



NATIONAL DENTAL  
INSPECTION PROGRAMME  
OF SCOTLAND

INFORMATION SERVICES  
DIVISION, NHS NATIONAL  
SERVICES SCOTLAND



# NATIONAL DENTAL INSPECTION PROGRAMME

# 2012

## REPORT OF THE 2012 DETAILED NATIONAL DENTAL INSPECTION PROGRAMME OF PRIMARY 1 CHILDREN AND THE BASIC INSPECTION OF PRIMARY 1 AND PRIMARY 7 CHILDREN

PUBLISHED ON BEHALF OF  
THE SCOTTISH DENTAL EPIDEMIOLOGY COORDINATING COMMITTEE  
BY ISD SCOTLAND

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R1 – revised from “permanent”.

# The 2012 National Dental Inspection Programme (NDIP) undertaken in the school year 2011/12

## *Introduction*

It is important that a child's dental wellbeing is assessed so that children and their parents/carers can maintain oral health and take necessary steps to remedy any problems that may have arisen. There is also a need to monitor children's dental health at national and regional levels so that reliable oral health information is available for planning and evaluating initiatives directed towards health improvements.

The National Dental Inspection Programme (NDIP) aims to fulfil these functions by providing an essential source of information for keeping track of any changes in the dental health of children in Scotland.

Two key child 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*. Limited information relating to the *Basic Inspection* can be found in Appendix 4 of this Report.

In the school year 2011/12, the *Detailed Inspection* programme involved P1 school children. An Executive Summary of the main findings can be found at <http://www.isdscotland.org/Health-Topics/Dental-Care/National-Dental-Inspection-Programme/>.

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

The *Detailed Inspection* involves a comprehensive assessment of the mouth of each child using a light, mirror and ball-ended probe. It involves recording the status of each surface of each tooth in accordance with international 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<sub>3</sub> level and includes *pulpal decay* (i.e. decay into the deeper pulp). The definition of decay used 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 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. 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<sub>3</sub>mft) 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 impact of deprivation on the dental health of children in Scotland.

The results are weighted for each NHS Board by the 2009 Scottish Index of Multiple Deprivation (SIMD<sup>1</sup>) quintile.

### *How many P1 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 comparisons between NHS Boards. Whole classes are selected to simplify the process for schools while ensuring that results reflect the P1 population in Scotland.

Table 1 shows that between November 2011 and June 2012, 13,232 children from Local Authority Schools across Scotland were inspected in detail. This represents 24.1% of the P1 population in Local Authority schools. Across all NHS Boards, the percentage of P1 children inspected ranged from 9.1% to 98.2%.

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

The average age of the children examined was 5.5 years for both girls and boys. The range of ages across Scotland was 4.0 – 7.0 years.

**Table 1: Primary 1 population and the number who received a Detailed Inspection by NHS Board across Scotland**

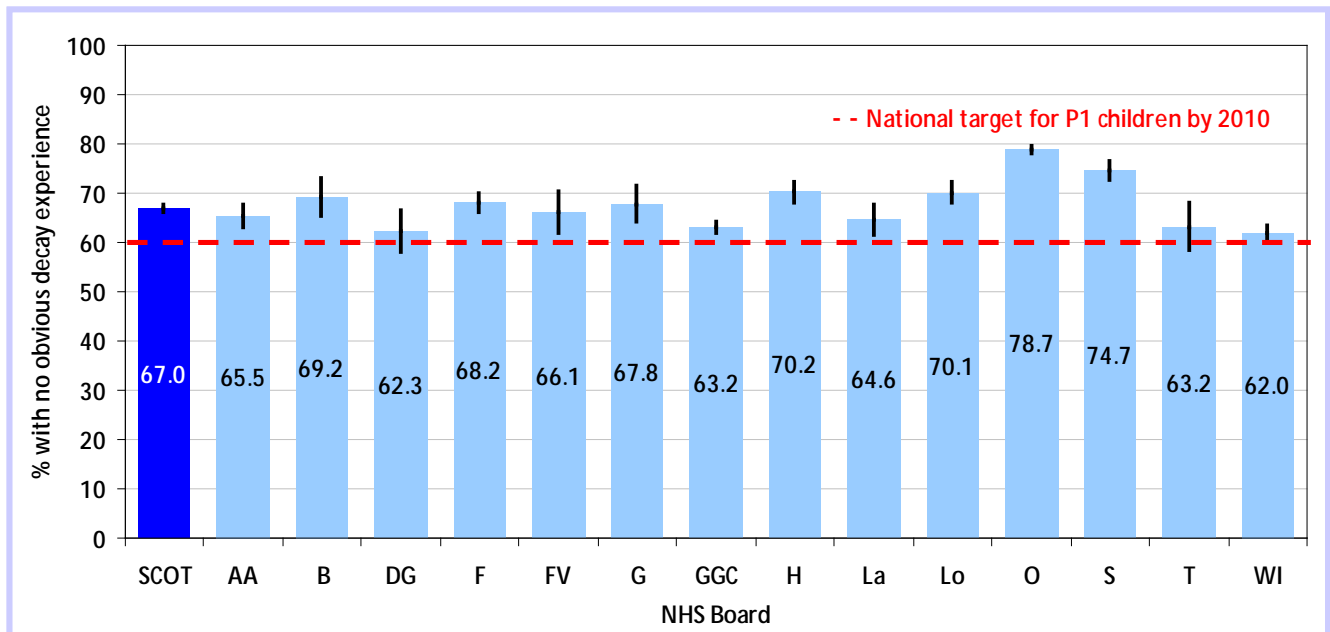
NHS Board	Primary 1 populations	Number of P1 children receiving a <i>Detailed Inspection</i>	% of P1 population receiving a <i>Detailed Inspection</i>
Ayrshire & Arran	3,840	1,197	31.2%
Borders	1,215	417	34.3%
Dumfries & Galloway	1,420	343	24.2%
Fife	3,909	1,117	28.6%
Forth Valley	3,216	385	12.0%
Grampian	5,531	557	10.1%
Greater Glasgow & Clyde	12,689	4,801	37.8%
Highland	3,178	1,119	35.2%
Lanarkshire	6,470	813	12.6%
Lothian	8,537	1,375	16.1%
Orkney	224	220	98.2%
Shetland	263	247	93.9%
Tayside	4,102	373	9.1%
Western Isles	286	268	93.7%
<b>Total for Scotland</b>	<b>54,880</b>	<b>13,232</b>	<b>24.1%</b>

## DETAILED INSPECTION RESULTS

### What proportion of P1 children in Scotland had no obvious decay experience in 2012?

Figure 1 shows the proportion of P1 children in NHS Boards who showed no signs of obvious decay experience in their primary teeth. Across Scotland, 67.0% of P1 children fall into this category, with a range of 62.0% to 78.7% across the fourteen NHS Boards. For the first time, all NHS Boards achieved the national target set for 2010 of 60% with no obvious decay experience.

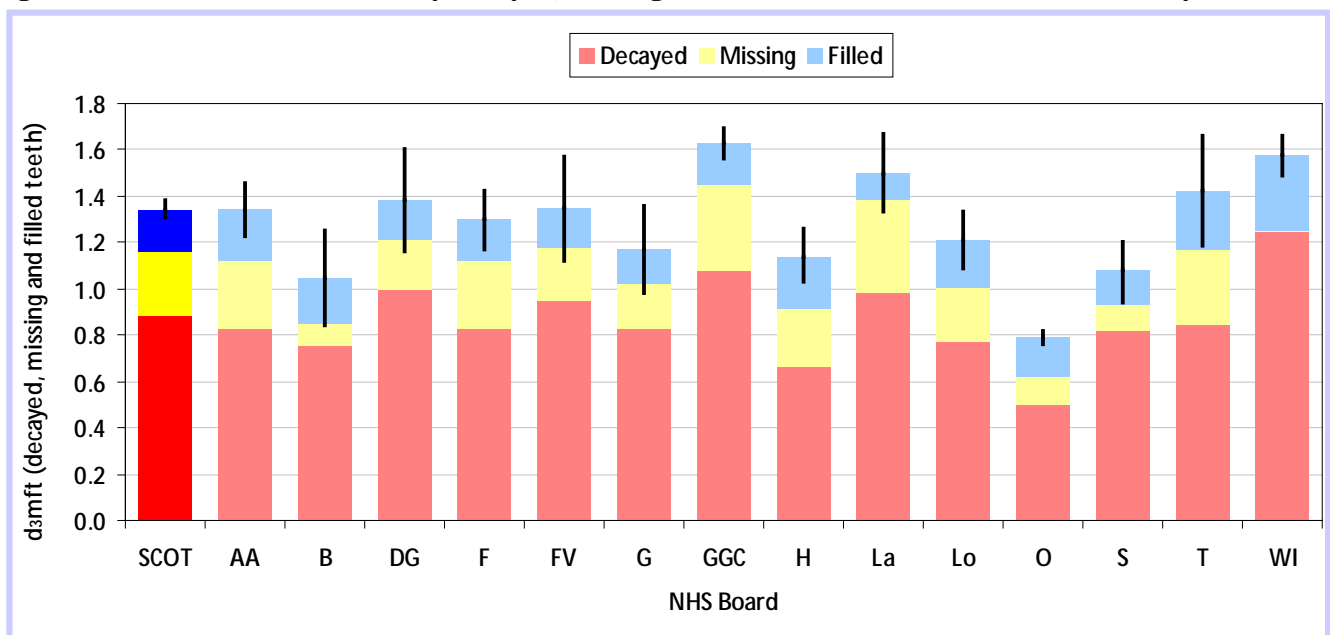
**Figure 1: proportion of P1 children with no obvious decay experience**



### What levels of obvious decay experience were seen in P1 children in 2012?

As shown in Figure 2, the average number of obviously decayed, missing and filled teeth across all P1 children examined in Scotland was 1.35. This ranged from 0.79 to 1.63 across the 14 NHS Boards in Scotland.

**Figure 2: mean number of obviously decayed, missing and filled teeth (d<sub>3</sub>mft) in Scotland and by NHS Board**



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

The changes over time in the mean number of decayed, missing and filled primary teeth are shown in Figure 3 and illustrate a steady decline over the last nine years in terms of mean d<sub>3</sub>mft for the P1 population.

**Figure 3: trends over time in the mean number of obviously decayed, missing and filled teeth (d<sub>3</sub>mft) in P1 children in Scotland**

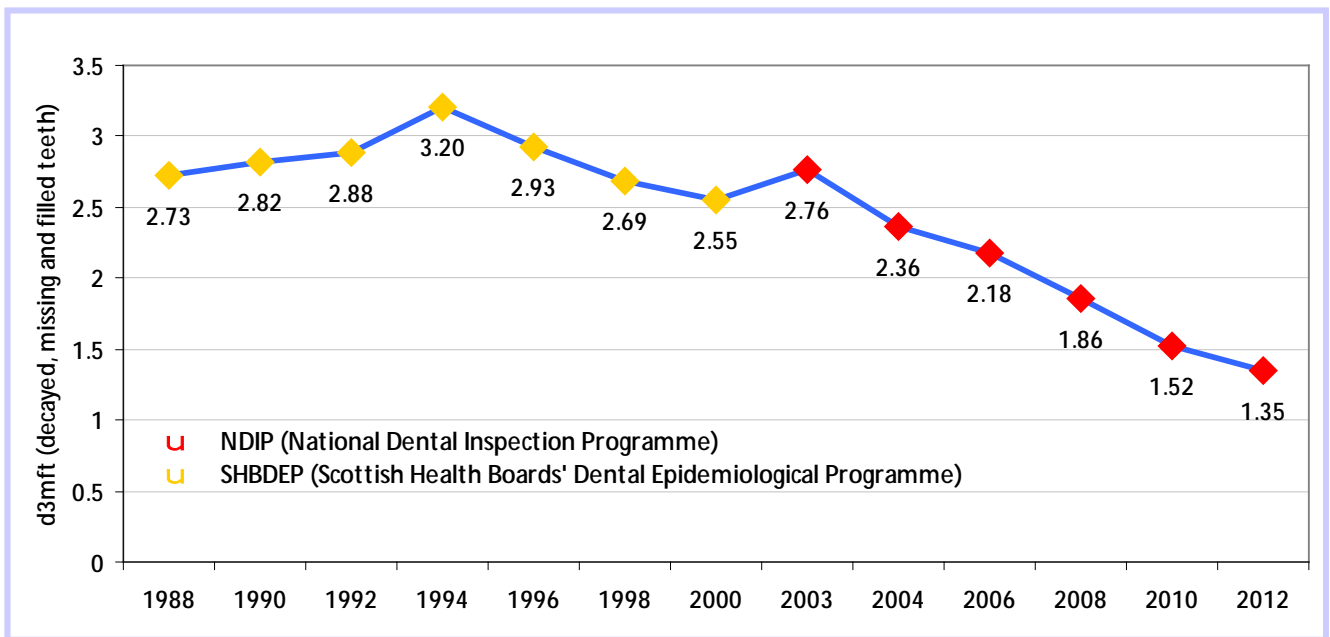
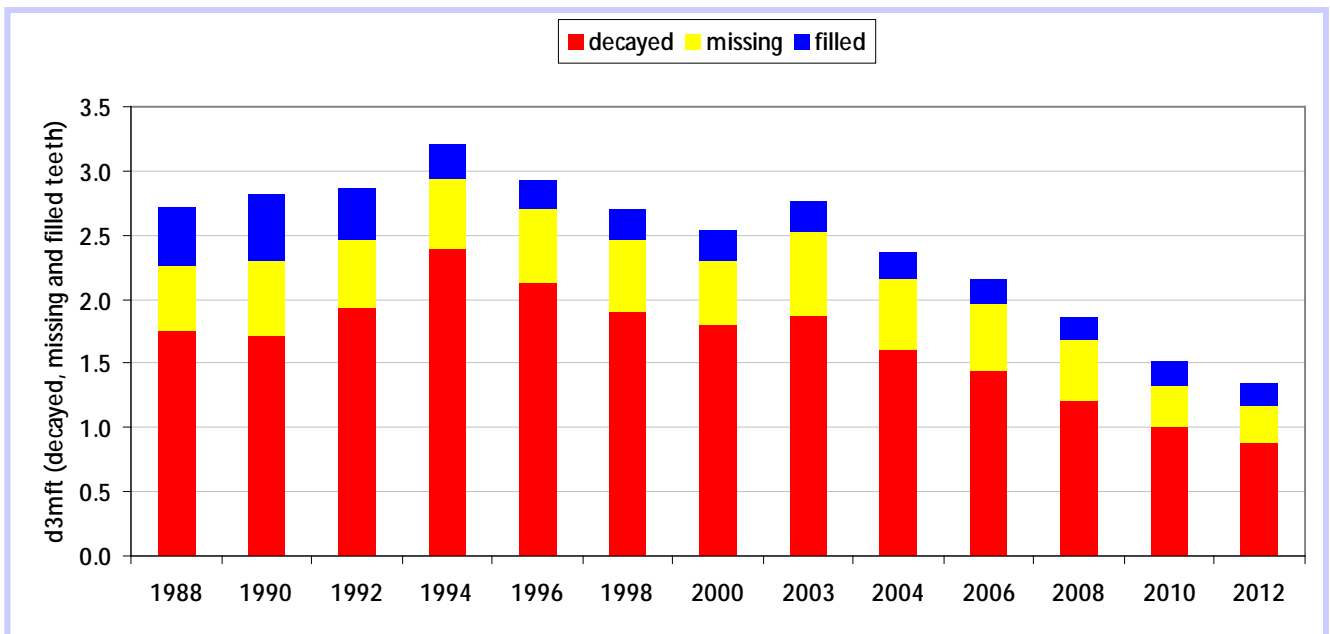


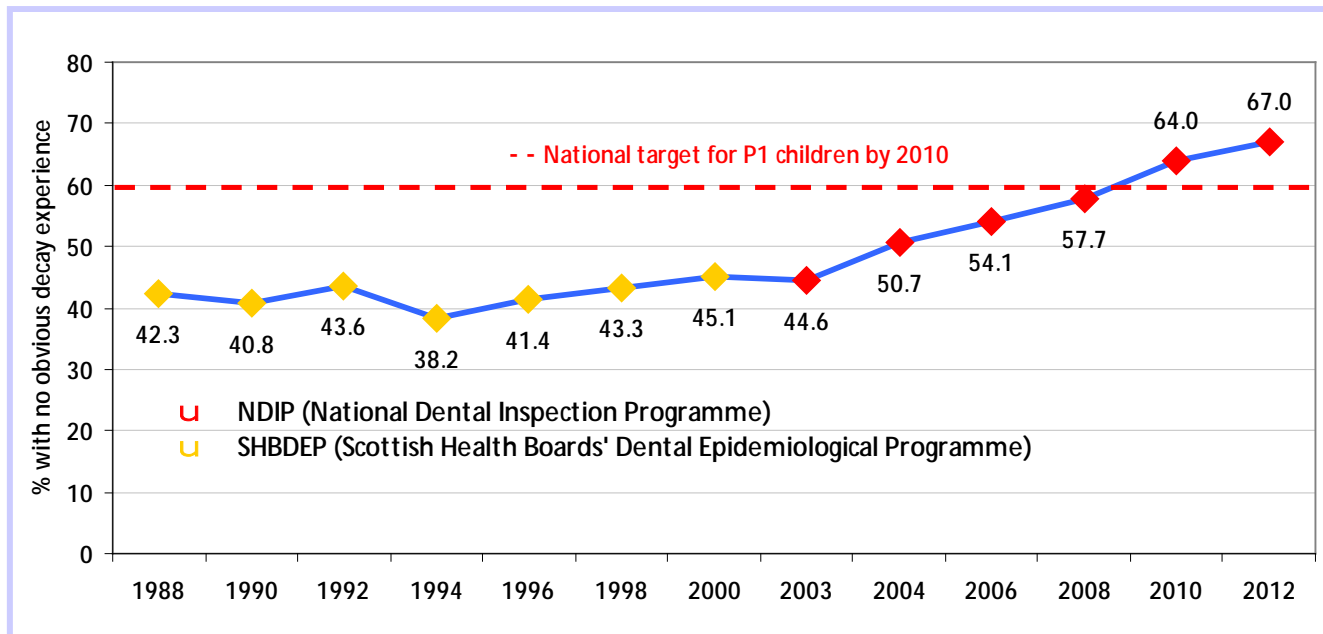
Figure 4 illustrates this further showing changes in mean d<sub>3</sub>mft for P1 children in Scotland over the period 1988 to 2012, by decayed, missing and filled components.

**Figure 4: mean d<sub>3</sub>mft in P1 children in Scotland by decayed, missing and filled components; 1988 to 2012**



The data in Figure 5 below indicate a continuing increase over time in the percentage of P1 children in Scotland with no obvious decay experience (i.e. a decline in the prevalence of decay).

**Figure 5: trends over time in the proportion of P1 children in Scotland with no obvious decay experience**



**What are the obvious decay experience results for primary 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 2012 survey, 33.0% of P1 children in Scotland had obvious decay experience in their primary teeth. For those children, the mean number of affected teeth was 4.10. This ranged across the Boards from 3.28 in Borders to 4.38 in Greater Glasgow & Clyde. The number of teeth affected at the individual child level ranged from one to 20 teeth.

**Table 2: Obvious decay experience in primary teeth for each NHS Board in Scotland in 2011/12**

NHS Board	% with no obvious decay experience in primary teeth	Mean no. of decayed, missing and filled primary teeth (d <sub>3</sub> mft)	Mean no. of decayed primary teeth (d <sub>3</sub> t)	Mean no. of missing primary teeth (mt)	Mean no. of filled primary teeth (ft)	For those with decay, the mean no. of decayed, missing and filled primary teeth (d <sub>3</sub> mft>0)
Ayrshire & Arran	65.5	1.34	0.83	0.29	0.22	3.89
Borders	69.2	1.05	0.75	0.10	0.20	3.28
Dumfries & Galloway	62.3	1.38	1.00	0.21	0.17	3.65
Fife	68.2	1.29	0.83	0.28	0.18	4.03
Forth Valley	66.1	1.35	0.95	0.23	0.17	3.96
Grampian	67.8	1.17	0.83	0.19	0.15	3.68
Greater Glasgow & Clyde	63.2	1.63	1.08	0.37	0.18	4.38
Highland	70.2	1.15	0.66	0.26	0.22	3.83
Lanarkshire	64.6	1.51	0.98	0.41	0.12	4.21
Lothian	70.1	1.21	0.77	0.24	0.20	4.03
Orkney	78.7	0.79	0.50	0.12	0.17	3.70
Shetland	74.7	1.07	0.82	0.11	0.15	4.18
Tayside	63.2	1.42	0.84	0.33	0.25	3.89
Western Isles	62.0	1.57	1.24	0.01	0.33	4.13
Scotland	67.0	1.35	0.88	0.28	0.18	4.10



Table 3 also summarises the results at Scotland level and the ranges across NHS Boards. Overall, 26.5% of P1 children inspected had current obvious decay, i.e.  $d_3t > 0$ .

**Table 3: Overall obvious decay experience in primary<sup>R2</sup> teeth of P1 children in Scotland**

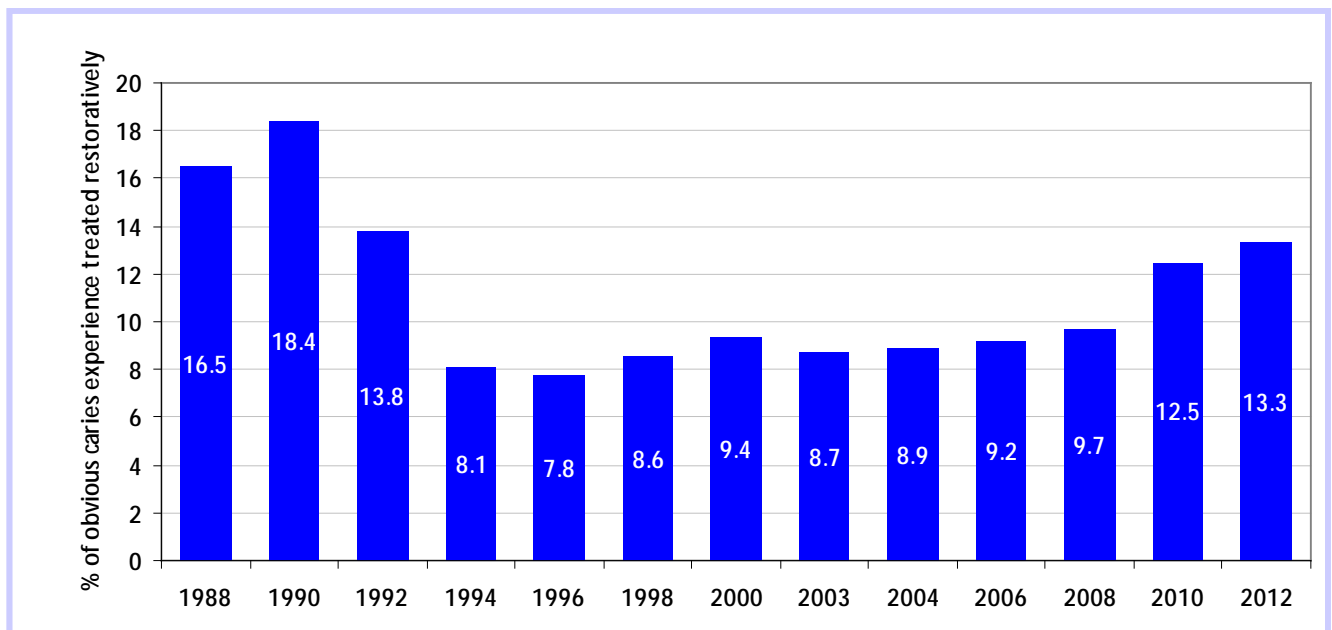
	%	NHS Boards
Free of obvious decay experience at the dentinal level ( $d_3mft = 0$ )	67.0	62.0 – 78.7
With obvious decay experience, $d_3mft > 0$ (as per BASCD)	33.0	21.3 – 38.0
With 'current decay', $d_3 > 0$ (as per BASCD)	26.5	14.1 – 32.6
Care index ( $ft/d_3mft$ )	13.3	8.0 – 21.5
	<b>Mean</b>	<b>NHS Boards</b>
Obvious decay experience ( $d_3mft$ ) across Scotland	1.35	0.79 – 1.63
Decayed teeth ( $d_3t$ ) across Scotland	0.88	0.50 – 1.24
Missing teeth ( $mt$ ) across Scotland	0.28	0.01 – 0.40
Filled teeth ( $ft$ ) across Scotland	0.18	0.12 – 0.33
Decayed, missing and filled teeth for those with obvious decay experience ( $d_3mft > 0$ )	4.10	3.28 – 4.38

*What proportion of obvious decay experience among P1 children was treated with fillings?*

The Care Index is used to describe the proportion of obvious decay experience in a population that has been treated restoratively and is expressed as the number of filled teeth divided by the number of obviously decayed, missing and filled teeth, multiplied by 100 [ $(ft/d_3mft) \times 100$ ].

Figure 6 shows the Care Index values obtained for the last 13 surveys. Only a very limited improvement in the Care Index has occurred over many years with, on average, 13.3% of teeth with obvious caries experience having treated<sup>R3</sup> decay in the 2012 survey.

**Figure 6: Care Index ( $ft/d_3mft$ ) for P1 children in Scotland, 1988-2012**



R2 – Revised from “permanent”. R3 – revised from “untreated”.

### *Was the prevalence of obvious decay experience distributed evenly throughout the population of P1 children in Scotland?*

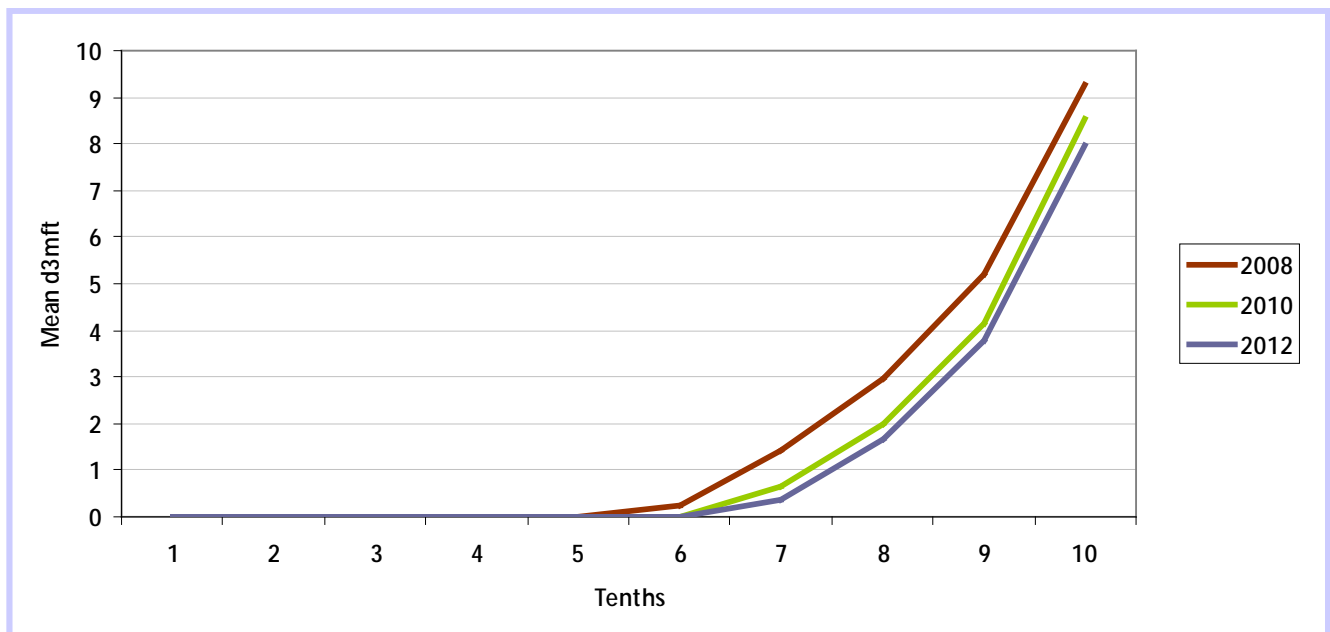
The Significant Caries Index (SiC Index)<sup>2</sup> was calculated for each of the three most recent time points by taking the mean  $d_3mft$  of the one third of the individuals in each sample with the highest  $d_3mft$  score. The values obtained were 5.43 (2008), 4.50 (2010) and 4.13 (2012).

Figure 7 shows the mean  $d_3mft$  of each tenth of the sample, with children ranked by 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 9.27 (2008), 8.52 (2010) and 7.97 (2012).

The SiC and SiC10 indices are not based on socioeconomic classification, but provide information on inequality in distribution of  $d_3mft$ . Examination of the whole mean  $d_3mft$  distribution by tenths of the sample permits estimation of inequality in the dispersion of decayed, missing and filled teeth counts across individuals in the population. This can complement inequality measures based on SIMD and may be important when factors other than socio-economic status are relevant, e.g. geography and ethnicity.

These findings show the uneven distribution of caries, with a relatively small proportion of the population having a high burden of disease. However, they do also show a reduction over time in the average number of teeth with decay experience in children with the highest levels of disease.

**Figure 7: Mean  $d_3mft$  in each tenth of the distribution of  $d_3mft$ ; 2008 – 2012**



### *Is there a link between area-based socioeconomic deprivation and poor dental health among P1 children in Scotland?*

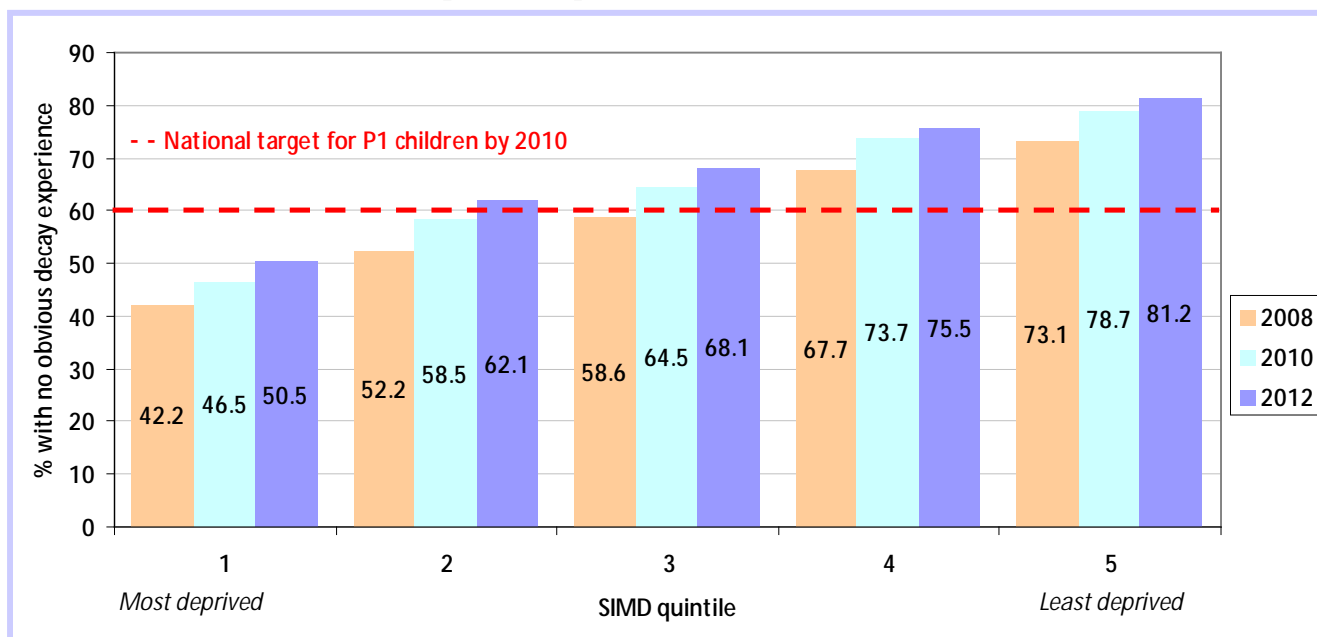
All NDIP surveys on deprivation now report using the Scottish Index of Multiple Deprivation (SIMD). The SIMD classification identifies small area concentrations of multiple deprivation and is presented at data zone level based on postcode unit information. It has seven domains (income, employment, education, 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.

One of the SIMD classifications is based on quintiles of deprivation where quintile 1 is the most deprived and quintile 5 is the least deprived.

Figure 8 below graphically illustrates the difference in dental health between P1 children in the different SIMD quintiles. Each fifth of the population showed an improvement in dental health since the last survey.

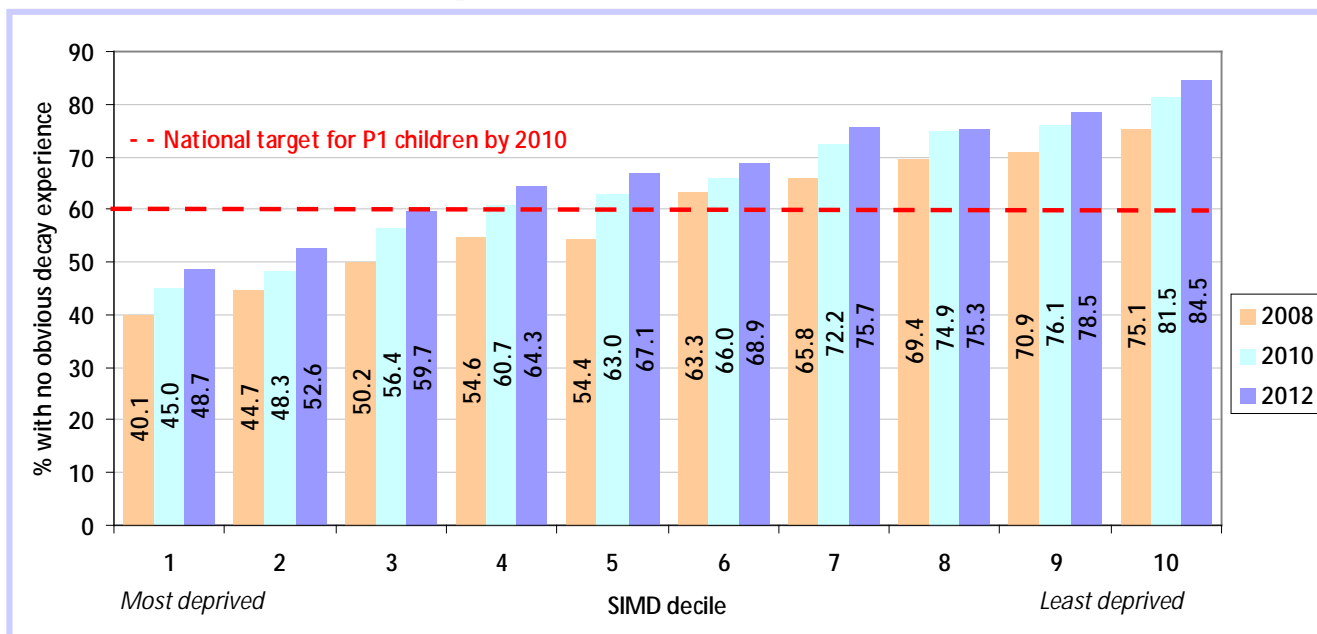
Those in quintiles 2, 3, 4 and 5 have reached the 2010 National Target of 60% with no obvious decay experience, while those in quintile 1 – the most deprived area – fell short, with only 50.5% of P1 children having no obvious decay experience. As a measure of health inequality, the difference in values between those in quintiles 1 and 5 was 30.9 percentage points in 2008 and 30.7 percentage points in 2012.

**Figure 8: Proportion of P1 children with no obvious decay experience by Scottish Index of Multiple Deprivation quintile; 2008, 2010 and 2012**



The SIMD decile classification has 10 divisions of deprivation from 1 (most deprived) to 10 (least deprived) and the results for 2008, 2010 and 2012 are shown in Figure 9.

**Figure 9: Proportion of P1 children with no obvious decay experience by Scottish Index of Multiple Deprivation decile; 2008, 2010 and 2012**



Between 2010 and 2012 each socioeconomic decile of the P1 population showed an improvement in the percentage of children with no obvious caries experience. The three most deprived deciles have not yet reached the 2010 target of 60% with no obvious decay experience. The difference in values between the two ends of the decile range was 35.0, 36.5 and 35.8 percentage points in 2008, 2010 and 2012, respectively.

## *Conclusions*

- The oral health of P1 children in Scotland continues to show improvement in terms of both an increase in the proportion with no obvious decay experience and a decrease in mean  $d_3mft$ .
- All SIMD quintiles and SIMD deciles saw an improvement in oral health compared to the results of 2010 and the extent of disease continues to fall in those most affected by decay. However, clear health inequalities remain.

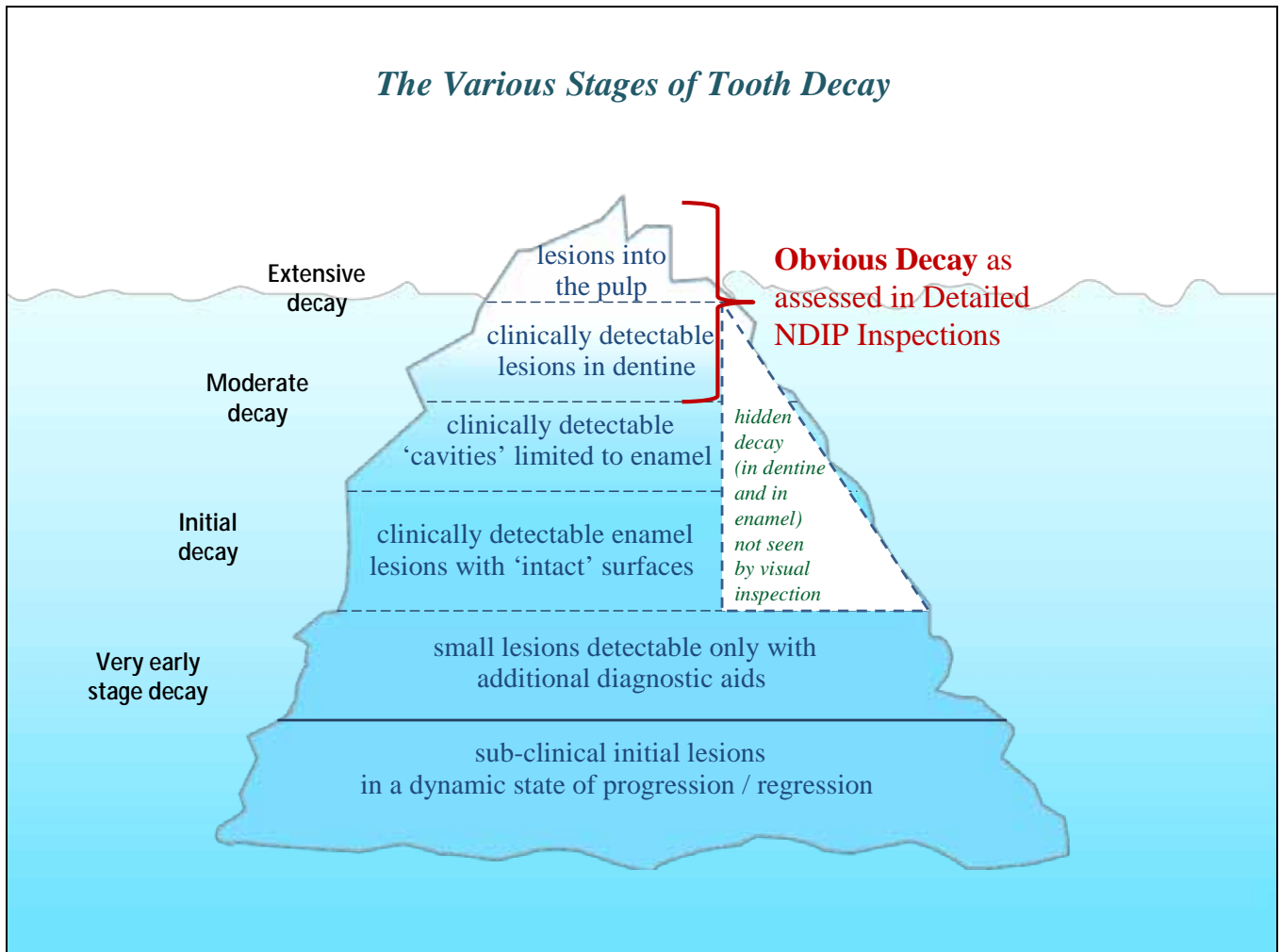
As the Childsmile<sup>3</sup> programme continues to be refined and implemented at NHS Board level, a major aim will be to reduce the gap between the most and least deprived.

## APPENDIX 1

### *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 subclinical 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**



## APPENDIX 2

### *National training and calibration course*

The training and calibration course for the detailed NDIP survey of P1 children in Scotland was held in NHS Lothian in November 2011. The training course was organised by NHS Lothian and NHS Health Scotland.

Mandatory training and calibration was run over two separate courses to accommodate the 47 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>4</sup>. Clinical training sessions were then undertaken on school children, and were followed by the calibration sessions on a further group of P1 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 d<sub>3</sub>mft and separately for d<sub>3</sub>t, mt, and ft components.

Cohen Kappa estimates agreement, which is considered<sup>5</sup>:

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

All 47 inspection teams calibrated with percentage agreement ranging from 94% to 99% and the Kappa estimates for d<sub>3</sub>mft scores at the patient level did not drop below moderate agreement. For 8 inspection teams, where the Kappa was lower than substantial, but not lower than moderate level agreement (due to disagreement on not more than 3 patients), examiner groups received local detailed feedback to ensure awareness of variation.

Future plans include investigation of the relationship between calibration data at patient and tooth level, and assessment of agreement based on caries prevalence.

### **APPENDIX 3**

This appendix shows 2012 Detailed NDIP results at sub-NHS Board level for the following variables:

- Mean Age
- Weighted % With No Obvious Decay Experience
- Weighted Mean dmft
- 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.

## CHP Results for Ayrshire & Arran

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
East Ayrshire	445	5.5	0.3	4.9	6.8
North Ayrshire	453	5.5	0.3	4.9	6.5
South Ayrshire	299	5.5	0.3	4.9	6.8

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
East Ayrshire	69.2%	65.4%	73.0%
North Ayrshire	62.8%	59.2%	66.5%
South Ayrshire	64.1%	59.5%	68.8%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
East Ayrshire	1.1	0.9	1.3
North Ayrshire	1.4	1.2	1.6
South Ayrshire	1.6	1.3	1.8

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
East Ayrshire	0.6	0.5	0.7
North Ayrshire	0.9	0.7	1.0
South Ayrshire	1.0	0.8	1.2

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Ayrshire	0.3	0.2	0.4
North Ayrshire	0.3	0.2	0.4
South Ayrshire	0.3	0.2	0.4



### CHP Results for Ayrshire & Arran cont'd

CHP Name	Weighted Mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
East Ayrshire	0.2	0.1	0.2
North Ayrshire	0.2	0.2	0.3
South Ayrshire	0.2	0.2	0.3

CHP Name	Weighted Mean Number of Teeth Decayed into the Pulp		
	Mean pt	Lower 95% CL	Upper 95% CL
East Ayrshire	0.1	0.0	0.1
North Ayrshire	0.1	0.1	0.2
South Ayrshire	0.2	0.1	0.3

CHP Name	Weighted Mean Number of Sealed Teeth		
	Mean st	Lower 95% CL	Upper 95% CL
East Ayrshire	0.0	0.0	0.0
North Ayrshire	0.0	0.0	0.1
South Ayrshire	0.0	0.0	0.0

CHP Name	Mean dmft for Children With dmft>0			
	n	Mean	Lower 95% CL	Upper 95% CL
East Ayrshire	135	3.5	3.1	3.9
North Ayrshire	170	3.8	3.4	4.2
South Ayrshire	113	4.6	3.9	5.2

### CHP Results for Fife

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
Dunfermline & West Fife	502	5.4	0.3	4.3	6.5
Glenrothes & North East Fife	320	5.5	0.3	4.8	6.8
Kirkcaldy & Levenmouth	295	5.4	0.3	4.8	6.5

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	67.6%	64.0%	71.3%
Glenrothes & North East Fife	73.4%	69.1%	77.6%
Kirkcaldy & Levenmouth	62.2%	56.9%	67.5%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	1.4	1.1	1.6
Glenrothes & North East Fife	1.0	0.8	1.2
Kirkcaldy & Levenmouth	1.6	1.3	1.9

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	0.9	0.8	1.1
Glenrothes & North East Fife	0.5	0.4	0.7
Kirkcaldy & Levenmouth	1.0	0.8	1.3

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	0.2	0.1	0.3
Glenrothes & North East Fife	0.2	0.1	0.4
Kirkcaldy & Levenmouth	0.4	0.2	0.5

### CHP Results for Fife cont'd

CHP Name	Weighted Mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	0.2	0.1	0.2
Glenrothes & North East Fife	0.2	0.1	0.2
Kirkcaldy & Levenmouth	0.2	0.1	0.3

CHP Name	Weighted Mean Number of Teeth Decayed into the Pulp		
	Mean pt	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	0.2	0.1	0.3
Glenrothes & North East Fife	0.0	0.0	0.1
Kirkcaldy & Levenmouth	0.2	0.1	0.2

CHP Name	Weighted Mean Number of Sealed Teeth		
	Mean st	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	0.0	0.0	0.0
Glenrothes & North East Fife	0.0	0.0	0.0
Kirkcaldy & Levenmouth	0.0	0.0	0.0

CHP Name	Mean dmft for Children With dmft>0			
	n	Mean	Lower 95% CL	Upper 95% CL
Dunfermline & West Fife	152	4.1	3.6	4.6
Glenrothes & North East Fife	83	3.6	3.0	4.2
Kirkcaldy & Levenmouth	116	4.3	3.8	4.8

## CHP Results for Greater Glasgow

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
East Dunbartonshire	347	5.6	0.3	4.9	6.5
East Renfrewshire	359	5.5	0.3	4.9	6.7
Glasgow City	2170	5.5	0.3	4.6	6.8
Inverclyde	354	5.5	0.3	4.9	7.0
Renfrewshire	576	5.5	0.3	4.6	6.7
West Dunbartonshire	429	5.6	0.3	4.7	6.3

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
East Dunbartonshire	78.9%	74.6%	83.3%
East Renfrewshire	80.0%	76.7%	83.4%
Glasgow City	56.5%	54.8%	58.2%
Inverclyde	59.7%	55.3%	64.2%
Renfrewshire	62.1%	58.6%	65.5%
West Dunbartonshire	58.6%	55.2%	62.1%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.7	0.5	0.8
East Renfrewshire	0.7	0.5	0.8
Glasgow City	2.1	2.0	2.2
Inverclyde	1.7	1.4	1.9
Renfrewshire	1.6	1.4	1.9
West Dunbartonshire	1.8	1.6	2.0

**CHP Results for Greater Glasgow cont'd**

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.4	0.3	0.5
East Renfrewshire	0.5	0.4	0.6
Glasgow City	1.4	1.3	1.5
Inverclyde	1.0	0.8	1.2
Renfrewshire	1.2	1.0	1.3
West Dunbartonshire	1.3	1.1	1.4

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.1	0.0	0.2
East Renfrewshire	0.1	0.0	0.2
Glasgow City	0.5	0.4	0.6
Inverclyde	0.4	0.2	0.6
Renfrewshire	0.4	0.2	0.5
West Dunbartonshire	0.4	0.2	0.5

CHP Name	Weighted Mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.1	0.1	0.2
East Renfrewshire	0.1	0.0	0.1
Glasgow City	0.2	0.2	0.2
Inverclyde	0.3	0.2	0.3
Renfrewshire	0.1	0.1	0.2
West Dunbartonshire	0.1	0.1	0.2

CHP Name	Weighted Mean Number of Teeth Decayed into the Pulp		
	Mean pt	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.1	0.0	0.2
East Renfrewshire	0.0	0.0	0.1
Glasgow City	0.2	0.2	0.3
Inverclyde	0.1	0.1	0.1
Renfrewshire	0.3	0.2	0.4
West Dunbartonshire	0.2	0.2	0.3

**CHP Results for Greater Glasgow cont'd**

CHP Name	Weighted Mean Number of Sealed Teeth		
	Mean st	Lower 95% CL	Upper 95% CL
East Dunbartonshire	0.0	0.0	0.1
East Renfrewshire	0.0	0.0	0.0
Glasgow City	0.1	0.0	0.1
Inverclyde	0.0	0.0	0.1
Renfrewshire	0.0	0.0	0.1
West Dunbartonshire	0.0	0.0	0.0

CHP Name	Mean dmft for Children With dmft>0			
	n	Mean	Lower 95% CL	Upper 95% CL
East Dunbartonshire	68	3.1	2.5	3.7
East Renfrewshire	72	3.5	2.9	4.1
Glasgow City	928	4.8	4.6	5.0
Inverclyde	118	3.9	3.4	4.4
Renfrewshire	208	4.2	3.8	4.6
West Dunbartonshire	176	4.3	3.8	4.8

## CHP Results for Highland

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
Argyll & Bute	265	5.4	0.3	4.4	6.2
Mid Highland	278	5.7	0.4	5.0	6.9
North Highland	308	5.7	0.3	5.0	6.8
South East Highland	268	5.6	0.3	4.9	6.7

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
Argyll & Bute	74.1%	69.7%	78.5%
Mid Highland	69.3%	64.6%	74.0%
North Highland	66.5%	63.9%	69.1%
South East Highland	71.2%	66.1%	76.3%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
Argyll & Bute	1.0	0.7	1.2
Mid Highland	1.3	1.0	1.6
North Highland	1.2	1.1	1.3
South East Highland	1.1	0.9	1.4

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.7	0.5	0.9
Mid Highland	0.8	0.6	1.0
North Highland	0.7	0.6	0.8
South East Highland	0.5	0.3	0.6

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.1	0.0	0.3
Mid Highland	0.3	0.1	0.4
North Highland	0.2	0.1	0.2
South East Highland	0.5	0.3	0.6

### CHP Results for Highland cont'd

CHP Name	Weighted Mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.1	0.0	0.2
Mid Highland	0.2	0.2	0.3
North Highland	0.3	0.3	0.4
South East Highland	0.2	0.1	0.3

CHP Name	Weighted Mean Number of Teeth Decayed into the Pulp		
	Mean pt	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.2	0.1	0.2
Mid Highland	0.1	0.1	0.2
North Highland	0.2	0.2	0.2
South East Highland	0.1	0.0	0.1

CHP Name	Weighted Mean Number of Sealed Teeth		
	Mean st	Lower 95% CL	Upper 95% CL
Argyll & Bute	0.0	0.0	0.0
Mid Highland	0.0	0.0	0.0
North Highland	0.0	0.0	0.0
South East Highland	0.0	0.0	0.0

CHP Name	Mean dmft for Children With dmft>0			
	n	Mean	Lower 95% CL	Upper 95% CL
Argyll & Bute	71	3.6	2.9	4.3
Mid Highland	82	4.0	3.4	4.7
North Highland	104	3.6	3.1	4.1
South East Highland	75	4.2	3.4	4.9



### CHP Results for Lanarkshire

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
North Lanarkshire	669	5.4	0.3	4.7	6.7
South Lanarkshire	710	5.5	0.3	4.3	6.2

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
North Lanarkshire	61.5%	58.0%	65.1%
South Lanarkshire	69.8%	66.8%	72.8%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
North Lanarkshire	1.8	1.6	2.0
South Lanarkshire	1.1	1.0	1.3

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
North Lanarkshire	1.1	1.0	1.3
South Lanarkshire	0.7	0.6	0.8

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.5	0.4	0.6
South Lanarkshire	0.3	0.2	0.4

CHP Name	Weighted Mean ft		
	Mean ft	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.1	0.1	0.2
South Lanarkshire	0.1	0.1	0.1

### CHP Results for Lanarkshire cont'd

Weighted Mean Number of Teeth Decayed into the Pulp			
CHP Name	Mean pt	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.3	0.2	0.4
South Lanarkshire	0.1	0.1	0.1

Weighted Mean Number of Sealed Teeth			
CHP Name	Mean st	Lower 95% CL	Upper 95% CL
North Lanarkshire	0.0	0.0	0.0
South Lanarkshire	0.0	0.0	0.0

Mean dmft for Children With dmft>0				
CHP Name	n	Mean	Lower 95% CL	Upper 95% CL
North Lanarkshire	240	4.4	4.0	4.8
South Lanarkshire	215	3.7	3.4	4.1

### CHP Results for Lothian

CHP Name	n	Mean Age			
		Mean	Std Dev	Minimum	Maximum
East Lothian	208	5.5	0.3	4.8	6.3
Edinburgh	647	5.6	0.3	4.8	6.7
Midlothian	192	5.6	0.3	4.3	6.3
West Lothian	328	5.6	0.3	4.9	6.1

CHP Name	Weighted % No Obvious Decay Experience		
	%	Lower 95% CL	Upper 95% CL
East Lothian	73.2%	67.6%	78.8%
Edinburgh	73.6%	70.6%	76.6%
Midlothian	65.0%	59.1%	70.9%
West Lothian	65.7%	60.8%	70.5%

CHP Name	Weighted Mean dmft		
	Mean dmft	Lower 95% CL	Upper 95% CL
East Lothian	0.9	0.7	1.1
Edinburgh	1.1	0.9	1.3
Midlothian	1.2	1.0	1.5
West Lothian	1.5	1.2	1.8

CHP Name	Weighted Mean dt		
	Mean dt	Lower 95% CL	Upper 95% CL
East Lothian	0.6	0.4	0.8
Edinburgh	0.7	0.6	0.8
Midlothian	0.8	0.6	1.1
West Lothian	1.0	0.8	1.2

### CHP Results for Lothian cont'd

CHP Name	Weighted Mean mt		
	Mean mt	Lower 95% CL	Upper 95% CL
East Lothian	0.1	0.0	0.2
Edinburgh	0.2	0.1	0.3
Midlothian	0.2	0.0	0.3
West Lothian	0.3	0.1	0.5

CHP 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	0.3	0.2	0.4
West Lothian	0.2	0.1	0.3

CHP Name	Weighted Mean Number of Teeth Decayed into the Pulp		
	Mean pt	Lower 95% CL	Upper 95% CL
East Lothian	0.2	0.1	0.2
Edinburgh	0.1	0.1	0.2
Midlothian	0.3	0.1	0.4
West Lothian	0.2	0.1	0.3

CHP Name	Weighted Mean Number of Sealed Teeth		
	Mean st	Lower 95% CL	Upper 95% CL
East Lothian	0.0	0.0	0.0
Edinburgh	0.0	0.0	0.0
Midlothian	0.0	0.0	0.0
West Lothian	0.0	0.0	0.0

### CHP Results for Lothian cont'd

CHP Name	Mean dmft for Children With dmft>0			
	n	Mean	Lower 95% CL	Upper 95% CL
East Lothian	58	3.4	2.7	4.0
Edinburgh	182	4.2	3.8	4.7
Midlothian	69	3.6	2.9	4.2
West Lothian	107	4.3	3.6	5.0

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## APPENDIX 4

### *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 assigned to one of three categories, 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 (it 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 2011/12, 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 50,204 P1 children were inspected (Table 4). This represents 91.5% of P1 children who attended mainstream Local Authority schools across Scotland in the 2011/12 school year and whose parents/carers were advised by letter of the oral health of their child.

**Table 4: Primary 1 children inspected by NHS Boards during the school year 2011/12**

NHS Board	Total no. of P1 children in Local Authority schools	Total no. of P1 children inspected	Proportion (%) of P1 children inspected	Proportion (%) of A Letters issued	Proportion (%) of B Letters issued	Proportion (%) of C Letters issued
Ayrshire & Arran	3,840	3,573	93.0	6.2	28.5	65.2
Borders	1,215	1,078	88.7	3.4	24.6	72.0
Dumfries & Galloway	1,420	1,373	96.7	12.7	28.5	58.8
Fife	3,909	3,525	90.2	7.4	24.1	68.4
Forth Valley	3,216	2,977	92.6	9.3	25.2	65.5
Grampian	5,531	5,059	91.5	8.4	20.7	70.9
Greater Glasgow & Clyde	12,689	11,435	90.1	11.3	28.6	60.1
Highland	3,178	2,852	89.7	5.4	26.7	67.8
Lanarkshire	6,470	6,116	94.5	10.9	25.6	63.5
Lothian	8,537	7,750	90.8	8.2	22.8	69.0
Orkney	220	220	100.0	4.1	18.2	77.7
Shetland	257	257	100.0	8.9	16.3	74.7
Tayside	4,102	3,717	90.6	8.1	25.7	66.3
Western Isles	281	272	96.8	8.5	30.9	60.7
<b>SCOTLAND</b>	<b>54,865</b>	<b>50,204</b>	<b>91.5</b>	<b>9.0</b>	<b>25.5</b>	<b>65.5</b>

## Primary 7 Data

In total, 46,180 P7 children received a *Basic Inspection*. This represents 79.7% of P7 children attending mainstream Local Authority schools across Scotland (Table 5). 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 5: Primary 7 children inspected by NHS Boards during the school year 2011/12

NHS Board	Total no. of P7 children in Local Authority Schools	Total no. of P7 children inspected	Proportion (%) of P7 children inspected	Proportion (%) of A Letters issued	Proportion (%) of B Letters issued	Proportion (%) of C Letters issued
Ayrshire & Arran	4,156	3,308	79.6	1.5	55.1	43.4
Borders	1,248	1,079	86.5	0.6	46.7	52.7
Dumfries & Galloway	1,725	1,256	72.8	1.9	63.2	34.9
Fife	4,028	3,303	82.0	2.5	45.7	51.8
Forth Valley	3,521	2,710	77.0	5.4	44.4	50.2
Grampian	6,020	4,641	77.1	1.9	53.8	44.3
Greater Glasgow & Clyde	12,945	10,804	83.5	2.9	58.8	38.2
Highland	3,605	2,875	79.8	1.4	53.7	44.9
Lanarkshire	6,745	5,630	83.5	2.4	50.5	47.1
Lothian	8,730	6,503	74.5	1.8	53.5	44.7
Orkney	213	156	73.2	0.6	62.2	37.2
Shetland	284	221	77.8	2.7	46.2	51.1
Tayside	4,425	3,442	77.8	1.3	51.7	47.0
Western Isles	273	252	92.3	0.8	63.5	35.7
<b>SCOTLAND</b>	<b>57,918</b>	<b>46,180</b>	<b>79.7</b>	<b>2.3</b>	<b>53.5</b>	<b>44.2</b>