



NATIONAL DENTAL INSPECTION PROGRAMME



# National Dental Inspection Programme (NDIP) 2013

Report of the 2013 Detailed National Dental Inspection Programme of Primary 7 children and the Basic Inspection of Primary 1 and Primary 7 children

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# Introduction

# The 2013 National Dental Inspection Programme (NDIP) undertaken in school year 2012/13

The National Dental Inspection Programme (NDIP) is carried out annually under the auspices of the Scottish Dental Epidemiology Co-ordinating Committee on behalf of NHS Boards. 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 and evaluating 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 report focuses on the results of the *Detailed Inspection*. Information relating to the *Basic Inspection* can be found in Appendix 4 of this Report. In the school year 2012/13, the *Detailed Inspection* programme involved P7 school children. An Executive Summary of the main findings can be found at <u>http://www.isdscotland.org/Health-Topics/Dental-Care/National-Dental-Inspection-Programme/</u>.

### What does the NDIP Detailed Inspection consist of?

The *Detailed Inspection* involves 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.

A tooth surface is only assessed as having 'obvious decay' if the disease process clinically appears to have penetrated dentine (i.e. the layer below the outer white enamel of the teeth). This is described internationally as decay at the  $D_3$  level and includes *pulpal decay* (i.e. decay into the deeper dental pulp). The definition of decay used is in accordance with the BASCD guidelines and international epidemiological conventions, thus allowing comparisons to be made 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. Moreover, the *Detailed Inspection* measures obvious decay into dentine when seen under school (rather than dental surgery) conditions. More information on the different stages of dental decay can be found in Appendix 1.

When the term 'obvious decay experience' ( $D_3MFT$ ) is discussed in this report it means 'obvious decay' (noted above), and in addition includes both missing teeth (extracted due to decay) and filled teeth.

Those undertaking the inspections attend 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 2.

The specific goals of the *Detailed Inspection* are to determine current levels of established tooth decay at national and NHS Board levels, and to determine the influence of deprivation on the dental health of children in Scotland.

The results are weighted for each NHS Board by deprivation quintiles (using the Scottish Index of Multiple Deprivation [SIMD] 2012<sup>1</sup>) to ensure the results represent the true child population.

### 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 P7 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 P7 population in Scotland.

Table 1 shows that, between November 2012 and June 2013, 11,735 children from Local Authority Schools across Scotland were included in the Detailed inspection. This represents 20.6% of the P7 population in Local Authority schools. Across all NHS Boards, the percentage of P7 children inspected ranged from 8.2% to 86.8%.

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 11.5 years. The range of ages across Scotland was 10.1 - 13.0 years.

#### NHS Board Number of P7 children % of P7 population Primary 7 (P7) population receiving a Detailed receiving a Detailed Inspection Inspection Ayrshire & Arran 3,890 1,254 32.2 1,235 389 31.5 Borders **Dumfries & Galloway** 1,536 331 21.5 4,109 26.7 Fife 1,097 Forth Valley 3,498 426 12.2 6,022 Grampian 1,097 18.2 Greater Glasgow & 12,608 3,834 30.4 Clyde 3,577 Highland 386 10.8 Lanarkshire 6,765 730 10.8 Lothian 8,833 1,215 13.8 238 84.5 Orkney 201 Shetland 257 223 86.8 Tayside 4,194 344 8.2 Western Isles 310 208 67.1 **Total for Scotland** 57,072 11,735 20.6

# Table 1: Primary 7 population and the number and percentage who received a Detailed Inspection by NHS Board across Scotland in school year 2012/13

# Key points

- The oral health of P7 children in Scotland continues to improve: in 2013, 72.8% of P7 children had no obvious decay experience in their permanent teeth, compared with 69.4% in 2011 (and 52.9% in 2005, the first P7 NDIP Report).
- The average number of P7 children's teeth affected by obvious decay experience improved from 0.7 in 2011 to 0.6 in 2013 (that figure was 1.29 in 2005).
- For the first time, P7 children in all SIMD deprivation quintiles have reached the 2010 National Target of 60% with no obvious decay experience.
- P7 children from all socio-economic backgrounds saw an improvement in oral health compared to the results of 2011, and the extent of disease continues to fall in those most affected by decay.
- Clear health inequalities remain, but the largest improvement in oral health is seen in areas in the most deprived SIMD quintile.

# **Results and Commentary**

## **Detailed Inspection Results**

# What proportion of P7 children in Scotland had no obvious decay experience in 2013?

Figure 1 shows the proportion of P7 children in NHS Boards who showed no signs of obvious decay experience in their permanent teeth. Across Scotland, 72.8% of P7 children fell into this category, with a range of 67.1% to 80.2% across the fourteen NHS Boards.

# Figure 1: Percentage of P7 children in Scotland with no obvious decay experience in 2013 by NHS Board



# What levels of obvious decay experience were seen in P7 children in 2013?

As shown in Figure 2, the average number of obviously decayed, missing and filled teeth across all P7 children examined in Scotland was 0.60. This ranged from 0.35 to 0.81 across the 14 NHS Boards in Scotland.





# How has the dental health of P7 children in Scotland changed over time?

Changes over time in the mean number of decayed, missing and filled permanent teeth are shown in Figure 3 and show a continuing decline (improvement) over the last eight years in terms of mean  $D_3MFT$  for the P7 population as a whole and also for the subgroup with caries experience.

Figure 3: Comparison over time between the mean number of decayed, missing and filled permanent teeth ( $D_3MFT$ ) in the P7 population and the mean number of decayed, missing and filled permanent teeth in those children with decay experience ( $D_3MFT$ >0)



Similarly, the data in Figure 4 below indicate a steady rise in the percentage of those with no obvious decay experience (i.e. an improvement in the percentage of dentally healthy children).





# What are the obvious decay experience results for permanent teeth of P7 children in NHS Boards in Scotland?

Table 2 provides details of the results for all 14 NHS Boards across Scotland. In this 2013 survey, 27.2% of P7 children in Scotland had obvious decay experience in their permanent teeth. For those children, the mean number of affected teeth was 2.24. This ranged across the Boards from 1.54 in Shetland to 2.65 in Tayside. The number of teeth affected in an individual child varied from one tooth to 14 teeth.

| Table 2: Obvious decay experience in permanent teeth of P7 children for each NHS Boa | Ird |
|--|-----|
| and Scotland in 2013   |     |

| NHS Board                  | % with no<br>obvious<br>decay<br>experience<br>in<br>permanent<br>teeth | Mean no.<br>of<br>decayed,<br>missing<br>and filled<br>permanent<br>teeth<br>(D-MET) | Mean no.<br>of decayed<br>permanent<br>teeth (D <sub>3</sub> T) | Mean no.<br>of missing<br>permanent<br>teeth (MT) | Mean no.<br>of filled<br>permanent<br>teeth (FT) | For those<br>with decay,<br>mean no.<br>of<br>decayed,<br>missing<br>and filled |
|----------------------------|---|--|---|---|--|---|
|                            |   | (23,000 1)   |   |   |  | teeth   |
|                            |   | 0.40   |   | 0.00  |  | $(D_3MFT>0)$  |
| Ayrshire & Arran           | 80.2  | 0.40   | 0.09  | 0.09  | 0.22   | 2.01  |
| Borders                    | 78.0  | 0.48   | 0.16  | 0.03  | 0.30   | 2.19  |
| Dumfries &<br>Galloway     | 70.5  | 0.68   | 0.29  | 0.07  | 0.32   | 2.34  |
| Fife                       | 73.9  | 0.55   | 0.19  | 0.10  | 0.26   | 2.09  |
| Forth Valley               | 67.2  | 0.81   | 0.34  | 0.07  | 0.39   | 2.41  |
| Grampian                   | 73.7  | 0.56   | 0.18  | 0.05  | 0.33   | 2.16  |
| Greater Glasgow<br>& Clyde | 67.8  | 0.75   | 0.25  | 0.10  | 0.40   | 2.33  |
| Highland                   | 73.1  | 0.59   | 0.18  | 0.15  | 0.26   | 2.16  |
| Lanarkshire                | 67.1  | 0.78   | 0.28  | 0.12  | 0.38   | 2.38  |
| Lothian                    | 76.9  | 0.47   | 0.13  | 0.07  | 0.26   | 2.04  |
| Orkney                     | 78.5  | 0.46   | 0.17  | 0.05  | 0.25   | 2.16  |
| Shetland                   | 77.5  | 0.35   | 0.14  | 0.00  | 0.21   | 1.54  |
| Tayside                    | 74.9  | 0.67   | 0.21  | 0.16  | 0.30   | 2.65  |
| Western Isles              | 79.0  | 0.52   | 0.25  | 0.03  | 0.24   | 2.50  |
| Average for<br>Scotland    | 72.8  | 0.60   | 0.20  | 0.09  | 0.32   | 2.24  |

Table 3 below summarises results for Scotland and the range across NHS Boards. On average, 10.8% of P7 children inspected had current obvious decay (untreated decay), i.e.  $D_3T>0$ .

When the decay process is clinically assessed to have reached the dentine layer of the permanent tooth (i.e.  $D_3$  stage), this normally means that restorative treatment (a filling) is required. The Care Index is used to describe the proportion of obvious decay experience in a population that has been treated restoratively (filled) and is expressed as the number of filled teeth divided by the number of obviously decayed, missing and filled teeth multiplied by 100 [(FT/D<sub>3</sub>MFT)x100].

# Table 3: Overall obvious decay experience in permanent teeth of P7 children in Scotland in2013

|   | %    | NHS         |
|---|------|-------------|
|   |      | Boards'     |
|   |      | % range     |
| Free of obvious decay experience at the dentinal level (D <sub>3</sub> MFT=0) | 72.8 | 67.1 – 80.2 |
| With obvious decay experience (D <sub>3</sub> MFT>0, as per BASCD)            | 27.2 | 19.8 – 32.9 |
| With 'current decay' ( $D_3T>0$ , as per BASCD)                               | 10.8 | 5.5 – 15.6  |
| Care index (FT/D <sub>3</sub> MFT)  | 53.3 | 44.1 – 62.5 |
|   | Mean | NHS         |
|   |      | Boards'     |
|   |      | range       |
| Obvious decay experience (D <sub>3</sub> MFT) across Scotland                 | 0.60 | 0.35 – 0.81 |
| Decayed teeth (D <sub>3</sub> T) across Scotland                              | 0.20 | 0.09 - 0.34 |
| Missing teeth (MT) across Scotland  | 0.09 | 0.00 - 0.16 |
| Filled teeth (FT) across Scotland   | 0.32 | 0.21 – 0.40 |
| Decayed, missing and filled teeth for those with obvious decay                | 2.24 | 1.54 – 2.65 |
| experience (D <sub>3</sub> MFT>0)   |      |             |

# What proportion of obvious decay experience in P7 children was treated with fillings?

Figure 5 shows the Care Index values obtained for the last five surveys. Only a limited improvement in the Care Index has occurred in the last eight years: on average, just over half of teeth with obvious caries experience were treated with a restoration in the 2013 survey.



#### Figure 5: Care Index (FT/D<sub>3</sub>MFTx100) for P7 children in Scotland; 2005-2013

# Is there a continuing link between area-based socio-economic deprivation and poor dental health among P7 children in Scotland?

All NDIP surveys on deprivation now report using the Scottish Index of Multiple Deprivation (SIMD)<sup>1</sup>. The SIMD classification identifies small area concentrations of multiple deprivation and is available at data zone level based on postcode unit information. It has seven domains (income, employment, education, housing, health, crime and geographical access), which have been combined into an overall index to rank relative multiple deprivation in all geographical areas throughout Scotland.

The main SIMD classification used here is based on quintiles of deprivation, where quintile 1 is the most deprived and quintile 5 is the least deprived.

Figure 6 illustrates the difference in dental health between P7 children in the different SIMD quintiles. Each fifth of the population has shown an improvement in dental health since the last survey. However, the major improvement has occurred in the most deprived quintiles, and for the first time all quintiles have now reached the 2010 National Target of 60% with no obvious decay experience. The mean  $D_3MFT$  ranged from 0.96 in the most deprived quintile (SIMD1) to 0.36 in the least deprived quintile (SIMD5).





The SIMD decile classification has 10 divisions of deprivation from decile 1 (most deprived) to decile 10 (least deprived) and the results for 2009, 2011 and 2013 are shown in Figure 7.





The same pattern is seen with the deciles, with most improvement occurring in the most deprived groups (12.9, 12.0 and 11.9 percentage points between 2009 and 2013 in SIMD1, SIMD2 and SIMD3 respectively).

### Measures of dental health inequality

Health inequality 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 simple absolute inequality in dental health has been measured for the three most recent P7 surveys. The difference in percentage of children with no obvious decay experience between those in quintile 1 and quintile 5 was 26.3 percentage points in 2009, 27.1 in 2011 and 20.8 in 2013. The difference in values between the two ends of the decile range was 31.1, 32.1 and 25.5 percentage points in 2009, 2011 and 2013 respectively. These findings indicate a reduction in simple absolute dental health inequality.

It is considered important to look across the whole social gradient, rather than solely at the most and least disadvantaged groups. Such measures are known as complex tests of health inequality. The <u>Slope Index of Inequality (SII)</u> is one of the recommended tests of complex inequality, as it reflects the entire socio-economic status (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. It is considered to be a consistent indicator with local populations.

The values for the Slope Index of Inequality over the three most recent studies were 1.14 (2009), 0.95 (2011) and 0.74 (2013). The findings again indicate a reduction in absolute dental health inequalities over time.

# Distribution of obvious decay experience across the population of P7 children in Scotland

The Significant Caries Index (SiC Index)<sup>2</sup> was calculated for each of the three most recent time points by taking the mean  $D_3MFT$  for the one third of individuals in each sample with the highest  $D_3MFT$  score. The values obtained were 2.55 (2009), 2.24 (2011) and 1.88 (2013). This index is considered to be a non-SES-based test of inequality.

Similarly, Figure 8 shows the mean  $D_3MFT$  of each tenth of the sample, with children ranked by the number of teeth with obvious decay experience. The SiC10 values, i.e. mean  $D_3MFT$  for the tenth of the sample with the most teeth affected by caries experience, were 4.51 (2009), 4.06 (2011) and 3.84 (2013). The area under the curve in relation to the distribution of the tenths of the population by  $D_3MFT$  score is known as the Scottish Caries Inequality Metric (SCIM10)<sup>3</sup>. The SCIM10 values for the respective years were 6.60, 5.42 and 4.35.

These non-SES-based measures of inequality again show a reduction in dental health inequality over time.

#### Figure 8: Mean $D_3MFT$ in each tenth of the distribution of $D_3MFT$ for P7 children in Scotland; 2009 – 2013



#### Dental health of the first permanent molar teeth

Across Scotland, 74.5% of P7 children had no obvious decay experience in their first permanent molars. Across the 14 NHS Boards, the range was from 69.0% in Lanarkshire to 83.1% in Shetland. Figure 9 shows the mean  $D_3MFT$  for first permanent molars for Scotland and for each NHS Board.





Figure 10 shows the proportion of decayed, missing and filled first permanent molar teeth and also the proportion that are apparently sound or sound and fissure-sealed. The proportion of first permanent molars fissure-sealed and sound varied across NHS Boards from 18.5% in Tayside to 57.5% in Shetland.

# Figure 10: Proportion of D<sub>3</sub>MFT, fissure-sealed and apparently sound, and apparently sound but NOT sealed first permanent molars in P7 children in 2013 by NHS Board and Scotland



### **Information Services Division**

A similar analysis is presented in Figure 11, but this time presenting the status of first permanent molars by SIMD decile. As expected, the proportion of first permanent molars affected by dental disease increases with increasing level of deprivation. The proportion of teeth fissure-sealed and apparently sound is relatively similar across the socio-economic deciles. However, the tenth of the P7 population with the highest level of deprivation has one of the lowest values.



#### Figure 11: Proportion of D<sub>3</sub>MFT, fissure-sealed and apparently sound, and apparently sound but NOT sealed first permanent molars in P7 children in 2013 by SIMD decile

Table 4 shows that approximately 10% of the occlusal surfaces of the first permanent molar teeth inspected were affected by obvious decay experience, i.e. untreated decay or a restoration was present. Additionally, of the first permanent molars inspected with decay experience, in 58% of these teeth the decay or restoration was recorded as being restricted to only the occlusal surface. It is acknowledged that the inspection process will tend to under-report caries on mesial and distal surfaces. Nevertheless, these finding support greater use of fissure sealants.

# Table 4: Percentage of surfaces of P7 children's first permanent molars present on inspection affected by decay experience in Scotland in 2013

|       |     |          |        | Surface |        |         |
|-------|-----|----------|--------|---------|--------|---------|
| То    | oth | Occlusal | Mesial | Distal  | Buccal | Lingual |
|       |     | (%)      | (%)    | (%)     | (%)    | (%)     |
| Upper | 16  | 10.1     | 2.0    | 1.4     | 0.9    | 1.9     |
|       | 26  | 9.9      | 2.1    | 1.4     | 0.9    | 2.0     |
| Lower | 36  | 10.4     | 1.4    | 1.5     | 2.6    | 1.7     |
|       | 46  | 10.0     | 1.5    | 1.4     | 2.6    | 1.5     |

### Conclusions

- The oral health of P7 children in Scotland continues to improve. The children inspected in school year 2012/13 would have had access to the national universal tooth brushing programme from 3 years of age and some would have had access to the fluoride varnish programme in primary school.
- It is anticipated this improved level of dental health will be maintained as the Childsmile Programme<sup>4</sup> continues to be refined and implemented at NHS Board level.
- Although clear health inequalities remain in both absolute and relative terms (across the socio-economic gradient) – these are beginning to reduce, with the SIMD quintiles showing most oral health improvement being those of the most deprived areas. The proportionate universalism approach advocated by the Marmot Review of 2010<sup>5</sup> will continue to be adopted in oral health improvement programmes in an effort to reduce further the gap between the most and least deprived.
- The proportion of teeth with obvious decay experience that had fillings, as seen on the day of inspection (Care Index), was just over 50%. Additionally, the proportion of first permanent molars with fissure sealants was relatively low, particularly in the most deprived groups. The findings are similar to those of 2011 and show the continuing need for the promotion and implementation of the SDCEP guidance document<sup>6</sup> on the prevention and management of caries in children.

# 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.        |
| Buccal               | Tooth surface next to cheek.                                   |
| Care Index           | Proportion of obvious decay experience that has been           |
|                      | treated restoratively; expressed as number of filled teeth     |
|                      | divided by number of obviously decayed, missing and            |
|                      | filled teeth, multiplied by 100 [(FT/D <sub>3</sub> MFT)x100]. |
| Childsmile           | National oral health improvement programme for                 |
|                      | 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.                     |
| Distal               | Tooth surface towards back of mouth.                           |
| D <sub>3</sub> MFT   | Obvious decay experience in permanent teeth, as noted          |
|                      | above; includes both missing teeth (extracted due to           |
|                      | decay) and filled teeth.                                       |
| D <sub>3</sub> MFT>0 | (Any) amount of decay experience in permanent teeth.           |
| D <sub>3</sub> T     | Obviously decayed permanent teeth.                             |
| Fissure-sealed       | Protected from decay via protective plastic coating            |
|                      | applied to the biting (occlusal) surfaces of back teeth.       |
| FT                   | Filled permanent teeth.  |
| LA                   | Local authority.   |
| Lingual              | Tooth surface next to tongue.                                  |
| Mesial               | Situated toward the middle of the front of the jaw along       |
|                      | the curve of the dental arch.                                  |
| MT                   | Missing permanent teeth.                                       |

| NHS Board abbreviations | AA: Ayrshire & Arran<br>B: Borders<br>DG: Dumfries & Galloway<br>F: Fife<br>FV: Forth Valley<br>G: Grampian<br>GGC: Greater Glasgow & Clyde<br>H: Highland<br>La: Lanarkshire<br>Lo: Lothian<br>O: Orkney<br>S: Shetland   |
|-------------------------|--|
|                         | WI: Western Isles  |
| Obvious decay           | Disease process that clinically appears to have<br>penetrated dentine (the layer below the outer white<br>enamel of the teeth). This is described internationally as<br>decay at the $D_3$ level and includes <i>pulpal decay</i> (i.e.<br>decay into the deeper pulp).  |
| Occlusal                | Chewing or grinding tooth surface.   |
| SES                     | Socio-economic status.   |
| SII                     | Slope Index of Inequality. One of the recommended tests<br>of complex inequality, as it reflects the entire SES<br>distribution and weights for the population share in the<br>respective groups. SII may be interpreted as the absolute<br>difference overall in $D_3MFT$ score when moving across<br>the SES spectrum and is indicative of the total experience<br>of individuals in the whole population.                         |
| SIMD                    | Scottish Index of Multiple Deprivation. Classification<br>identifying small area concentrations of multiple<br>deprivation presented at data zone level and based on<br>postcode unit information. Seven domains (income,<br>employment, education, housing, health, crime and<br>geographical access) are combined into an overall index<br>to rank relative multiple deprivation in all geographical<br>areas throughout Scotland. |
| 16: upper right         | Numbering of first permanent molar teeth according to  |
| 26: upper left          | FDI World Dental Federation tooth notation system.   |
| 36: lower left          |  |
| 46: lower right         |  |

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- NHS Boards in Scotland.
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- Scottish Association of Community Dental Directors.

# List of Tables, Figures and Diagrams

| Table No. | Name   | Time period | File & size |
|-----------|--|-------------|-------------|
| 1         | Primary 7 population and the number and                | School year | Table 1     |
|           | percentage who received a Detailed                     | 2012/13.    |             |
|           | Inspection by NHS Board across Scotland.               |             |             |
| 2         | Obvious decay experience in permanent                  | School year | Table 2     |
|           | teeth of P7 children for each NHS Board                | 2012/13.    |             |
|           | and Scotland.  |             |             |
| 3         | Overall obvious decay experience in                    | School vear | Table 3     |
|           | permanent teeth of P7 children in Scotland.            | 2012/13.    |             |
| 4         | Percentage of surfaces of P7 children's first          | School vear | Table 4     |
|           | permanent molars present on inspection                 | 2012/13.    |             |
|           | affected by decay experience in Scotland.              |             |             |
| A1        | Primary 1 children inspected by NHS                    | School year | Table A1    |
|           | Boards.  | 2012/13.    |             |
| A2        | Primary 7 children inspected by NHS                    | School vear | Table A2    |
|           | Boards.  | 2012/13.    |             |
| Figure    | Name   | Time period | File & size |
| No.       |  |             |             |
| 1         | Percentage of P7 children in Scotland with             | School year | Figure 1    |
|           | no obvious decay experience in 2013 by                 | 2012/13.    |             |
|           | NHS Board  |             |             |
| 2         | Mean number of obviously decayed,                      | School year | Figure 2    |
|           | missing and filled permanent teeth ( $D_3MFT$ )        | 2012/13.    |             |
|           | of P7 children in Scotland and by NHS                  |             |             |
|           | Board  |             |             |
| 3         | Comparison over time between the mean                  | 2005-2013   | Figure 3    |
|           | number of decayed, missing and filled                  |             |             |
|           | permanent teeth ( $D_3MFT$ ) in the P7                 |             |             |
|           | population and the mean number of                      |             |             |
|           | decayed, missing and filled permanent                  |             |             |
|           | teeth in those children with decay                     |             |             |
|           | experience (D <sub>3</sub> MFT>0)                      |             |             |
| 4         | Trends in the proportion of P7 children in             | 2005-2013   | Figure 4    |
|           | Scotland with no obvious decay experience              |             |             |
| 5         | Care Index (FT/D <sub>3</sub> MFTx100) for P7 children | 2005-2013   | Figure 5    |
|           | in Scotland; 2005-2013                                 |             |             |
| 6         | Change in the proportion of P7 children in             | 2009-2013   | Figure 6    |
|           | Scotland with no obvious decay experience              |             |             |
|           | by SIMD quintile                                       |             |             |
| 7         | Change in the proportion of P7 children in             | 2009-2013   | Figure 7    |
|           | Scotland with no obvious decay experience              |             |             |
|           | by SIMD decile   |             |             |
| 8         | Mean D₃MFT in each tenth of the                        | 2009-2013   | Figure 8    |
|           | distribution of D₃MFT for P7 children in               |             |             |
|           | Scotland   |             |             |
| 9         | Mean number of obviously decayed,                      | School year | Figure 9    |
|           | missing and filled first permanent molars in           | 2012/13     |             |
|           | P7 children in Scotland and in each NHS                |             |             |
|           | Board  |             |             |

| 10             | Proportion of D <sub>3</sub> MFT, fissure-sealed and<br>apparently sound, and apparently sound<br>but NOT sealed first permanent molars in<br>P7 children by NHS Board and Scotland | School year<br>2012/13 | <u>Figure 10</u> |
|----------------|---|------------------------|------------------|
| 11             | Proportion of D <sub>3</sub> MFT, fissure-sealed and apparently sound, and apparently sound but NOT sealed first permanent molars in P7 children in 2013 by SIMD decile             | School year<br>2012/13 | Figure 11        |
| Diagram<br>No. | Name  | Time period            | File & size      |
| 1              | The various stages of tooth decay   | n/a                    | Diagram 1        |

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# **Further Information**

Further information can be found on the <u>ISD website</u>.

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# Appendix

### 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 course for the detailed NDIP survey of P7 children in Scotland was held in Edinburgh in November 2012. The training course was organised by NHS Lothian and the Public Health Sciences Directorate of NHS Health Scotland.

Mandatory training and calibration were run over three separate courses to accommodate the 50 inspection teams (dentist and dental nurse) who came from all 14 NHS Boards. Training involved sessions on inspection procedures, tooth/surface codes and diagnostic criteria based on the British Association for the Study of Community Dentistry (BASCD) Trainers' Pack<sup>7</sup>. Clinical training sessions were then undertaken on schoolchildren, and were followed by the calibration sessions on a further group of P7 children. Calibration sessions involved each inspection team examining the same 10 children.

Analyses were undertaken by the Community Oral Health Section, University of Glasgow, supported by colleagues in NHS Lothian and NHS National Services Scotland's Information Services Division. Inter-examiner agreement was assessed using the percentage agreement and Kappa statistic assessed at the patient level on DMFT and separately for DT, MT, and FT components.

Cohen Kappa estimates agreement, which is considered<sup>8</sup>:

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

All 50 inspection teams calibrated with percentage agreement ranging from 97% to 100%, and the Kappa estimates for DMFT scores at the patient level did not drop below moderate. For 13 inspection teams where the Kappa was lower than substantial (due to disagreement on not more than three patients) examiners received local detailed feedback to ensure awareness of variation.

## A3 – International comparisons

According to the World Health Organisation (WHO), dental caries is still a major oral health problem in most high- and middle-income countries, affecting 60-90% of schoolchildren and the vast majority of adults<sup>9</sup>. The <u>WHO Global Oral Health Database</u> and the <u>WHO Oral Health Country/Area Profile Programme<sup>10</sup></u> provide information on trends in dental caries, mainly among 12-year-old children, from 1937.

Recent figures show how dental caries prevalence compares across a large number of countries. However, as some results are from national surveys with representative samples and others relate only to small local surveys, caution is required in making simplistic international comparisons using the raw data. It is also necessary to understand the public health aims behind the WHO 'basic methods' diagnostic criteria employed by most datasets in the databank, and these surveys are only intended to provide an overview of caries prevalence.

International data comparing prevalence and trends in 12-year-olds are available on the Scottish Public Health Observatory (ScotPHO)<sup>11</sup> website (<u>http://www.scotpho.org.uk/health-wellbeing-and-disease/oral-health/data/children-international-data-on-12-year-olds</u>).

## A4 – 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, 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 varies slightly according to whether a P1 or a P7 child has been inspected).

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 one or more of the following: history of tooth decay, a broken or damaged front tooth, tooth wear, poor oral hygiene or may require orthodontics.
- 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.

#### Primary 1 Data

During 2012/13, 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 51,573 P1 children were inspected (Table A1). This represents 91.4% of P1 children who attended mainstream Local Authority schools across Scotland in the 2012/13 school year and whose parents/carers were advised by letter of the oral health of their child.

| NHS Board                     | Total no.<br>of P1<br>children in<br>Local<br>Authority<br>schools | Total no.<br>of P1<br>children<br>inspected | Proportion<br>(%) of P1<br>children<br>inspected | Proportion<br>(%) of A<br>letters<br>issued | Proportion<br>(%) of B<br>letters<br>issued | Proportion<br>(%) of C<br>letters<br>issued |
|-------------------------------|--|---|--|---|---|---|
| Ayrshire &<br>Arran           | 3,876  | 3,535                                       | 91.2   | 5.7   | 27.4  | 66.9  |
| Borders                       | 1,185  | 1,087                                       | 91.7   | 3.3   | 23.6  | 73.0  |
| Dumfries &<br>Galloway        | 1,521  | 1,393                                       | 91.6   | 9.1   | 23.8  | 67.1  |
| Fife                          | 4,067  | 3,747                                       | 92.1   | 6.9   | 25.3  | 67.9  |
| Forth Valley                  | 3,324  | 3,101                                       | 93.3   | 9.9   | 23.7  | 66.4  |
| Grampian                      | 6,033  | 5,360                                       | 88.8   | 9.3   | 20.2  | 70.5  |
| Greater<br>Glasgow &<br>Clyde | 13,052   | 11,700                                      | 89.6   | 12.4  | 26.8  | 60.8  |
| Highland                      | 3,173  | 2,981                                       | 93.9   | 5.2   | 27.7  | 67.1  |
| Lanarkshire                   | 6,503  | 6,021                                       | 92.6   | 11.2  | 23.5  | 65.3  |
| Lothian                       | 8,959  | 8,130                                       | 90.7   | 8.0   | 22.3  | 69.8  |
| Orkney                        | 217  | 196   | 90.3   | 2.0   | 23.0  | 75.0  |
| Shetland                      | 275  | 219   | 79.6   | 0.9   | 32.0  | 67.1  |
| Tayside                       | 4,005  | 3,859                                       | 96.4   | 9.6   | 24.0  | 66.4  |
| Western Isles                 | 256  | 244   | 95.3   | 7.0   | 27.9  | 65.2  |
| Total for<br>Scotland         | 56,446   | 51,573                                      | 91.4   | 9.2   | 24.5  | 66.3  |

#### Table A1: Primary 1 children inspected by NHS Boards during school year 2012/13

### Primary 7 Data

In total, 45,011 P7 children received a *Basic Inspection*. This represents 78.9% of P7 children attending mainstream Local Authority schools across Scotland (Table A2). 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.

| NHS Board     | Total no.<br>of P7<br>children in<br>Local<br>Authority | Total no.<br>of P7<br>children<br>inspected | Proportion<br>(%) of P7<br>children<br>inspected | Proportion<br>(%) of A<br>letters<br>issued | Proportion<br>(%) of B<br>letters<br>issued | Proportion<br>(%) of C<br>letters<br>issued |
|---------------|---|---|--|---|---|---|
|               | schools   |   |  |   |   |   |
| Ayrshire &    | 3,890   | 3,232                                       | 83.1   | 1.1   | 56.9  | 42.0  |
| Arran         |   |   |  |   |   |   |
| Borders       | 1,235   | 1,050                                       | 85.0   | 0.9   | 42.6  | 56.6  |
| Dumfries &    | 1,536   | 1,186                                       | 77.2   | 2.3   | 57.6  | 40.1  |
| Galloway      |   |   |  |   |   |   |
| Fife          | 4,109   | 3,272                                       | 79.6   | 1.8   | 41.2  | 57.1  |
| Forth Valley  | 3,498   | 2,544                                       | 72.7   | 3.1   | 51.2  | 45.7  |
| Grampian      | 6,022   | 4,370                                       | 72.6   | 1.7   | 56.7  | 41.6  |
| Greater       | 12,608  | 10,383                                      | 82.4   | 3.0   | 55.3  | 41.7  |
| Glasgow &     |   |   |  |   |   |   |
| Clyde         |   |   |  |   |   |   |
| Highland      | 3,577   | 2,897                                       | 81.0   | 2.2   | 55.0  | 42.8  |
| Lanarkshire   | 6,765   | 5,440                                       | 80.4   | 2.8   | 52.4  | 44.8  |
| Lothian       | 8,833   | 6,489                                       | 73.5   | 2.0   | 53.1  | 44.9  |
| Orkney        | 238   | 201   | 84.5   | 3.5   | 59.2  | 37.3  |
| Shetland      | 251   | 225   | 89.6   | 0.9   | 48.9  | 50.2  |
| Tayside       | 4,194   | 3,515                                       | 83.8   | 1.5   | 47.3  | 51.2  |
| Western Isles | 310   | 207   | 66.8   | 2.4   | 70.5  | 27.1  |
| Total for     | 57,066  | 45,011                                      | 78.9   | 2.2   | 52.8  | 45.0  |
| Scotland      |   |   |  |   |   |   |

#### Table A2: Primary 7 children inspected by NHS Boards during school year 2012/13

### A5 – Results at sub-NHS Board level

This appendix shows the 2013 Detailed NDIP results at Community Health Partnership level, where relevant, for the following variables:

- Mean age
- Weighted % no obvious decay experience
- Weighted mean DMFT
- Weighted mean DMFT for first permanent molar
- Weighted mean DT
- Weighted mean MT
- Weighted mean FT
- Weighted mean number of teeth decayed into the pulp
- Weighted mean number of sealed teeth
- Mean DMFT for children with DMFT>0

Results for sub-NHS Board areas are included here if a minimum of 250 children being sampled was targeted.

# Community Health Partnership results for NHS Ayrshire & Arran

|                |     |      | Mean age |         |         |  |  |  |
|----------------|-----|------|----------|---------|---------|--|--|--|
| CHP name       | n   | Mean | Std dev  | Minimum | Maximum |  |  |  |
| East Ayrshire  | 421 | 11.5 | 0.3      | 10.9    | 12.6    |  |  |  |
| North Ayrshire | 485 | 11.6 | 0.3      | 10.9    | 12.4    |  |  |  |
| South Ayrshire | 348 | 11.4 | 0.3      | 10.8    | 12.2    |  |  |  |

|                | Weighted % no obvious decay experienc |           |           |  |
|----------------|---------------------------------------|-----------|-----------|--|
| CHP name       | %                                     | Lower 95% | Upper 95% |  |
|                |                                       | CL        | CL        |  |
| East Ayrshire  | 81.0                                  | 77.9      | 84.2      |  |
| North Ayrshire | 77.4                                  | 74.4      | 80.4      |  |
| South Ayrshire | 84.2                                  | 80.9      | 87.6      |  |

|                | Weighted mean DMFT |           |           |  |
|----------------|--------------------|-----------|-----------|--|
| CHP name       | Mean DMFT          | Lower 95% | Upper 95% |  |
|                |                    | CL        | CL        |  |
| East Ayrshire  | 0.4                | 0.3       | 0.4       |  |
| North Ayrshire | 0.4                | 0.4       | 0.5       |  |
| South Ayrshire | 0.4                | 0.3       | 0.5       |  |

|                | Weighted mean DT |                 |                 |  |
|----------------|------------------|-----------------|-----------------|--|
| CHP name       | Mean DT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East Ayrshire  | 0.1              | 0.1             | 0.2             |  |
| North Ayrshire | 0.1              | 0.1             | 0.1             |  |
| South Ayrshire | 0.1              | 0.0             | 0.1             |  |

|                | Weighted mean MT |                 |                 |  |
|----------------|------------------|-----------------|-----------------|--|
| CHP name       | Mean MT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East Ayrshire  | 0.0              | 0.0             | 0.1             |  |
| North Ayrshire | 0.1              | 0.0             | 0.1             |  |
| South Ayrshire | 0.1              | 0.1             | 0.2             |  |

|                | Weighted mean FT |                 |                 |  |  |
|----------------|------------------|-----------------|-----------------|--|--|
| CHP name       | Mean FT          | Lower 95%<br>CL | Upper 95%<br>CL |  |  |
| East Ayrshire  | 0.2              | 0.1             | 0.2             |  |  |
| North Ayrshire | 0.3              | 0.2             | 0.3             |  |  |
| South Ayrshire | 0.2              | 0.1             | 0.3             |  |  |

|                | Weighted me     | Weighted mean DMFT for first permanent molar |                 |  |  |
|----------------|-----------------|--|-----------------|--|--|
| CHP name       | Mean<br>DMFTfpm | Lower 95%<br>CL                              | Upper 95%<br>CL |  |  |
| East Ayrshire  | 0.3             | 0.3  | 0.4             |  |  |
| North Ayrshire | 0.4             | 0.3  | 0.4             |  |  |
| South Ayrshire | 0.3             | 0.2  | 0.4             |  |  |

|                | Weighted mean number of teeth decayed into the pulp |           |           |  |
|----------------|---|-----------|-----------|--|
| CHP name       | Mean PT   | Lower 95% | Upper 95% |  |
|                |   | UL        | UL        |  |
| East Ayrshire  | 0.0   | 0.0       | 0.0       |  |
| North Ayrshire | 0.0   | 0.0       | 0.0       |  |
| South Ayrshire | 0.0   | 0.0       | 0.0       |  |

|                | Weighted mean number of sealed teeth |           |     |  |  |
|----------------|--------------------------------------|-----------|-----|--|--|
| CHP name       | Mean ST                              | Upper 95% |     |  |  |
|                |                                      | CL        | CL  |  |  |
| East Ayrshire  | 1.7                                  | 1.6       | 1.9 |  |  |
| North Ayrshire | 1.6                                  | 1.4       | 1.7 |  |  |
| South Ayrshire | 1.6                                  | 1.4       | 1.8 |  |  |

|                |     | Mean DMFT for children with DMFT>0 |                 |                 |  |
|----------------|-----|------------------------------------|-----------------|-----------------|--|
| CHP name       | n   | Mean                               | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East Ayrshire  | 79  | 1.9                                | 1.6             | 2.2             |  |
| North Ayrshire | 119 | 1.9                                | 1.7             | 2.1             |  |
| South Ayrshire | 55  | 2.3                                | 1.9             | 2.7             |  |

# Community Health Partnership results for NHS Fife

|                                 |     |      | Mean age |         |         |
|---------------------------------|-----|------|----------|---------|---------|
| CHP name                        | n   | Mean | Std dev  | Minimum | Maximum |
| Dunfermline &<br>West Fife      | 468 | 11.4 | 0.3      | 10.8    | 12.9    |
| Glenrothes &<br>North East Fife | 349 | 11.5 | 0.4      | 10.7    | 12.8    |
| Kirkcaldy &<br>Levenmouth       | 280 | 11.5 | 0.3      | 10.8    | 12.4    |

|                                 | Weighted % no obvious decay experience |                 |                 |  |
|---------------------------------|--|-----------------|-----------------|--|
| CHP name                        | %                                      | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 73.7                                   | 70.1            | 77.3            |  |
| Glenrothes &<br>North East Fife | 77.8                                   | 73.9            | 81.7            |  |
| Kirkcaldy &<br>Levenmouth       | 69.6                                   | 64.8            | 74.4            |  |

|                                 | Weighted mean DMFT |                 |                 |  |
|---------------------------------|--------------------|-----------------|-----------------|--|
| CHP name                        | Mean DMFT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 0.5                | 0.5             | 0.6             |  |
| Glenrothes &<br>North East Fife | 0.4                | 0.3             | 0.5             |  |
| Kirkcaldy &<br>Levenmouth       | 0.7                | 0.5             | 0.8             |  |

|                                 | Weighted mean DT |                 |                               |  |
|---------------------------------|------------------|-----------------|-------------------------------|--|
| CHP name                        | Mean DT          | Lower 95%<br>CL | Upper 9 <mark>5%</mark><br>CL |  |
| Dunfermline &<br>West Fife      | 0.3              | 0.2             | 0.3                           |  |
| Glenrothes &<br>North East Fife | 0.1              | 0.1             | 0.2                           |  |
| Kirkcaldy &<br>Levenmouth       | 0.2              | 0.1             | 0.2                           |  |

|                                 | Weighted mean MT |                 |                 |  |
|---------------------------------|------------------|-----------------|-----------------|--|
| CHP name                        | Mean MT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 0.1              | 0.0             | 0.1             |  |
| Glenrothes &<br>North East Fife | 0.1              | 0.0             | 0.1             |  |
| Kirkcaldy &<br>Levenmouth       | 0.2              | 0.1             | 0.2             |  |

|                                 | Weighted mean FT |                 |                 |  |
|---------------------------------|------------------|-----------------|-----------------|--|
| CHP name                        | Mean FT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 0.2              | 0.2             | 0.3             |  |
| Glenrothes &<br>North East Fife | 0.2              | 0.2             | 0.3             |  |
| Kirkcaldy &<br>Levenmouth       | 0.4              | 0.3             | 0.5             |  |

|                                 | Weighted mean DMFT for first permanent<br>molar |                 |                 |  |
|---------------------------------|---|-----------------|-----------------|--|
| CHP name                        | Mean<br>DMFTfpm                                 | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 0.4   | 0.4             | 0.5             |  |
| Glenrothes &<br>North East Fife | 0.4   | 0.3             | 0.4             |  |
| Kirkcaldy &<br>Levenmouth       | 0.6   | 0.5             | 0.7             |  |

|                                 | Weighted mean number of teeth decayed into the pulp |                 |                 |  |
|---------------------------------|---|-----------------|-----------------|--|
| CHP name                        | Mean PT   | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 0.0   | 0.0             | 0.0             |  |
| Glenrothes &<br>North East Fife | 0.0   | 0.0             | 0.0             |  |
| Kirkcaldy &<br>Levenmouth       | 0.0   | 0.0             | 0.0             |  |

|                                 | Weighted mean number of sealed teeth |                 |                 |  |
|---------------------------------|--------------------------------------|-----------------|-----------------|--|
| CHP name                        | Mean ST                              | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline & West Fife         | 1.4                                  | 1.3             | 1.5             |  |
| Glenrothes &<br>North East Fife | 1.4                                  | 1.2             | 1.5             |  |
| Kirkcaldy &<br>Levenmouth       | 1.4                                  | 1.2             | 1.5             |  |

|                                 |     | Mean DMFT for children with DMFT>0 |                 |                 |  |
|---------------------------------|-----|------------------------------------|-----------------|-----------------|--|
| CHP name                        | n   | Mean                               | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Dunfermline &<br>West Fife      | 124 | 2.1                                | 1.9             | 2.4             |  |
| Glenrothes &<br>North East Fife | 75  | 1.9                                | 1.6             | 2.2             |  |
| Kirkcaldy &<br>Levenmouth       | 86  | 2.2                                | 1.9             | 2.5             |  |

# Community Health Partnership results for NHS Grampian

|               |     |      | Mean age |         |         |  |
|---------------|-----|------|----------|---------|---------|--|
| CHP name      | n   | Mean | Std dev  | Minimum | Maximum |  |
| Aberdeen City | 316 | 11.6 | 0.3      | 10.9    | 12.7    |  |
| Aberdeenshire | 484 | 11.6 | 0.3      | 10.8    | 12.7    |  |
| Moray         | 297 | 11.5 | 0.3      | 10.5    | 12.3    |  |

|               | Weighted % | y experience |           |
|---------------|------------|--------------|-----------|
| CHP name      | %          | Lower 95%    | Upper 95% |
|               |            | CL           | CL        |
| Aberdeen City | 77.8       | 73.5         | 82.1      |
| Aberdeenshire | 70.8       | 66.9         | 74.7      |
| Moray         | 72.4       | 67.6         | 77.2      |

|               | Weighted mean DMFT |           |           |  |
|---------------|--------------------|-----------|-----------|--|
| CHP name      | Mean DMFT          | Lower 95% | Upper 95% |  |
|               |                    | CL        | CL        |  |
| Aberdeen City | 0.5                | 0.3       | 0.6       |  |
| Aberdeenshire | 0.6                | 0.5       | 0.8       |  |
| Moray         | 0.6                | 0.4       | 0.7       |  |

|               | Weighted mean DT |           |           |  |
|---------------|------------------|-----------|-----------|--|
| CHP name      | Mean DT          | Lower 95% | Upper 95% |  |
|               |                  | CL        | CL        |  |
| Aberdeen City | 0.2              | 0.1       | 0.2       |  |
| Aberdeenshire | 0.2              | 0.2       | 0.3       |  |
| Moray         | 0.2              | 0.1       | 0.2       |  |

|               | Weighted mean MT                |     |     |  |  |
|---------------|---------------------------------|-----|-----|--|--|
| CHP name      | Mean MT Lower 95% Upper 9<br>CL |     |     |  |  |
| Aberdeen City | 0.1                             | 0.0 | 0.1 |  |  |
| Aberdeenshire | 0.0                             | 0.0 | 0.1 |  |  |
| Moray         | 0.0                             | 0.0 | 0.1 |  |  |

|               | Weighted mean FT |                 |                 |  |
|---------------|------------------|-----------------|-----------------|--|
| CHP name      | Mean FT          | Lower 95%<br>Cl | Upper 95%<br>Cl |  |
|               |                  | 02              | Ű.              |  |
| Aberdeen City | 0.2              | 0.2             | 0.3             |  |
| Aberdeenshire | 0.4              | 0.3             | 0.5             |  |
| Moray         | 0.4              | 0.3             | 0.5             |  |

|               | Weighted me     | Weighted mean DMFT for first permanent molar |                 |  |  |
|---------------|-----------------|--|-----------------|--|--|
| CHP name      | Mean<br>DMFTfpm | Lower 95%<br>CL                              | Upper 95%<br>CL |  |  |
| Aberdeen City | 0.4             | 0.3  | 0.4             |  |  |
| Aberdeenshire | 0.6             | 0.5  | 0.6             |  |  |
| Moray         | 0.5             | 0.4  | 0.6             |  |  |

|               | Weighted mean number of teeth decayed into the pulp |                 |                 |  |
|---------------|---|-----------------|-----------------|--|
| CHP name      | Mean PT   | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Aberdeen City | 0.0   | 0.0             | 0.0             |  |
| Aberdeenshire | 0.0   | 0.0             | 0.0             |  |
| Moray         | 0.0   | 0.0             | 0.1             |  |

|               | Weighted mean number of sealed teeth |           |           |  |
|---------------|--------------------------------------|-----------|-----------|--|
| CHP name      | Mean ST                              | Lower 95% | Upper 95% |  |
|               |                                      | CL        | CL        |  |
| Aberdeen City | 0.6                                  | 0.4       | 0.7       |  |
| Aberdeenshire | 1.3                                  | 1.1       | 1.4       |  |
| Moray         | 1.4                                  | 1.2       | 1.6       |  |

|               |     | Mean DMFT for children with DMFT>0 |                 |                 |  |
|---------------|-----|------------------------------------|-----------------|-----------------|--|
| CHP name      | n   | Mean                               | Lower 95%<br>CL | Upper 95%<br>CL |  |
| Aberdeen City | 72  | 2.1                                | 1.8             | 2.5             |  |
| Aberdeenshire | 153 | 2.3                                | 2.0             | 2.5             |  |
| Moray         | 79  | 2.0                                | 1.7             | 2.3             |  |

# Community Health Partnership results for NHS Greater Glasgow & Clyde

|                        |       |      | Mean age |         |         |
|------------------------|-------|------|----------|---------|---------|
| CHP name               | n     | Mean | Std dev  | Minimum | Maximum |
| East<br>Dunbartonshire | 333   | 11.5 | 0.3      | 10.9    | 12.4    |
| East<br>Renfrewshire   | 331   | 11.5 | 0.3      | 10.6    | 12.4    |
| Glasgow City           | 1,381 | 11.5 | 0.3      | 10.8    | 12.9    |
| Inverclyde             | 375   | 11.5 | 0.3      | 10.8    | 12.6    |
| Renfrewshire           | 430   | 11.5 | 0.3      | 10.8    | 13.0    |
| West<br>Dunbartonshire | 388   | 11.5 | 0.3      | 10.9    | 12.4    |

|                | Weighted % no obvious decay experience |           |           |  |
|----------------|--|-----------|-----------|--|
| CHP name       | %                                      | Lower 95% | Upper 95% |  |
|                |  | CL        | CL        |  |
| East           | 77.0                                   | 73.2      | 80.9      |  |
| Dunbartonshire |  |           |           |  |
| East           | 80.1                                   | 76.2      | 84.0      |  |
| Renfrewshire   |  |           |           |  |
| Glasgow City   | 60.6                                   | 58.4      | 62.9      |  |
| Inverclyde     | 66.4                                   | 62.6      | 70.1      |  |
| Renfrewshire   | 75.4                                   | 71.7      | 79.0      |  |
| West           | 68.4                                   | 64.8      | 72.1      |  |
| Dunbartonshire |  |           |           |  |

|                        | Weighted mean DMFT |                 |                 |  |
|------------------------|--------------------|-----------------|-----------------|--|
| CHP name               | Mean DMFT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.5                | 0.4             | 0.6             |  |
| East<br>Renfrewshire   | 0.3                | 0.3             | 0.4             |  |
| Glasgow City           | 1.0                | 0.9             | 1.0             |  |
| Inverclyde             | 0.8                | 0.7             | 0.9             |  |
| Renfrewshire           | 0.6                | 0.5             | 0.7             |  |
| West<br>Dunbartonshire | 0.7                | 0.6             | 0.8             |  |

|                        | Weighted mean DT |                 |                 |  |
|------------------------|------------------|-----------------|-----------------|--|
| CHP name               | Mean DT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.1              | 0.1             | 0.2             |  |
| East<br>Renfrewshire   | 0.1              | 0.1             | 0.1             |  |
| Glasgow City           | 0.3              | 0.3             | 0.4             |  |
| Inverclyde             | 0.1              | 0.1             | 0.2             |  |
| Renfrewshire           | 0.2              | 0.1             | 0.3             |  |
| West<br>Dunbartonshire | 0.3              | 0.2             | 0.3             |  |

|                        | Weighted mean MT |                 |                 |  |
|------------------------|------------------|-----------------|-----------------|--|
| CHP name               | Mean MT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.0              | 0.0             | 0.1             |  |
| East<br>Renfrewshire   | 0.0              | 0.0             | 0.0             |  |
| Glasgow City           | 0.1              | 0.1             | 0.2             |  |
| Inverclyde             | 0.1              | 0.1             | 0.2             |  |
| Renfrewshire           | 0.1              | 0.1             | 0.2             |  |
| West<br>Dunbartonshire | 0.1              | 0.1             | 0.1             |  |

|                        | Weighted mean FT |                 |                 |  |
|------------------------|------------------|-----------------|-----------------|--|
| CHP name               | Mean FT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.3              | 0.2             | 0.4             |  |
| East<br>Renfrewshire   | 0.2              | 0.2             | 0.3             |  |
| Glasgow City           | 0.5              | 0.4             | 0.5             |  |
| Inverclyde             | 0.5              | 0.4             | 0.6             |  |
| Renfrewshire           | 0.3              | 0.2             | 0.4             |  |
| West<br>Dunbartonshire | 0.4              | 0.3             | 0.4             |  |

|                        | Weighted mean DMFT for first permanent molar |                 |                 |  |
|------------------------|--|-----------------|-----------------|--|
| CHP name               | Mean<br>DMFTfpm                              | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.5  | 0.4             | 0.6             |  |
| East<br>Renfrewshire   | 0.3  | 0.2             | 0.4             |  |
| Glasgow City           | 0.8  | 0.7             | 0.8             |  |
| Inverclyde             | 0.7  | 0.6             | 0.8             |  |
| Renfrewshire           | 0.5  | 0.4             | 0.6             |  |
| West<br>Dunbartonshire | 0.6  | 0.5             | 0.7             |  |

|                        | Weighted mean number of teeth decayed into the pulp |                 |                 |  |
|------------------------|---|-----------------|-----------------|--|
| CHP name               | Mean PT   | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 0.0   | 0.0             | 0.0             |  |
| East<br>Renfrewshire   | 0.0   | 0.0             | 0.0             |  |
| Glasgow City           | 0.1   | 0.0             | 0.1             |  |
| Inverclyde             | 0.0   | 0.0             | 0.0             |  |
| Renfrewshire           | 0.0   | 0.0             | 0.0             |  |
| West<br>Dunbartonshire | 0.0   | 0.0             | 0.1             |  |

|                | Weighted mean number of sealed teeth |           |           |  |
|----------------|--------------------------------------|-----------|-----------|--|
| CHP name       | Mean ST                              | Lower 95% | Upper 95% |  |
|                |                                      | CL        | CL        |  |
| East           | 1.2                                  | 1.0       | 1.3       |  |
| Dunbartonshire |                                      |           |           |  |
| East           | 1.2                                  | 1.0       | 1.3       |  |
| Renfrewshire   |                                      |           |           |  |
| Glasgow City   | 1.2                                  | 1.2       | 1.3       |  |
| Inverclyde     | 1.6                                  | 1.5       | 1.8       |  |
| Renfrewshire   | 1.7                                  | 1.5       | 1.9       |  |
| West           | 1.0                                  | 0.9       | 1.1       |  |
| Dunbartonshire |                                      |           |           |  |

|                        |     | Mean DMFT for children with DMFT>0 |                 |                 |  |
|------------------------|-----|------------------------------------|-----------------|-----------------|--|
| CHP name               | n   | Mean                               | Lower 95%<br>CL | Upper 95%<br>CL |  |
| East<br>Dunbartonshire | 81  | 2.2                                | 1.9             | 2.5             |  |
| East<br>Renfrewshire   | 65  | 1.8                                | 1.5             | 2.1             |  |
| Glasgow City           | 554 | 2.4                                | 2.3             | 2.6             |  |
| Inverclyde             | 130 | 2.4                                | 2.1             | 2.6             |  |
| Renfrewshire           | 106 | 2.3                                | 2.0             | 2.6             |  |
| West<br>Dunbartonshire | 124 | 2.4                                | 2.1             | 2.6             |  |

# Community Health Partnership results for NHS Lanarkshire

|                      |     |      | Mean age |         |         |  |
|----------------------|-----|------|----------|---------|---------|--|
| CHP name             | n   | Mean | Std dev  | Minimum | Maximum |  |
| North<br>Lanarkshire | 582 | 11.5 | 0.3      | 10.8    | 12.8    |  |
| South<br>Lanarkshire | 743 | 11.5 | 0.3      | 10.9    | 12.5    |  |

|                      | Weighted % no obvious decay experience |                 |                 |  |
|----------------------|--|-----------------|-----------------|--|
| CHP name             | %                                      | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 64.0                                   | 60.3            | 67.7            |  |
| South<br>Lanarkshire | 68.1                                   | 65.1            | 71.1            |  |

|                      | Weighted mean DMFT |                 |                 |  |
|----------------------|--------------------|-----------------|-----------------|--|
| CHP name             | Mean DMFT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.8                | 0.7             | 1.0             |  |
| South<br>Lanarkshire | 0.7                | 0.7             | 0.8             |  |

|                      | Weighted mean DT |                 |                 |  |
|----------------------|------------------|-----------------|-----------------|--|
| CHP name             | Mean DT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.3              | 0.2             | 0.4             |  |
| South<br>Lanarkshire | 0.3              | 0.2             | 0.3             |  |

|                      | Weighted mean MT |                 |                 |  |
|----------------------|------------------|-----------------|-----------------|--|
| CHP name             | Mean MT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.1              | 0.1             | 0.1             |  |
| South<br>Lanarkshire | 0.1              | 0.1             | 0.1             |  |

|                      | Weighted mean FT |                 |                 |  |
|----------------------|------------------|-----------------|-----------------|--|
| CHP name             | Mean FT          | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.4              | 0.4             | 0.5             |  |
| South<br>Lanarkshire | 0.3              | 0.3             | 0.4             |  |

|                      | Weighted mean DMFT for first permanent molar |                 |                 |  |
|----------------------|--|-----------------|-----------------|--|
| CHP name             | Mean<br>DMFTfpm                              | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.7  | 0.6             | 0.8             |  |
| South<br>Lanarkshire | 0.6  | 0.6             | 0.7             |  |

|                      | Weighted mean number of teeth decayed into the pulp |                 |                 |  |
|----------------------|---|-----------------|-----------------|--|
| CHP name             | Mean PT   | Lower 95%<br>CL | Upper 95%<br>CL |  |
| North<br>Lanarkshire | 0.0   | 0.0             | 0.1             |  |
| South<br>Lanarkshire | 0.0   | 0.0             | 0.1             |  |

|                      | Weighted m | Weighted mean number of sealed teeth |           |  |  |
|----------------------|------------|--------------------------------------|-----------|--|--|
| CHP name             | Mean ST    | Lower 95%                            | Upper 95% |  |  |
|                      |            | CL                                   | CL        |  |  |
| North                | 1.0        | 0.9                                  | 1.1       |  |  |
| Lanarkshire          |            |                                      |           |  |  |
| South<br>Lanarkshire | 1.0        | 0.9                                  | 1.1       |  |  |

|                      |     | Mean DMFT for children with DMFT>0 |                 |                 |
|----------------------|-----|------------------------------------|-----------------|-----------------|
| CHP name             | n   | Mean                               | Lower 95%<br>CL | Upper 95%<br>CL |
| North<br>Lanarkshire | 199 | 2.3                                | 2.1             | 2.5             |
| South<br>Lanarkshire | 246 | 2.3                                | 2.2             | 2.5             |

## A6 – 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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# A7 – Publication Metadata (including revisions details)

| Metadata Indicator                  | Description   |  |  |
|-------------------------------------|---|--|--|
| Publication title                   | National Dental Inspection Programme (NDIP) 2013.   |  |  |
| Description                         | This report presents the results of the programme of  |  |  |
|                                     | children's dental inspections carried out in Scotland during  |  |  |
|                                     | school year 2012/13.  |  |  |
| Theme                               | Dental care.  |  |  |
| Торіс                               | Children's dental health.   |  |  |
| Format                              | PDF.  |  |  |
| Data source(s)                      | 2013 National Dental Inspection Programme database.   |  |  |
| Date that data are acquired         | Various dates during school year 2012/13.   |  |  |
| Release date                        | 29" October 2013.   |  |  |
| Frequency                           | Annual.   |  |  |
| Timeframe of data and               | School year ending June 2013; four months in arrears.   |  |  |
| timeliness                          |   |  |  |
| Continuity of data                  | Reports annually.   |  |  |
| Revisions statement                 | I hese 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  |  |  |
| Devisions relevant to this          | reviewed and may be updated in future.  |  |  |
| Revisions relevant to this          | None.   |  |  |
| Concerts and definitions            | See Closery Appendix and References   |  |  |
| Polovance and key uses of           | The principal sime of the National Deptal Inspection  |  |  |
| the statistice                      | Programme (NDIP) are to gather information to inform  |  |  |
|                                     | parents/carers of the oral health status of their children and  |  |  |
|                                     | through appropriately approximised 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.   |  |  |
| Completeness                        | These data are regarded as suitably complete.   |  |  |
| 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 <u>published guidelines</u> .  |  |  |
| Coherence and clarity               | Tables and charts are accessible via the ISD website at:  |  |  |
|                                     | http://www.isdscotland.org/Health-Topics/Dental-  |  |  |
|                                     | Care/National-Dental-Inspection-Programme/.   |  |  |
| Value type and unit of              | Various dental/epidemiological and demographic units of   |  |  |
| measurement                         | measurement.  |  |  |
| Disclosure                          | The ISD protocol on Statistical Disclosure Protocol is  |  |  |
|                                     | followed.   |  |  |
| Official Statistics designation     | Official Statistics.  |  |  |
| UK Statistics Authority             | Not assessed at this time.  |  |  |
| Assessment                          | the second se |  |  |
| Last published                      | 27" November 2012.  |  |  |
| Next published                      | 28" October 2014.   |  |  |

| Date of first publication | 31 <sup>st</sup> December 2003 (reviewed 3 <sup>rd</sup> March 2008). |
|---------------------------|---|
| Help email                | nss.isd-dental-info@nhs.net   |
| Date form completed       | 15/10/2013  |

## A8 – 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.

#### **Standard Pre-Release Access:**

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

#### **Extended Pre-Release Access**

Extended Pre-Release Access of 8 working days is given to a small number of named individuals in the Scottish Government Health Department (Analytical Services Division). This Pre-Release Access is for the sole purpose of enabling that department to gain an understanding of the statistics prior to briefing others in Scottish Government (during the period of standard Pre-Release Access).

Scottish Government Health Department (Analytical Services Division)

# A9 – 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.

#### **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.

ISD's statistical publications are currently classified as one of the following:

- 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 <u>ISD website</u>.

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics. Designation can be broadly interpreted to mean that the statistics:

- 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.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.