Board abbreviations	AA: Ayrshire & Arran B: Borders DG: Dumfries & Galloway F: Fife FV: Forth Valley G: Grampian GGC: Greater Glasgow & Clyde H: Highland La: Lanarkshire Lo: Lothian O: Orkney

S: Shetland

T: Tayside

WI: Western Isles

Obvious decay	Disease process that clinically appears to have penetrated dentine (the layer below the outer white enamel of the teeth). This is described internationally as decay at the d_3 level and includes <i>pulpal decay</i> (i.e. decay into the deeper pulp).
SCIM10	Scottish Caries Inequality Metric. The area under the curve in relation to the distribution of the tenths of the population by obvious decay experience (d_3mft).
SES	Socio-economic status.
SiC	Significant Caries Index. This is used in order to bring attention to the individuals with the highest caries values in each population under investigation.
SiC10	Significant Caries 10. The mean d_3mft for the tenth of the sample with the most teeth affected by caries experience.
SII	Slope Index of Inequality . This is one of the recommended tests of complex inequality, as it reflects the entire SES distribution and weights for the population share in the respective groups. SII may be interpreted as the absolute difference overall in d_3mft score when moving across the SES spectrum and is indicative of the total experience of individuals in the whole population.
RII	Relative Index of Inequality . This is one of the recommended tests of complex inequality, as it reflects the entire SES distribution and weights for the population share in the respective groups. RII can be interpreted as the relative difference overall in d_3mft when moving across the SES spectrum. It can be calculated by dividing the SII by the mean level of decay in the population.
SIMD	<p>Scottish Index of Multiple Deprivation. Classification identifying small area concentrations of multiple deprivation presented at data zone level and based on postcode unit information. Seven domains (income, employment, education, housing, health, crime and geographical access) are combined into an overall index to rank relative multiple deprivation in all geographical areas throughout Scotland.</p> <p>Several different versions of the SIMD are used across time. In 2008, the 2006 SIMD was used; in 2010 & 2012, the 2009 SIMD was used; in 2014 and 2016, the 2012 SIMD was used. For all of these indices, the most deprived quintile (or decile) is shown by SIMD1 or decile 1; and the least deprived quintile (or decile) shown by SIMD5 or decile 10.</p> <p>There were SIMD releases in 2004, 2006, 2009 and 2012. The most appropriate SIMD release has been used for each year of data as illustrated in the following table.</p>

Data for Years	Index and release
2000, 2001, 2002, 2003	SIMD 2004
2004, 2005, 2006	SIMD 2006
2007, 2008, 2009	SIMD 2009
2010, 2011, 2012, 2013, 2014, 2015, 2016	SIMD 2012

SIMD 2016 has been released but was not available at the time of analysis. Please note that following the release of SIMD 2009, ISD changed its ordering of quintiles to fit with the method used by the Scottish Government. The method is now:

- Quintile 1 = MOST deprived
- Quintile 5 = LEAST deprived

and this applies to all data analysed by SIMD 2009 and SIMD 2012.

References

1. Scottish Index of Multiple Deprivation 2012 (www.scotland.gov.uk/topics/statistics/SIMD).
2. Bratthall D, (2000). Introducing the Significant Caries Index together with a proposal for a new global oral health goal for 12-year-olds. *International Dental Journal*; 50: 378-384.
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Diagram No.	Name	Time period	File & size
1	The various stages of tooth decay.	n/a	Excel [280KB]

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Further Information

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Appendices

A1 – What are the stages of tooth decay?

Dentists use specific professional terms to identify the different stages of tooth decay. However, simpler terms are provided in Diagram 1 below to help illustrate the various stages of tooth decay. The early stages of decay occur at a sub-clinical level and cannot be detected by the naked eye. As decay progresses it can be detected visually, first on the outer surface of the tooth (enamel layer) and then, with further progression, the lesion is clinically detectable in the dentine layer under the enamel. It is decay which has reached this stage that is recorded by the dentists undertaking the NDIP inspections.

Diagram 1: The various stages of tooth decay



A2 – National training and calibration course

The training and calibration courses for the detailed NDIP survey of P1 children in Scotland took place in October and November 2015. They were hosted by NHS Forth Valley, NHS Lanarkshire, NHS Lothian and NHS Tayside with support from NHS Fife.

Mandatory training and calibration sessions were run over five separate courses to accommodate the 51 inspection teams (dentist /dental therapist and dental nurse) who came from all 14 NHS Boards. A gold standard dentist attended all five courses for quality assurance purposes.

Prior to coming on the courses dental teams had to undertake mandatory online training. At the courses there was a training session covering the inspection procedures, tooth/surface codes and diagnostic criteria based on the British Association for the Study of Community Dentistry (BASCD) Trainers' Pack⁵. Clinical training sessions were then undertaken on schoolchildren, and were followed by the calibration sessions on a further group of P1 children. Calibration sessions involved each inspection team examining the same 11 children.

Analyses were undertaken by the University of Glasgow Community Oral Health Section. Inter-examiner agreement was assessed using the percentage agreement and Kappa statistic assessed at the patient level on d_3mft and separately for dt, mt, and ft components.

Cohen Kappa estimates agreement, which is considered⁶:

- *poor* if $Kappa \leq 0.20$
- *fair* if $0.21 \leq Kappa \leq 0.40$
- *moderate* if $0.41 \leq Kappa \leq 0.60$
- *substantial* if $0.61 \leq Kappa \leq 0.80$
- *good* if $Kappa > 0.80$

All 55 inspection teams calibrated with percentage agreement ranging from 90% to 100%, and the Kappa estimates for d_3mft scores at the patient level did not drop below moderate. Further investigation of the data on 1 inspection team where the Kappa was lower than substantial found that the disagreement was on no more than 2 children. The Kappa estimates for dt scores at the patient level did also not drop below moderate. There were 3 inspection teams where the Kappa estimates for dt was moderate, and again the disagreements were on no more than 2 children.

A3 – Links/comparisons to other sources of dental health information

The sources below offer information related to dental services and dental health. Most of these sources are external to ISD and we cannot guarantee the content or accessibility of these external web sites.

[Childsmile](#) - improving the oral health of children in Scotland.

Dental data in Scotland

ISD publishes

- Information relating to the [general dental service workforce](#) in Scotland.
- An annual [NHS Adult & Child Fees and Treatments](#) report providing information on GDS fees paid to dentists and on treatments provided to children and adults.
- A biannual [NHS Registration and Participation](#) report providing information on NHS General Dental Services (GDS) registrations and participation (contact with GDS).
- An annual report providing information on the application of fluoride varnishing to children’s teeth.

The 2014 [Scottish Health Survey](#) covers dental health topics such as dental health problems and trends in prevalence of natural teeth.

The 2015/16 Scottish Adult Oral Health Survey will provide detailed analyses of oral health factors and demographic measures for adults, and will provide a tool to inform policy, plan services and improve and maintain health. It is anticipated that this report will be published in winter 2016.

Table A1. Is NDIP Comparable with other UK dental data?

Country	Comparable to NDIP?	Available	Links
England	No – consent affects participation rates of children with and without decay	Yes	The Dental Observatory produced a report on the prevalence and severity of dental decay of five-year old children in 2015.
Northern Ireland	-	No	-
Wales	No – consent affects participation rates of children with and without decay	Yes	Cardiff University and Public Health Wales produce annual reports for childhood oral epidemiology programme .

As stated, the results from these reports are not directly comparable with the NDIP report.

The Office for National Statistics’ (ONS) has carried out a [Dental Health Survey of Children and Young People](#) every ten years since 1973. The study provides information to underpin dental health care for children in England, Wales and Northern Ireland. The information collected helps the NHS to understand how the dental health of each generation of children is changing. It is used in the planning of dental care services for the future.

Please note that if you want to compare deprivation levels in Scotland and England, the Scottish Index of Multiple Deprivation (SIMD) is not directly comparable with the Index of Multiple Deprivation used in England.

A4 – Results of Care Index at NHS Board level; Detailed Inspection

Table A2 displays the Care Index from the 2016 survey for all 14 NHS Boards. This ranged from 7.7% in Lanarkshire to 38.5% in Western Isles.

Table A2. Care Index for P1 children in Scotland; by NHS Board¹⁻³

NHS Board	% of teeth with obvious caries experience treated restoratively
Ayrshire & Arran	13.2
Borders	33.3
Dumfries & Galloway	8.3
Fife	16.7
Forth Valley	15.0
Grampian	17.4
Greater Glasgow & Clyde	14.0
Highland	15.5
Lanarkshire	7.7
Lothian	14.0
Orkney	32.9
Shetland	22.9
Tayside	12.7
Western Isles	38.5
Scotland	14.9

Source: ISD NDIP Database

1. Care Index = $\frac{\text{number of filled teeth}}{\text{number of teeth with obvious decay experience}} \times 100$.

2. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.

3. Based on NHS Board boundaries as defined in 2014.

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016

Tables A3.1-A3.8 show the 2016 Detailed NDIP results for Health and Social Care Partnerships for the eight NHS Boards which included the minimum target sample of 250 children in each HSCP (if the HSCP is within 10% of reaching the target, it was included).

The following variables are given:

- Mean age
- Weighted % no obvious decay experience
- Weighted mean d_3mft
- Weighted mean d_3t
- Weighted mean mt
- Weighted mean ft
- Mean d_3mft for children with $d_3mft > 0$

Results for the HSCPs are weighted by population deprivation categories specific to each NHS Board. This is different to the deprivation categorisation used in the main report which is SIMD 2012 based on the whole of Scotland. As such the deprivation results for the HSCPs are **not** directly comparable with those in the main report.

The HSCPs are weighted by NHS board deprivation categories so as to allow fair comparison within the board area. This is only applicable to boards with more than one HSCP, and therefore boards with only one HSCP are not reported, namely NHS Borders, NHS Dumfries & Galloway, NHS Fife, NHS Orkney, NHS Shetland and NHS Western Isles.

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.1. NHS Ayrshire & Arran: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
East Ayrshire	384	5.5	0.3	4.9	6.9
North Ayrshire	401	5.5	0.3	4.3	6.4
South Ayrshire	354	5.5	0.3	4.2	6.4

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
East Ayrshire	71.4	67.3	75.5
North Ayrshire	69.2	65.2	73.3
South Ayrshire	76.7	73.0	80.3

HSCP name	Weighted mean d _{3mft}		
	Mean d _{3mft}	Lower 95% CL	Upper 95% CL
East Ayrshire	1.0	0.8	1.2
North Ayrshire	1.3	1.1	1.6
South Ayrshire	0.8	0.7	1.0

HSCP name	Weighted mean d _{3t}		
	Mean d _{3t}	Lower 95% CL	Upper 95% CL
East Ayrshire	0.5	0.4	0.7
North Ayrshire	0.8	0.7	1.0
South Ayrshire	0.4	0.3	0.5

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Ayrshire	0.4	0.2	0.5
North Ayrshire	0.4	0.2	0.5
South Ayrshire	0.3	0.2	0.4

HSCP name	Weighted mean ft		
	Mean pt	Lower 95% CL	Upper 95% CL
East Ayrshire	0.1	0.1	0.2
North Ayrshire	0.2	0.1	0.2
South Ayrshire	0.1	0.1	0.2

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.1. NHS Ayrshire & Arran: Health and Social Care Partnership results continued

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
East Ayrshire	103	3.4	2.9	3.9
North Ayrshire	126	4.4	3.8	4.9
South Ayrshire	84	3.6	2.9	4.2

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.2. NHS Forth Valley: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
Clackmannanshire and Stirling	786	5.5	0.3	4.7	6.5
Falkirk	794	5.5	0.3	4.7	6.2

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	71.7	69.5	73.9
Falkirk	68.3	65.9	70.7

HSCP name	Weighted mean d _{3mft}		
	Mean d _{3mft}	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	1.0	0.9	1.1
Falkirk	1.4	1.2	1.5

HSCP name	Weighted mean d _{3t}		
	Mean dt	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	0.7	0.6	0.8
Falkirk	1.0	0.8	1.1

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	0.1	0.1	0.2
Falkirk	0.2	0.1	0.3

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	0.2	0.1	0.2
Falkirk	0.2	0.2	0.2

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.2. NHS Forth Valley: Health and Social Care Partnership results continued

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
Clackmannanshire and Stirling	214	3.6	3.2	4.0
Falkirk	250	4.3	3.9	4.7

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.3. NHS Grampian: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
Aberdeen City	1290	5.6	0.3	4.4	6.6
Aberdeenshire	1464	5.5	0.3	4.7	6.2
Moray	533	5.6	0.3	4.4	6.7

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
Aberdeen City	68.8	67.2	70.5
Aberdeenshire	71.6	69.8	73.3
Moray	69.4	66.5	72.2

HSCP name	Weighted mean d ₃ mft		
	Mean d ₃ mft	Lower 95% CL	Upper 95% CL
Aberdeen City	1.2	1.1	1.3
Aberdeenshire	1.0	0.9	1.1
Moray	1.1	0.9	1.2

HSCP name	Weighted mean d ₃ t		
	Mean dt	Lower 95% CL	Upper 95% CL
Aberdeen City	0.8	0.7	0.8
Aberdeenshire	0.6	0.5	0.7
Moray	0.7	0.6	0.8

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Aberdeen City	0.2	0.2	0.3
Aberdeenshire	0.2	0.2	0.3
Moray	0.2	0.1	0.3

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.3. NHS Grampian: Health and Social Care Partnership results continued

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Aberdeen City	0.2	0.2	0.2
Aberdeenshire	0.2	0.1	0.2
Moray	0.2	0.1	0.2

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
Aberdeen City	437	4.0	3.8	4.3
Aberdeenshire	448	3.6	3.3	3.8
Moray	161	3.5	3.0	3.9

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.4. NHS Greater Glasgow & Clyde: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
East Dunbartonshire	371	5.4	0.3	4.7	6.2
East Renfrewshire	423	5.4	0.3	4.8	6.0
Glasgow City	1371	5.4	0.3	4.2	6.8
Inverclyde	418	5.4	0.3	4.7	6.6
Renfrewshire	459	5.4	0.3	4.8	6.3
West Dunbartonshire	417	5.5	0.3	4.7	6.3

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
East Dunbartonshire	81.3	78.1	84.4
East Renfrewshire	79.8	76.7	82.9
Glasgow City	64.1	61.9	66.3
Inverclyde	69.6	66.6	72.6
Renfrewshire	67.3	63.6	71.1
West Dunbartonshire	66.3	62.7	69.9

HSCP name	Weighted mean d ₃ mft		
	Mean d ₃ mft	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.6	0.5	0.7
East Renfrewshire	0.6	0.5	0.8
Glasgow City	1.6	1.5	1.7
Inverclyde	1.2	1.1	1.4
Renfrewshire	1.2	1.1	1.4
West Dunbartonshire	1.2	1.1	1.4

HSCP name	Weighted mean d ₃ t		
	Mean dt	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.4	0.3	0.4
East Renfrewshire	0.4	0.3	0.5
Glasgow City	0.9	0.8	1.0
Inverclyde	0.7	0.6	0.9
Renfrewshire	0.8	0.7	1.0
West Dunbartonshire	0.9	0.7	1.0

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.4. NHS Greater Glasgow & Clyde: Health and Social Care Partnership results continued

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.2	0.1	0.2
East Renfrewshire	0.1	0.0	0.2
Glasgow City	0.4	0.3	0.5
Inverclyde	0.3	0.2	0.4
Renfrewshire	0.2	0.1	0.3
West Dunbartonshire	0.2	0.1	0.3

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.1	0.1	0.1
East Renfrewshire	0.1	0.0	0.1
Glasgow City	0.2	0.2	0.3
Inverclyde	0.2	0.1	0.2
Renfrewshire	0.2	0.1	0.2
West Dunbartonshire	0.1	0.1	0.2

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
East Dunbartonshire	86	3.6	3.0	4.3
East Renfrewshire	82	3.2	2.6	3.8
Glasgow City	491	4.4	4.2	4.7
Inverclyde	126	4.0	3.5	4.4
Renfrewshire	155	4.0	3.5	4.5
West Dunbartonshire	144	3.7	3.3	4.2

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.5. NHS Highland: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
Argyll & Bute	291	5.5	0.3	4.8	6.5
Highland	343	5.7	0.3	5.0	6.5

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
Argyll & Bute	73.4	69.2	77.6
Highland	71.4	66.7	76.0

HSCP name	Weighted mean d ₃ mft		
	Mean d ₃ mft	Lower 95% CL	Upper 95% CL
Argyll & Bute	1.0	0.8	1.2
Highland	1.1	0.8	1.3

HSCP name	Weighted mean d ₃ t		
	Mean dt	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.7	0.5	0.8
Highland	0.7	0.5	0.9

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.2	0.1	0.3
Highland	0.2	0.1	0.3

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.1	0.1	0.2
Highland	0.2	0.1	0.3

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.5. NHS Highland: Health and Social Care Partnership results continued

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
Argyll & Bute	77	3.6	2.9	4.2
Highland	96	3.7	3.1	4.3

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.6. NHS Lanarkshire: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
North Lanarkshire	479	5.4	0.3	4.7	6.1
South Lanarkshire	424	5.5	0.3	4.8	6.8

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
North Lanarkshire	63.1	59.0	67.1
South Lanarkshire	70.3	66.2	74.3

HSCP name	Weighted mean d _{3mft}		
	Mean d _{3mft}	Lower 95% CL	Upper 95% CL
North Lanarkshire	1.7	1.5	2.0
South Lanarkshire	1.0	0.9	1.2

HSCP name	Weighted mean d _{3t}		
	Mean dt	Lower 95% CL	Upper 95% CL
North Lanarkshire	1.2	1.0	1.4
South Lanarkshire	0.6	0.5	0.7

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.4	0.3	0.6
South Lanarkshire	0.3	0.2	0.5

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.1	0.1	0.2
South Lanarkshire	0.1	0.0	0.1

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.6. NHS Lanarkshire: Health and Social Care Partnership results continued

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
North Lanarkshire	188	4.7	4.3	5.2
South Lanarkshire	127	3.6	3.1	4.0

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.7. NHS Lothian: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
East Lothian	340	5.6	0.3	4.9	6.4
Edinburgh	719	5.5	0.3	4.8	6.7
Midlothian	334	5.6	0.3	4.9	6.4
West Lothian	370	5.5	0.3	4.9	6.3

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
East Lothian	72.4	68.1	76.6
Edinburgh	73.1	70.2	76.0
Midlothian	68.8	64.7	72.9
West Lothian	63.7	58.8	68.7

HSCP name	Weighted mean d ₃ mft		
	Mean d ₃ mft	Lower 95% CL	Upper 95% CL
East Lothian	1.1	0.9	1.3
Edinburgh	1.2	1.0	1.3
Midlothian	1.3	1.1	1.5
West Lothian	1.7	1.4	2.0

HSCP name	Weighted mean d ₃ t		
	Mean dt	Lower 95% CL	Upper 95% CL
East Lothian	0.8	0.6	0.9
Edinburgh	0.7	0.6	0.9
Midlothian	0.7	0.5	0.9
West Lothian	1.1	0.9	1.4

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Lothian	0.2	0.1	0.3
Edinburgh	0.3	0.2	0.3
Midlothian	0.4	0.2	0.5
West Lothian	0.4	0.2	0.5

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.7. NHS Lothian: Health and Social Care Partnership results continued

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
East Lothian	0.1	0.1	0.2
Edinburgh	0.2	0.1	0.2
Midlothian	0.2	0.1	0.2
West Lothian	0.2	0.1	0.3

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
East Lothian	97	4.1	3.6	4.7
Edinburgh	195	4.3	3.9	4.8
Midlothian	105	4.1	3.5	4.6
West Lothian	142	4.8	4.2	5.3

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.8. NHS Tayside: Health and Social Care Partnership results

HSCP name	No. of children	Mean age			
		Mean	Std dev	Minimum	Maximum
Angus	244	5.6	0.3	4.9	6.3
Dundee	294	5.6	0.3	4.9	6.5
Perth & Kinross	258	5.6	0.3	4.8	6.7

HSCP name	Weighted % no obvious decay experience		
	%	Lower 95% CL	Upper 95% CL
Angus	66.5	61.1	71.9
Dundee	64.9	60.0	69.7
Perth & Kinross	74.3	69.8	78.9

HSCP name	Weighted mean d ₃ mft		
	Mean d ₃ mft	Lower 95% CL	Upper 95% CL
Angus	1.3	1.0	1.6
Dundee	1.3	1.1	1.6
Perth & Kinross	0.9	0.7	1.1

HSCP name	Weighted mean d ₃ t		
	Mean dt	Lower 95% CL	Upper 95% CL
Angus	0.8	0.6	1.0
Dundee	0.8	0.7	1.0
Perth & Kinross	0.6	0.5	0.8

HSCP name	Weighted mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Angus	0.4	0.2	0.6
Dundee	0.3	0.2	0.4
Perth & Kinross	0.2	0.1	0.3

A5 – Results for Health and Social Care Partnerships (HSCP); Detailed Inspection for Primary 1 children in 2016 cont.

The results are weighted by population SIMD 2012 categories, specific to each NHS Board. This is different to the SIMD 2012 used in the main report which used SIMD 2012 categories for Scotland as a whole. As such they are **not** directly comparable.

Table A3.8. NHS Tayside: Health and Social Care Partnership results continued

HSCP name	Weighted mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Angus	0.1	0.1	0.2
Dundee	0.2	0.1	0.3
Perth & Kinross	0.1	0.1	0.2

HSCP name	No. of children with obvious decay experience	Mean d ₃ mft for children with obvious decay experience (d ₃ mft >0)		
		Mean	Lower 95% CL	Upper 95% CL
Angus	83	3.9	3.2	4.5
Dundee	104	3.8	3.2	4.3
Perth & Kinross	69	3.5	2.8	4.2

A6 – Basic Inspection results

What does the NDIP Basic Inspection consist of?

The *Basic Inspection* involves a simple assessment of the mouth of the child using a light, mirror and ball-ended probe. The dental status of each child is then categorised into three groups, depending on the level of dental health and treatment need observed, and parents/carers are advised of this by letter. The information in the letter explains the state of dental health observed in the mouth of the child at the time of the inspection.

The letter types are as follows:

- Letter A - should seek immediate dental care on account of severe decay or abscess.
- Letter B - should seek dental care in the near future due to history of tooth decay.
- Letter C - no obvious decay experience but should continue to see the family dentist on a regular basis.

The results of the *Basic Inspection* are then anonymised and aggregated. They are used to monitor the impact of local and national NHS oral health improvement programmes and assist in the development of local dental services.

See Tables A4 and A5 overleaf.

A6 – Basic Inspection results cont

Primary 1 Basic Data in P1 & P7 in Scotland; 2016

During 2015/16, all P1 classes of Scottish Local Authority schools were invited to participate in the Programme. The *Basic Inspections* were conducted in primary schools in all NHS Board areas, and overall 51,709 P1 children were inspected (Table A4). This represents 86% of P1 children who attended mainstream Local Authority schools across Scotland in the 2015/16 school year and whose parents/carers were advised by letter of the oral health of their child.

Table A4. Primary 1 children inspected by NHS Boards during school year 2015/16; Basic Inspection¹⁻⁷

NHS Board	Estimated Total no. of P1 children in Local Authority schools	Total no. of P1 children inspected	Percentage (%) of P1 children inspected	Percentage (%) of A letters issued	Percentage (%) of B letters issued	Percentage (%) of C letters issued
Ayrshire & Arran	4,029	3,571	88.6	4.1	23.4	72.6
Borders	1,196	1,070	89.5	2.2	21.2	76.5
Dumfries & Galloway	1,527	1,370	89.7	7.9	22.7	69.4
Fife	4,282	3,749	87.6	6.2	24.2	69.6
Forth Valley	3,417	2,932	85.8	8.2	21.2	70.6
Grampian	6,684	5,404	80.8	7.2	21.5	71.3
Greater Glasgow & Clyde	12,284	11,396	92.8	9.7	24.3	66.0
Highland	3,498	2,586	73.9	6.7	20.6	72.7
Lanarkshire	7,714	6,873	89.1	8.3	22.4	69.3
Lothian	10,005	8,136	81.3	6.1	21.7	72.2
Orkney	237	214	90.3	1.9	19.6	78.5
Shetland	277	237	85.6	3.0	20.3	76.8
Tayside	4,375	3,923	89.7	9.8	22.5	67.7
Western Isles	271	248	91.5	2.8	18.1	79.0
Scotland	59,796	51,709	86.5	7.5	22.6	69.9

Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. Primary 1 population is estimated using an aggregated population lookup file of children aged 5 (2014).
4. Children with a missing postcode, had an exam but didn't receive a letter or didn't have an exam were removed before analysis. This accumulated to 5,626 children. Repeat examinations were also omitted.
5. Letter A - should seek immediate dental care on account of severe decay or abscess.
6. Letter B - should seek dental care in the near future due to history of tooth decay.
7. Letter C - no obvious decay experience but should continue to see the family dentist on a regular basis.

A6 – Basic Inspection results cont

Primary 7 Basic Data

In total, 47,303 P7 children received a *Basic Inspection*. This represents 90% of P7 children attending mainstream Local Authority schools across Scotland (Table A5). As with P1 children, parents/carers of those P7 children who received a *Basic Inspection* were advised by letter of the oral health of their child.

Table A5. Primary 7 children inspected by NHS Boards during school year 2015/16; Basic Inspection¹⁻⁷

NHS Board	Total no. of P7 children in Local Authority schools	Total no. of P7 children inspected	Percentage (%) of P7 children inspected	Percentage (%) of A letters issued	Percentage (%) of B letters issued	Percentage (%) of C letters issued
Ayrshire & Arran	3,783	3,350	88.6	1.3	24.2	74.4
Borders	1,199	1,043	87.0	0.6	16.7	82.7
Dumfries & Galloway	1,397	1,389	99.4	3.2	34.1	62.8
Fife	3,645	3,471	95.2	1.7	32.0	66.3
Forth Valley	3,129	2,837	90.7	7.5	26.6	65.8
Grampian	5,575	4,713	84.5	0.9	46.3	52.8
Greater Glasgow & Clyde	10,785	10,193	94.5	2.4	30.4	67.2
Highland	3,323	2,939	88.4	1.5	23.5	75.1
Lanarkshire	7,038	6,637	94.3	2.4	30.9	66.7
Lothian	8,134	6,576	80.8	1.5	24.7	73.9
Orkney	221	185	83.7	0.0	16.8	83.2
Shetland	261	233	89.3	1.7	17.6	80.7
Tayside	4,032	3,509	87.0	1.6	31.1	67.3
Western Isles	262	228	87.0	0.9	16.7	82.5
Scotland	52,784	47,303	89.6	2.1	30.0	67.9

Source: ISD NDIP Database

1. Numbers are based on the postcode of the child and not the postcode of the school where the child was inspected.
2. Based on NHS Board boundaries as defined in 2014.
3. Primary 7 population is estimated using an aggregated population lookup file of children aged 12 (2014).
4. Children with a missing postcode, had an exam but didn't receive a letter or didn't have an exam were removed before analysis. This accumulated to 5,156 children. Repeat examinations were also omitted.
5. Letter A - should seek immediate dental care on account of severe decay or abscess.
6. Letter B - should seek dental care in the near future due to history of tooth decay.
7. Letter C - no obvious decay experience but should continue to see the family dentist on a regular basis.

A7 – Authors

This report, which is published by ISD Scotland on behalf of the Scottish Dental Epidemiology Co-ordinating Committee, has been prepared by the NDIP Report Writing Group, whose membership is as follows:

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A8 – Publication Metadata (including revisions details)

Metadata Indicator	Description
Publication title	National Dental Inspection Programme (NDIP) 2016.
Description	This report presents the results of the programme of children's dental inspections carried out in Scotland during school year 2015/16.
Theme	Dental care.
Topic	Children's dental health.
Format	PDF.
Data source(s)	2002/03, 2003/04, 2005/06, 2007/08, 2009/10, 2011/12, 2013/14, 2015/16 National Dental Inspection Programme databases; 1988, 1990, 1992, 1994, 1996, 1998, 2000 Scottish Heath Boards' Dental Epidemiological Programme databases.
Date that data are acquired	Various dates during school year 2015/16.
Release date	25 th October 2016.
Frequency	Annual.
Timeframe of data	School year ending June 2016; four months in arrears.
Continuity of data	Reports annually.
Revisions statement	These data are not subject to planned major revisions. However, ISD aims to continually improve the interpretation of the data and therefore analysis methods are regularly reviewed and may be updated in future.
Revisions to this publication	None.
Concepts and definitions	See Glossary, Appendix and References.
Relevance and key uses of the statistics	The principal aims of the National Dental Inspection Programme (NDIP) are to inform parents/carers of the oral health status of their children and, through appropriately anonymised, aggregated data, advise the Scottish Government, NHS Boards and other organisations concerned with children's health of oral disease prevalence at national and local levels.
Accuracy	These data are regarded as highly accurate as per the Kappa estimates agreement in Appendix A2 .
Completeness	These data are regarded as suitably complete. The Detailed inspection was carried out on 15,365 children, over more than 25% of the estimated P1 children from Local Authority Schools across Scotland. The Basic inspection saw 86% of P1's and 89% of P7's inspected.
Comparability	Each annual NDIP report has two levels: a Basic Inspection (intended for all P1 and P7 children) and a Detailed Inspection (where a representative sample of either the P1 or the P7 age group is inspected in alternate years).
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 .
Value type and unit of measurement	Various dental/epidemiological and demographic units of measurement.
Disclosure	The ISD Statistical Disclosure Protocol is followed.
Official Statistics designation	Official Statistics.

UK Statistics Authority Assessment	Not assessed at this time.
Last published	28 th October 2014 (2015 report covered Primary 7 children).
Next published	30 th October 2018 (2017 report will cover Primary 7 children)
Date of first publication	31 st December 2003 (revised 3 rd March 2008).
Help email	nss.isd-dental-info@nhs.net
Date form completed	01/09/2016

A9 – 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 and, separately, those receiving extended Pre-Release Access. Early Access endeavours to strengthen quality assurance across the content of the report by way of a report writing group; members listed in table below:

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Standard Pre-Release Access

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A10 – 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.

Information Services Division (ISD) is a business operating unit of NHS National Services Scotland and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

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.

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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 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)

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- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest.

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