2006

National Dental Inspection Programme of Scotland

A Report of the National Dental Inspection Programme on **P1 Children** throughout Scotland during the school year 2005/2006 prepared for the Scottish Dental Epidemiological Co-ordinating Committee

National Dental Inspection Programme of Scotland

Report of the 2006 Survey of P1 Children

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Published by
Scottish Dental Epidemiological Co-ordinating Committee

ISBN 978-0-9550957-2-6

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National Dental Inspection Programme

The 2006 National Dental Inspection Programme (NDIP) undertaken in the school year 2005/2006

There is a continuing 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 oral health improvement. It is also important that each child's dental wellbeing is assessed so that children and their parents can maintain oral health and take necessary steps to remedy any problems that may have arisen.

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 Scottish children. When combined with the full historical nature of the existing data bank gathered from 1987 by the Scottish Health Boards' Dental Epidemiological Programme[1], NDIP will be able to identify trends and assist in planning future dental services.

Key child age groups are targeted: at entry into Local Authority schools in primary one (P1) and in primary seven (P7) before their 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). In the school year 2005/2006, the main focus of the *Detailed* programme was P1.

Dental health of P1 children in Scotland in 2006

All young people should hope to enter adult life with a healthy mouth. However, despite improvements in the last thirty years, many children in Scotland still suffer from tooth decay and have already embarked upon a journey of deteriorating oral health. At the start of their primary school career, nearly half of these Scottish P1 children already have some established dental decay.

All previous dental surveys have shown that the majority of dental disease continues to be borne by children from more deprived backgrounds, where five year olds are more than three times as likely to suffer from severe dental decay and missing teeth as similar children from wealthier homes.

The Scottish Executive consultation document 'Towards Better Oral Health in Children'[2] sums up the situation by saying, *"Despite some significant improvements, we still have unacceptably poor levels of oral health. Scotland's children still have too many diseased teeth. Dental disease still results in extreme pain and discomfort, infection, social embarrassment and interrupted work and education for a significant part of the Scottish population."*

Principal aims of the Programme in 2006

The principal aims are to gather appropriate information in order to inform children (and parents) of their dental/oral health status and, through appropriately anonymised, aggregated data, advise the Scottish Executive, NHS Boards and other organisations concerned with children's health of the oral disease prevalence in their area.

The 2006 NDIP work took place across all areas of Scotland and involved the collaboration of many people and organisations including the Consultants in Dental Public Health and Chief Administrative Dental Officers Group, the Scottish Association of Community Dental Directors, Community Dental Officers, Scottish NHS Boards, Local Education Authorities and schools, and the Chief Scientist Office's Dental Health Services Research Unit (DHSRU) at the University of Dundee.

What did the Basic NDIP Inspection consist of?

The *Basic Inspection* involved a simple assessment of the mouth of each child using a light, mirror and ball-ended probe. Each child was then placed into one of three categories depending on the level of dental health and a letter sent to their parents. The overall statistics from the 2005/2006 *Basic Inspections* in the NHS Boards in Scotland can be seen in Part 2 of this Report. For greater details of the local results, readers are advised to contact the NHS Board concerned.

One of three letters was sent to parents to inform them about the state of dental health observed in the mouth of their child at the time of the school inspection. The letters were as follows:

- Letter A - severe decay and should seek immediate dental care; *or*
- Letter B - some decay experience and should seek dental care in the near future; *or*
- Letter C - no obvious decay but should continue to see the family dentist on a regular basis

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

What constitutes a Detailed NDIP Inspection?

The *Detailed Inspection* was a more rigorous and comprehensive assessment that involved recording the status of each surface of each tooth in accordance with international epidemiological conventions.

The goals of the *Detailed Inspection* were to determine current levels of established tooth decay and the impact of deprivation on the dental health of primary one children in Scotland in 2006.

The remainder of this first section of the Report gives the results for the *Detailed Inspection*, while the results for the *Basic Inspection* can be found at the end of the document.

How was consistency achieved in the conduct of the inspections across Scotland?

An important part of the NDIP process was that the conduct of the *Detailed Inspections* remained consistent with key elements of the previous SHBDEP system all over Scotland and that the participating community dentists recorded their findings in the same manner. In order to ensure this, the dentists were required to undergo training and calibration exercises before the programme began.

Mandatory two-day training courses took place in Perth in October 2005 consisting of illustrated lectures, IT training and discussion sessions on how to record the inspections (in accordance with criteria set down by the British Association for the Study of Community Dentistry (BASCD)[3], appropriately modified for NDIP.

These were followed by clinical training sessions using P1 children from two local primary schools. When these were completed, the dentists conducted a series of calibration assessments on another group of schoolchildren and the results were compared so that only dentists falling inside the range of 'substantial agreement'[4] would participate in the actual *Detailed Inspections*.

How many P1 children had a Detailed Inspection?

Each NHS Board was required to identify the number of schools needed to obtain a representative sample of a given size from their primary one population[5]. The sample sizes provided adequate numbers to allow meaningful comparisons between NHS Boards to be drawn.

It should be noted that 2005/2006 is the last year that the area covered by NHS Argyll & Clyde Board will be specifically named. The dissolution of NHS Argyll & Clyde took effect from 1st April 2006: the Argyll & Bute component became part of NHS Highland, while the Renfrew & Inverclyde component, plus the parts of East Renfrewshire and West Dunbartonshire that were historically part of Argyll & Clyde, became part of NHS Greater Glasgow & Clyde. Future NDIP Reports will thus contain data for 14 NHS Boards.

The procedure for NDIP differs from the previous SHBDEP surveys in so far as whole classes are now selected: this simplifies the process for schools and ensures that results reflect the P1 population (or P7 population) in Scotland.

Table 1 shows that more than 11,000 children across Scotland were inspected, representing 21% of the P1 population. Across all NHS Boards the percentage being inspected ranged from 8% to 94%.

Although a specific minimum number of children must be inspected for a representative sample of an area to be obtained, some NHS Boards choose to increase this sample size in order to assist with their local area planning needs, while some less populated boards need to include large proportions in order to achieve statistically meaningful numbers.

In the course of the survey, 10% of the children were re-inspected in order to assess the consistency of the examination decisions of the dentists who were undertaking the inspections and thus ensure accuracy of the results.

Table 1: **Primary 1 population and the number of children who had a *Detailed Inspection* by NHS Board**

NHS Board	Primary 1 population	Total number of primary schools with P1 children	Total number of primary schools visited	Number of P1 children receiving a *Detailed Inspection*	% of P1 population receiving a *Detailed Inspection*
Argyll & Clyde	4,219	156	30	588	13.9
Ayrshire & Arran	3,813	144	46	890	23.3
Borders	1,187	66	20	328	27.6
Dumfries & Galloway	1,409	95	27	439	31.2
Fife	3,741	145	37	717	19.2
Forth Valley	3,093	109	30	574	18.6
Grampian	6,117	248	57	976	16.0
Greater Glasgow	8,559	269	127	3,359	39.2
Highland	2,331	167	42	546	23.4
Lanarkshire	6,509	229	30	498	7.7
Lothian	7,585	225	62	1,302	17.2
Orkney	234	18	16	158	67.5
Shetland	226	26	26	211	93.4
Tayside	3,899	171	21	308	7.9
Western Isles	283	37	37	267	94.3
Total for Scotland	**53,205**	**2,105**	**608**	**11,161**	**21.0**

When were the Dental Inspections carried out and how old were the children inspected?

The NDIP inspections took place from November 2005 until June 2006. The staff of the Community Dental Service within each NHS Board undertook all the work associated with both the *Basic* and *Detailed Inspections.*

The average age of the children examined was 5.49 – this was similar to the 2003 figure of 5.55[6] and the 2004 figure of 5.51[7]. The range of mean ages across NHS Boards was 5.36 – 5.72. The mean age for girls was 5.47 and the mean age for boys was 5.51.

What is meant by 'obvious decay' in this report?

It is important to note that when obvious tooth decay (d_3t) is discussed in this report it means *decay that can be seen to go into the dentine* (i.e. the layer below the outer white enamel of the deciduous or first teeth), or *pulpal decay* (i.e. decay into the pulp).

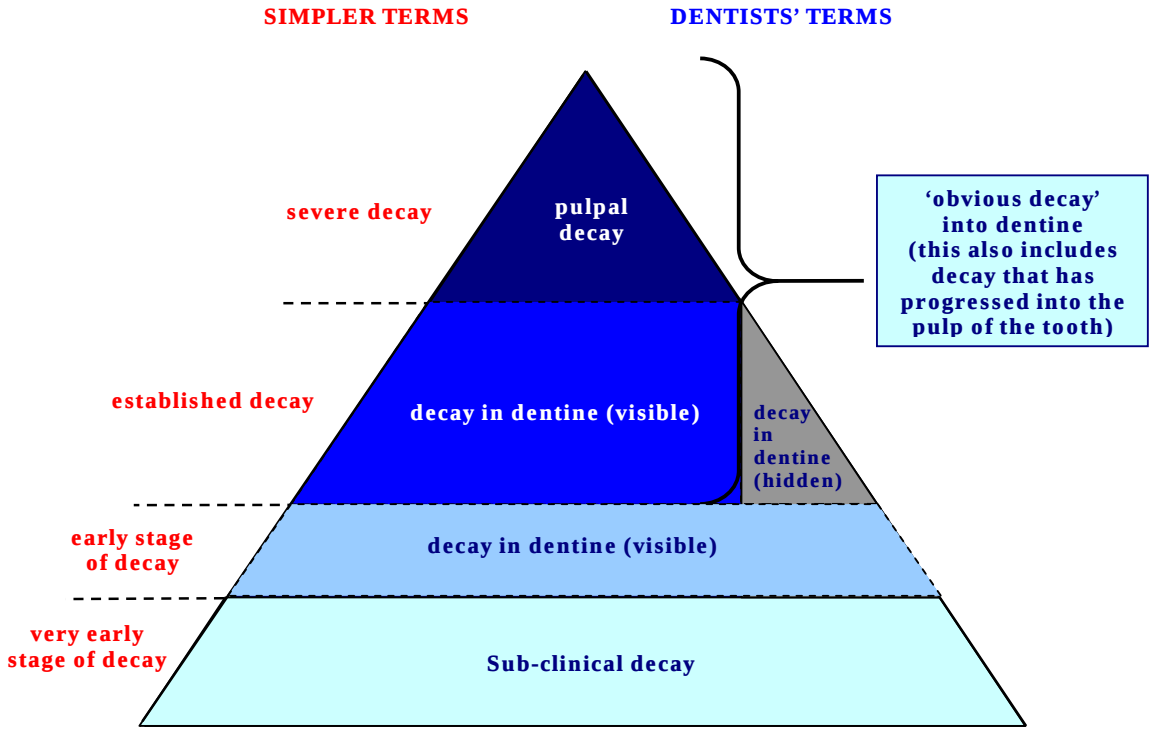
What is meant by 'obvious decay experience' in this report?

When the term obvious decay experience (d_3mft) is discussed in this report it means 'obvious decay' (noted above), but in addition includes both missing teeth (extracted due to decay) and filled teeth. The *Detailed Inspection* measures obvious decay into dentine seen under school (rather than dental surgery) conditions.

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.

Diagram 1:
Stages of tooth decay



What definitions of decay do the dentists conducting the NDIP Detailed Inspection use?

The definitions of decay used are in accordance with the BASCD guidelines and international epidemiological conventions, thus allowing comparisons to be made with other countries in Europe and beyond.

The data presented for decay relate only to dental decay that clinically appears to have penetrated dentine (the inside of the tooth). This is a different diagnostic level from that used by many dentists when examining patients in a dental surgery.

National Dental Inspection Programme (NDIP) 2006

PART 1

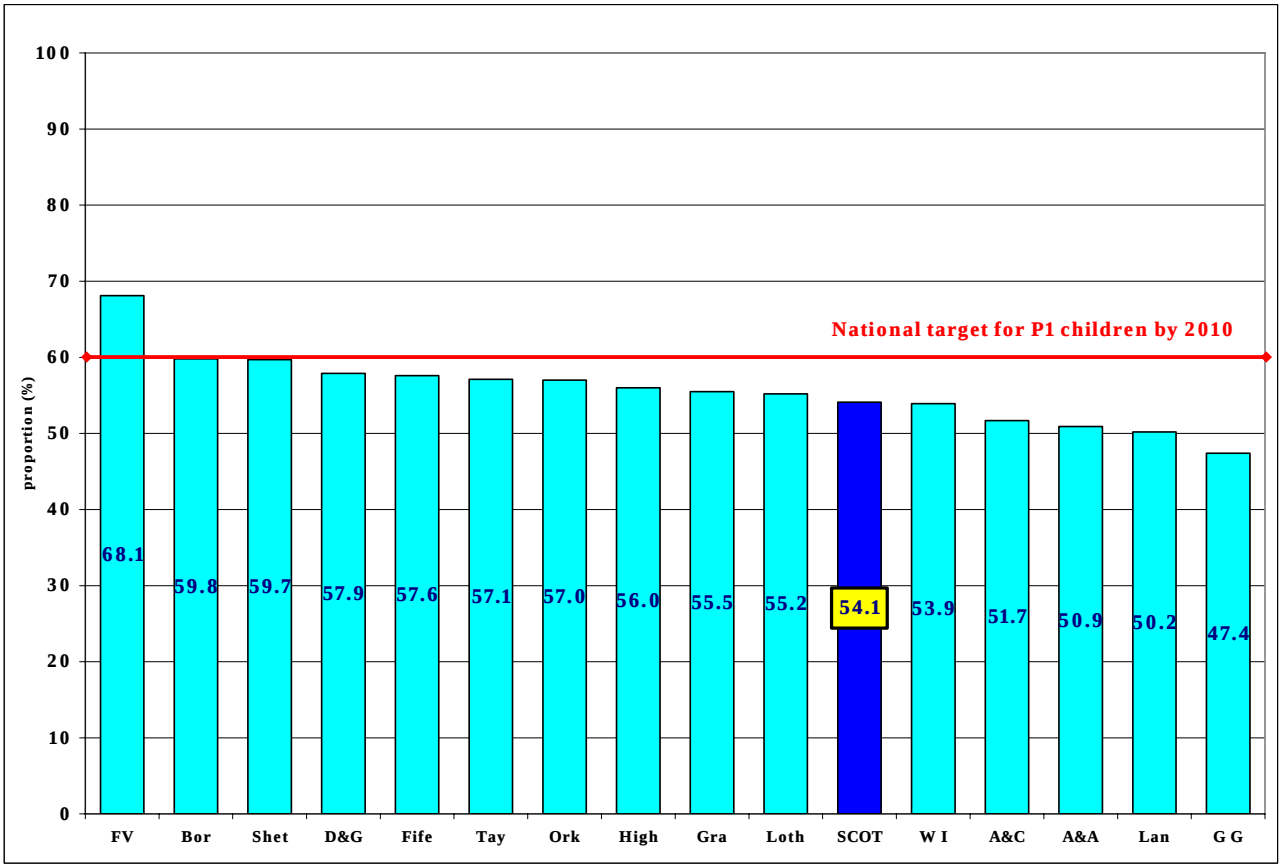
DETAILED INSPECTION RESULTS

What proportion of P1 children in Scotland had no obvious decay experience in 2006?

The target set by the Scottish Executive in 1999[8] is that at least 60% of Scottish five-year-old children will have no obvious decay experience by the year 2010. Currently, 54% of Scottish five-year-olds fall into this category. The situation varies across Scotland, with some NHS Boards having already achieved or come close to the 2010 dental health target, while others still have some way to go.

Figure 1 shows the percentage of Scottish P1 children who showed no signs of obvious decay (or treatment of decay) in any of their deciduous or first teeth.

Figure 1: **Proportion of P1 children in Scotland with no obvious decay experience in 2006**



The proportion of P1 children with no obvious decay experience ranged from 47.4% to 68.1% across the fifteen NHS Boards in Scotland.

The value for Scotland was 54.1%, the highest proportion of P1 children with no obvious decay experience at any time since dental surveys of this type began in 1988 – as can be seen in Figure 2.

What levels of obvious decay experience were seen in P1 children in 2006?

A more detailed picture of decay experience results is presented in Table 2.

Table 2: **Overall obvious decay experience in deciduous teeth of P1 children in Scotland**

	%	NHS Boards
Free of obvious decay experience at the dentinal level ($d_3$mft = 0)	54.1	47.4 – 68.1
With obvious decay experience, $d_3$mft>0 (as per BASCD)	45.9	31.9 – 52.6
With 'current decay', d_3>0 (as per BASCD)	38.4	22.0 – 44.0
Care index (ft/$d_3$mft)	9.23	6.15 – 15.7
	Mean	**NHS Boards**
Obvious decay experience ($d_3$mft) across Scotland	2.16	1.33 – 2.68
Decayed teeth (d_3t) across Scotland	1.45	0.73 – 1.86
Missing teeth (mt) across Scotland	0.51	0.18 – 0.66
Filled teeth (ft) across Scotland	0.20	0.08 – 0.33
Decayed, missing and filled teeth for those with obvious decay experience ($d_3$mft>0)	4.69	4.05 – 5.39

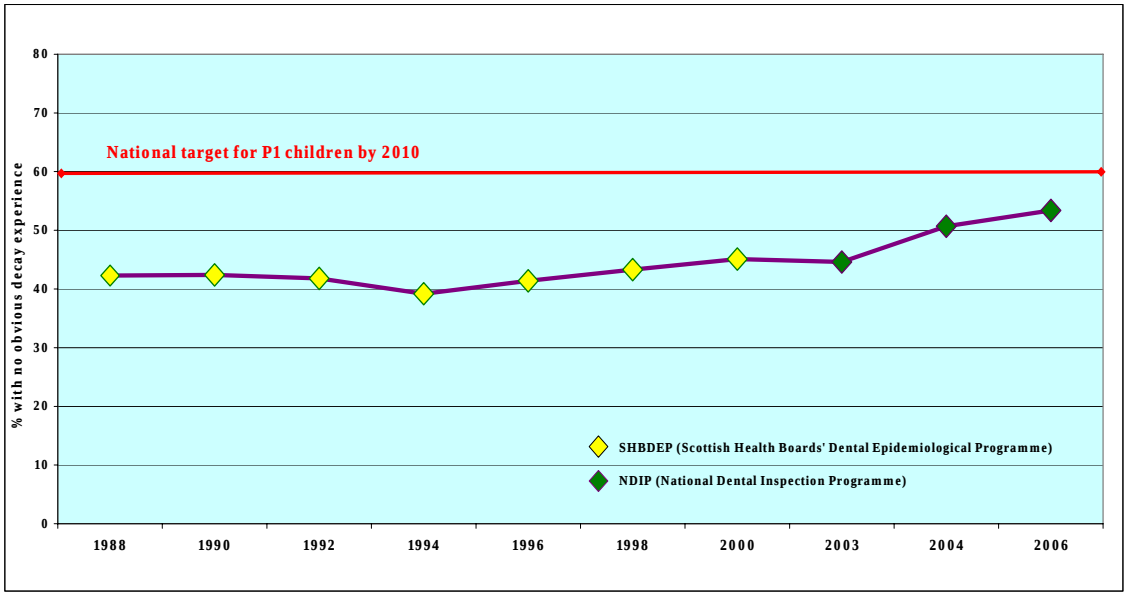
It is important to note that, although the average number of obviously decayed, missing and filled teeth across all primary one children examined in Scotland was 2.16, for the 45.9% of this age group who had experienced dental decay the average number of affected teeth was 4.69.

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

Trends over time in the percentage of children who showed no signs of having decay or treatment of decay in any of their first teeth are shown in Figure 2.

Figure 2:

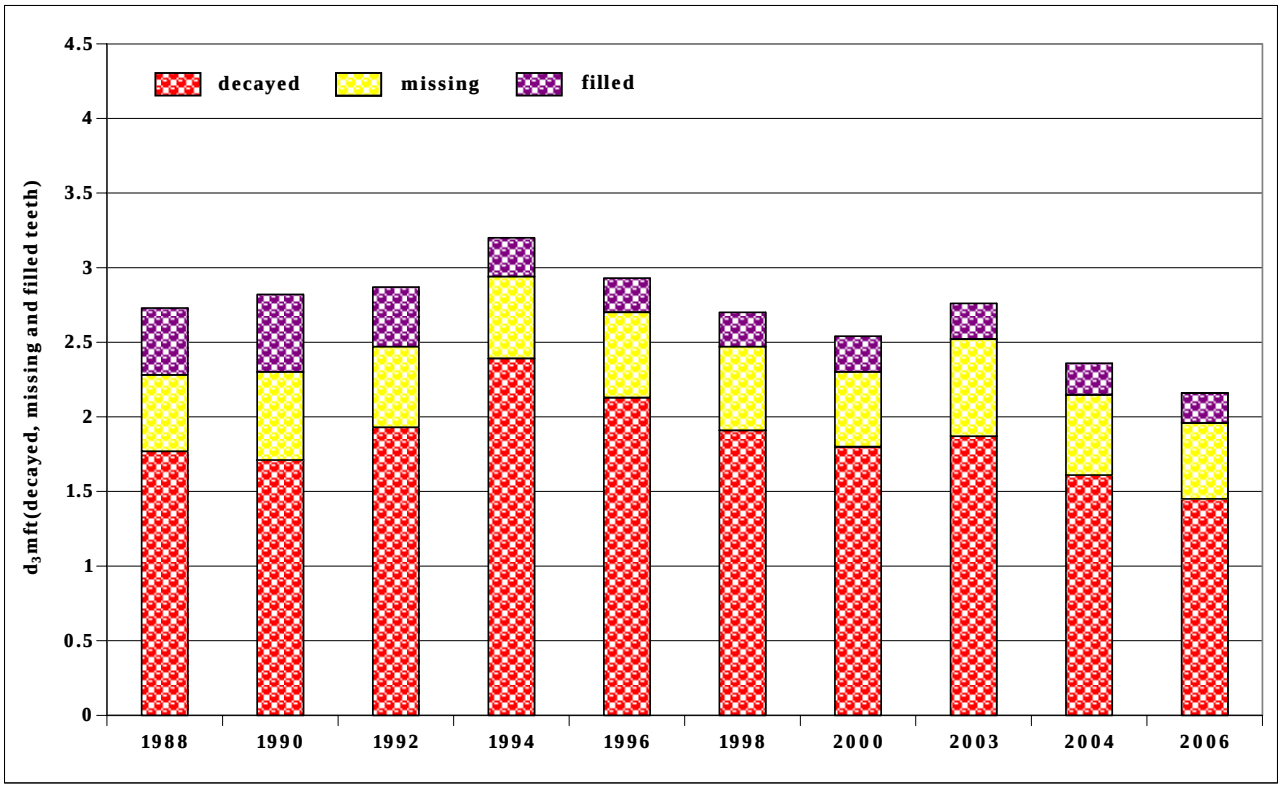
Trends over time in the proportion of P1 children with no obvious decay experience



The data continue to indicate a rise in those with no obvious decay experience (i.e. a decline in the prevalence of decay). This latest NDIP Report on P1 children shows a continuing improvement. Over the past 11 years, it can be seen that overall decay experience has declined, while the proportion with good dental health has improved. In England (where overall the decay levels are historically much lower than in Scotland), the dental health of five year old children appears to show no overall improvement in the dental health of five year old children in the recent surveys that have been undertaken[9].

Figure 3 illustrates the changes in the number of obviously decayed, missing and filled teeth for P1 children in Scotland over the period 1988 to 2006.

Figure 3:
Mean number of obviously decayed, missing and filled teeth ($d_3$mft) in P1 children in Scotland, 1988 - 2006



The importance of monitoring the dental health of children and being able to make comparisons over a long period of time is illustrated by Figure 3 above. By viewing the results as a series, rather than making year-on-year comparisons, the trend in the number of decayed, missing and filled teeth ($d_3$mft) can be seen. Since the 1990s, the underlying trend has been a fall in the mean number of obviously decayed, missing and filled teeth ($d_3$mft) of P1 children in Scotland.

In the 2006 NDIP *Detailed Inspection*, the $d_3$mft had reached a figure of 2.16 - the lowest level since epidemiological dental surveys began of this child age group across Scotland in 1988.

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

The Care Index is used to describe the level of restorative care (the number of filled teeth divided by the number of obviously decayed, missing and filled teeth and multiplied by 100). For Scotland as a whole, only approximately 9% of teeth with decay experience have been filled, and there has been some concern expressed that a high level of unrestored decay may indicate a failure in primary dental care provision in this young age group.

With large numbers of children in P1 still not registered with a dental practice, there remains scope for improvement in this area. Furthermore, the process does not end with simply registering with a dental practice. Patients register with an NHS general dental practitioner to receive the full range of treatment available under NHS general dental services. Before April 2006, all registrations automatically lapsed after 15 months, unless the patient returned within the period to the same or another NHS practice; since April 2006, this registration period has been increased to 36 months. There remains a need for parents to maintain their child's regular attendance with the family dentist and to help combat tooth decay.

Efforts by the Scottish Executive and NHS Boards to improve registration rates are vital in ensuring that children in Scotland receive appropriate treatment. However, once children are in contact with primary care, it is important that essential preventive services are commenced promptly and maintained thereafter.

To encourage families, locally co-ordinated community health improvement programmes promoting children's dental registration and projects supported by the NHS in Scotland, such as the distribution of free toothpaste/toothbrush packs and supervised tooth-brushing in nursery and primary schools, are encouraging parents

to seek and maintain professional dental care for very young children as part of a holistic approach to improving children's health.

The distribution of free tooth-brushing packs to 0-5-year-olds, supported by the Scottish Executive and NHS Boards, and supervised brushing in nursery/primary schools are all initiatives aimed at establishing a good preventive oral hygiene regime from an early age that will carry through into adulthood.

Was the level of obvious decay experience spread evenly throughout the population of P1 children in Scotland?

The results in Table 3 clearly demonstrate that decay is spread unevenly among P1 children. For example, half of the teeth with severe decay were seen in just 3% of the children inspected. In particular, this again highlights the necessity to address the needs of the most vulnerable groups.

***Table 3*: Skewed prevalence of obvious decay experience in the deciduous teeth of P1 children in Scotland**

Share of disease		Proportion of P1 population
Established decay experience (d_3mft)		
100% of teeth with established decay experience	was observed in	38% of population
50% of teeth with established decay experience	was observed in	13% of population
25% of teeth with established decay experience	was observed in	5% of population
Established decay (d_3t)		
100% of teeth with established decay	was observed in	38% of population
50% of teeth with established decay	was observed in	7% of population
13% of teeth with established decay	was observed in	1% of population
Severe decay into the pulp		
100% of teeth with severe decay	was observed in	11% of population
50% of teeth with severe decay	was observed in	3% of population
28% of teeth with severe decay	was observed in	1% of population

The link between social deprivation and poor dental health among P1 children in Scotland

A measure of social deprivation that is often used in Scotland is DepCat (deprivation category)[10]. This is a scale of deprivation based on information gathered in the national census every ten years and describes the socio-economic composition of residents in a particular postcode sector.

The software programme originally used in the NDIP survey was configured to gather the postcode sector of each child examined, but in a few cases this information could not be gathered. A new software programme will be introduced for the 2006/2007 NDIP survey which will enable data compatible with the Scottish Index of Multiple Deprivation (SIMD) to be recorded.

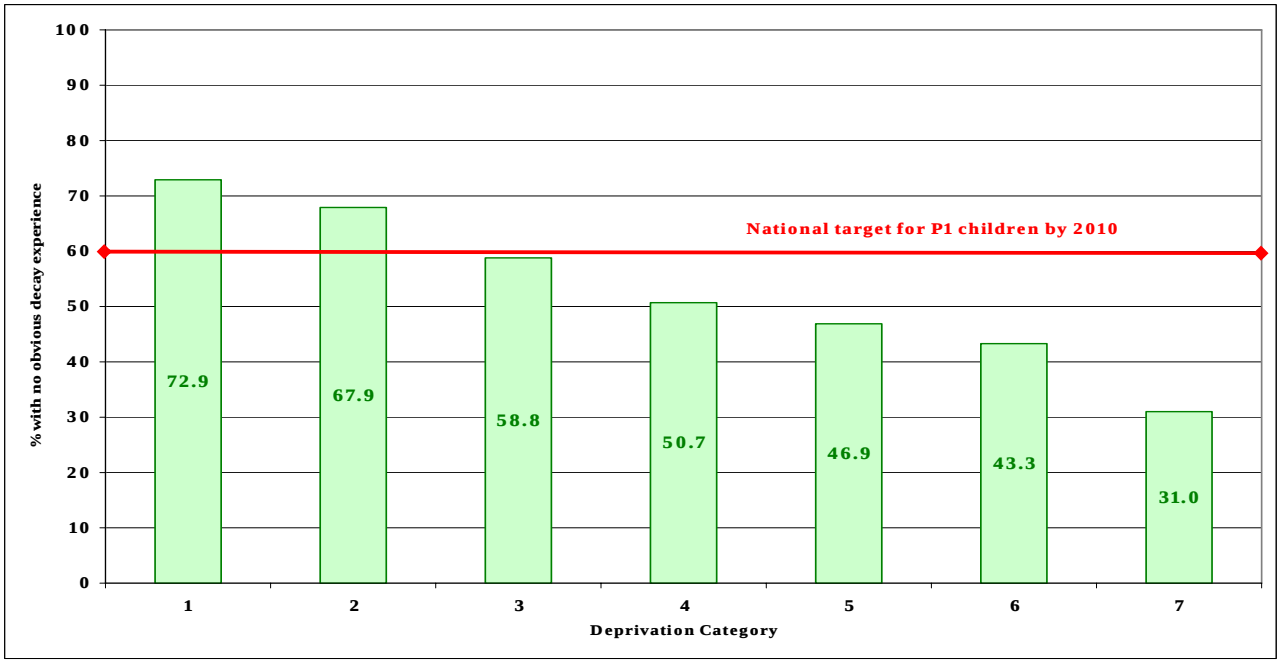
DepCat scores for each postcode area in Scotland are calculated from the percentage of unemployed males, over-crowded households, households without cars and people from social classes IV and V. The scale runs from DepCat 1 (most prosperous) to DepCat 7 (least prosperous).

The index has been shown to be closely linked with measures of death, illness and use of the health service, and a clear association has been established between DepCat-measured social deprivation and dental decay in children[11]. Of the total 11,161 children examined in this NDIP *Detailed Inspection*, 96% (11,061) were subsequently linked to their respective DepCat scores.

Figure 4 graphically illustrates the difference in dental health between P1 children in the most deprived areas (DepCat 7) and their more fortunate contemporaries from DepCat 1 and 2. The children from DepCat 1 and 2 have already reached the 2010 National Target of 60% with no obvious decay experience while children from DepCat 7 fall well short, with only 31% with no obvious decay experience.

The DepCat gradient across the categories has varied little since the measure was first used in relation to children's dental health in Scotland in the mid 1990s and the 2006 NDIP Report continues to show that steady gradient between DepCat 1 and DepCat 7 in relation to the proportion of five-year-old children with no obvious decay experience.

Figure 4: **Proportion of P1 children by deprivation category (DepCat) with no obvious decay experience**

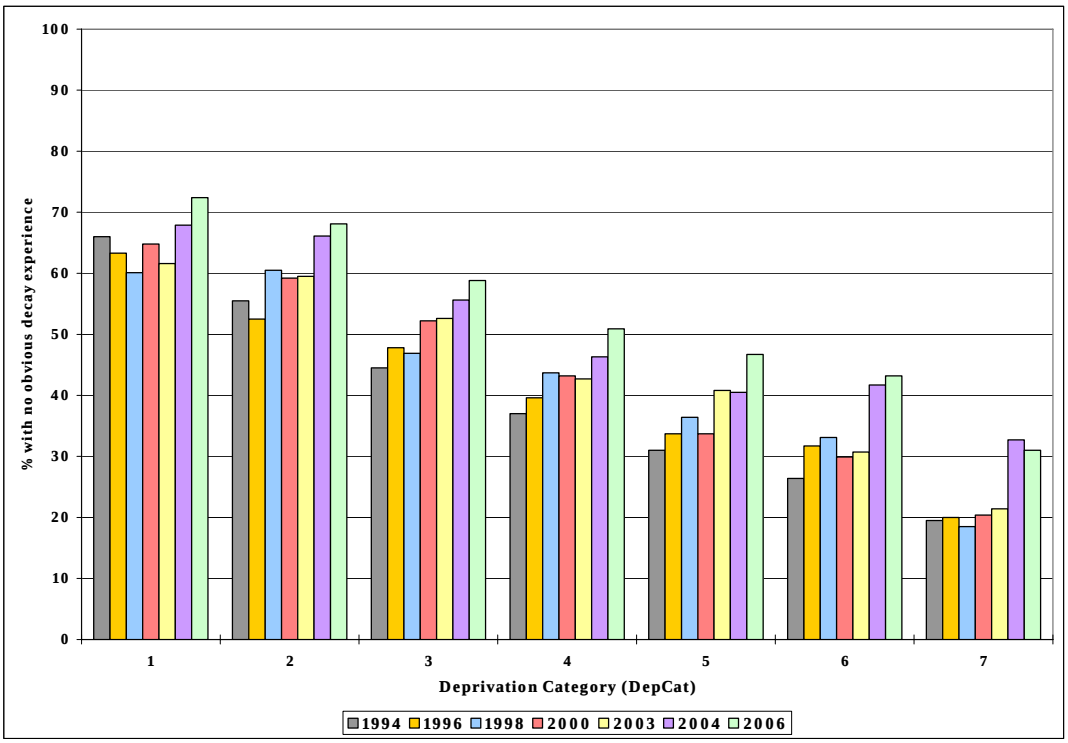


As well as bearing the overall brunt of dental decay experience, children from more deprived areas suffer more from severe decay. In some cases this means the provision of a general anaesthetic for dental extractions with its attendant risks.

Figure 5 illustrates the deprivation category data obtained from the seven epidemiological dental surveys of five-year-old children carried out across Scotland from 1994 to 2006.

Figure 5:

Proportion of P1 children by deprivation category (DepCat) with no obvious decay experience 1994 - 2006



When the results for these P1 children by deprivation category with no obvious decay experience are compared, the gradient between the more deprived categories and those in the least deprived continues to exist. It shows that across all seven deprivation categories, over time the percentage of primary one children with no obvious decay experience is increasing.

What are the detailed decay experience results for each NHS Board across Scotland?

Table 4 below shows in detail the results for no obvious decay experience for each NHS Board. It also gives a measure of the total obvious decay experience (decayed, missing and filled teeth) and a breakdown of the figures into each of these individual elements.

Table 4: **Decay experience results for each NHS Board in Scotland**

NHS Board	% with no obvious decay experience in deciduous teeth	Mean no. of decayed, missing and filled deciduous teeth ($d_3$mft)	Mean no. of decayed deciduous teeth (d_3t)	Mean no. of missing deciduous teeth (mt)	Mean no. of filled deciduous teeth (ft)	For those with decay, the mean no. of decayed, missing and filled deciduous teeth
Argyll & Clyde	51.7	2.27	1.65	0.41	0.21	4.69
Ayrshire & Arran	50.9	2.25	1.48	0.48	0.29	4.58
Borders	59.8	1.70	1.15	0.28	0.26	4.21
Dumfries & Galloway	57.7	1.71	1.27	0.26	0.18	4.05
Fife	57.6	1.88	1.21	0.54	0.13	4.43
Forth Valley	68.1	1.33	0.73	0.52	0.08	4.17
Grampian	55.5	2.06	1.47	0.44	0.15	4.63
Greater Glasgow	47.4	2.64	1.76	0.66	0.22	5.03
Highland	56.0	1.87	1.31	0.40	0.16	4.25
Lanarkshire	50.2	2.68	1.86	0.66	0.16	5.39
Lothian	55.2	2.04	1.31	0.47	0.26	4.56
Orkney	57.0	2.03	1.46	0.35	0.22	4.72
Shetland	59.7	1.75	1.34	0.19	0.23	4.35
Tayside	57.1	1.80	1.14	0.48	0.19	4.20
Western Isles	53.9	2.10	1.60	0.18	0.33	4.56
Scotland	**54.1**	**2.16**	**1.45**	**0.51**	**0.20**	**4.69**

What is the picture of dental health in P1 children across Scotland?

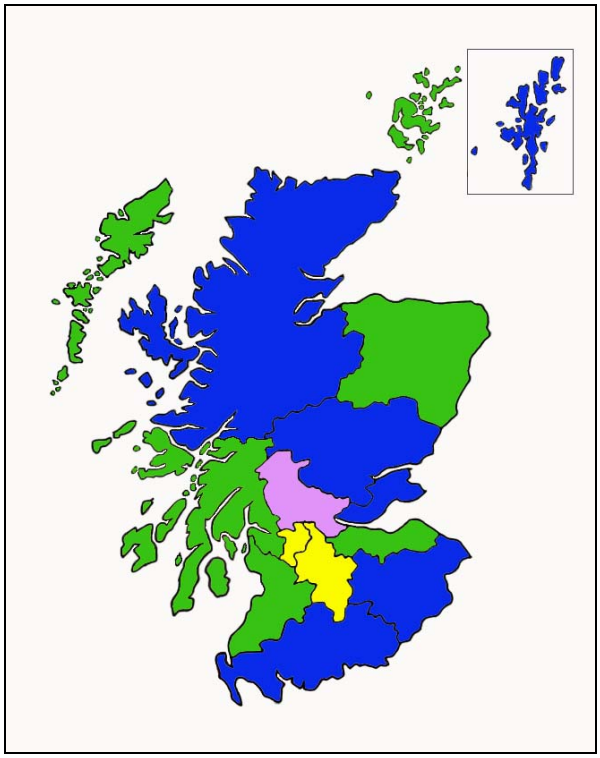


Figure 6:

Tooth decay experience ($d_3$mft)
of P1 children
in Scotland
by NHS Board
2006

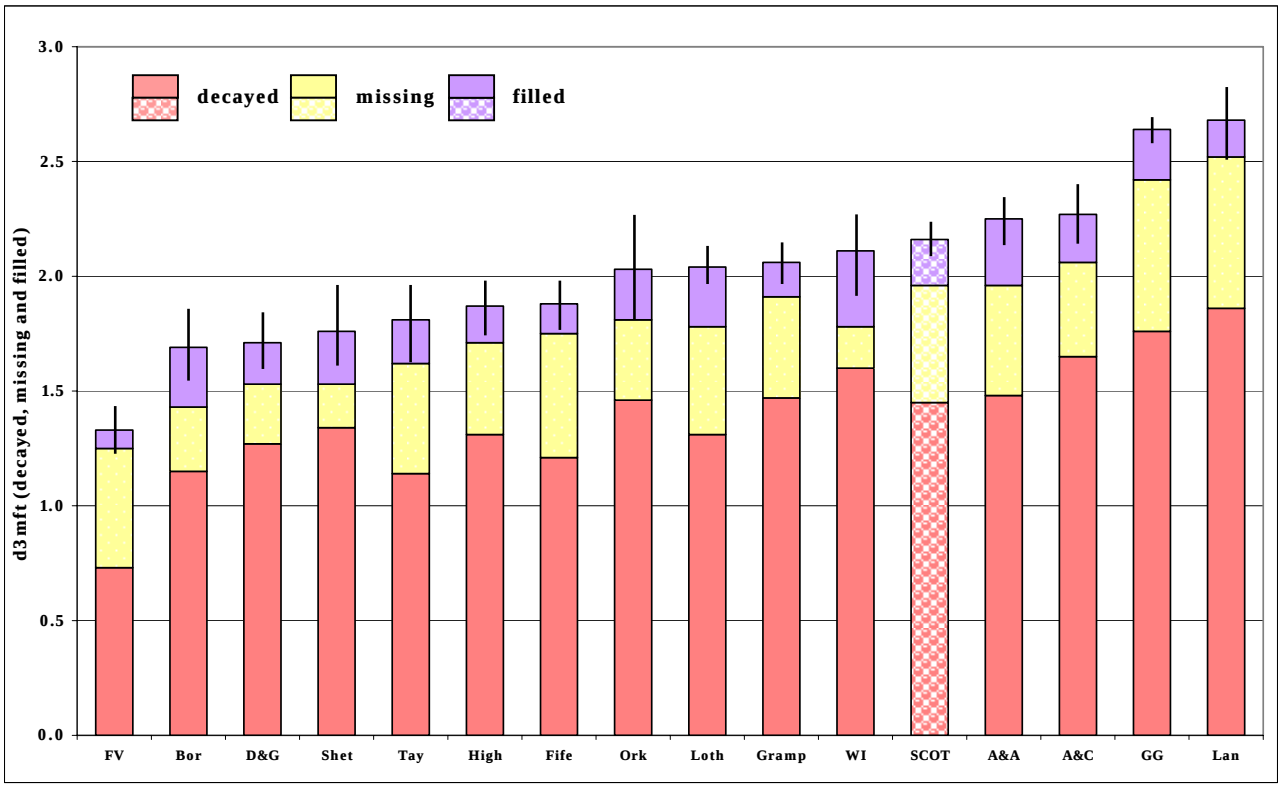
Mean number of decayed, missing and filled teeth ($d_3$mft)

- < 1.50
- 1.51 – 2.00
- 2.01 – 2.50
- > 2.50

Figure 6 illustrates the decay experience of five year olds across Scotland. The contrast between Forth Valley and Lanarkshire, for example, shows the variation in dental health that exists and highlights the difficulty in making broad generalisations about the overall dental health of P1 children in Scotland.

The amount of obvious decay experience for each NHS Board in Scotland can be viewed in Figure 7 (below).

Figure 7:
Mean number of obviously decayed, missing and filled teeth (d_3mft) in Scotland and by NHS Board



This shows the average number of obviously decayed, missing and filled teeth per child for each NHS Board and for Scotland as a whole and emphasises how little of the total decay experience in five-year-old children is made up of fillings or missing teeth.

The black vertical lines indicate the 95% confidence limits associated with each value and illustrate the limited extent to which the figures can be interpreted as a "league table". Thus, while there are differences between the NHS Boards at the extreme right of the figure and those on the far left, it is unwise to ascribe too much importance to minor variation in the detailed "rankings" of NHS Boards near to one another in the figure.

The variation in dental disease levels and in the individual components (decayed, missing and filled teeth) seen in past SHBDEP surveys is still evident in the 2006 NDIP results: for example, Lanarkshire, with an average of 2.68 teeth affected by dental disease, and Greater Glasgow, with 2.64, do not compare well with Forth Valley, Borders and Dumfries and Galloway, where the average figures for teeth affected by dental disease are 1.33, 1.70 and 1.71 respectively. However, dental health in both Lanarkshire and Greater Glasgow has improved when compared to the 2004 survey.

The position of the mean number of decayed, missing and filled teeth (d_3mft) for Scotland illustrates how greatly this figure is influenced by the P1 child population base in a few of the larger NHS Boards. These NHS Boards have a larger proportion of P1 child populations living in more deprived areas than elsewhere in Scotland, and any significant improvements in the dental health of these young children will have a great influence on the mean for Scotland as a whole.

What was the level of decay experience for those who had experienced obvious tooth decay?

In the survey this year, 46% of P1 children had obvious decay experience. For these children the mean number of affected teeth ranged from 4.05 to 5.39 across all fifteen NHS Boards (as shown in Table 4). The level of decay experience in these children is shown in Figure 8.

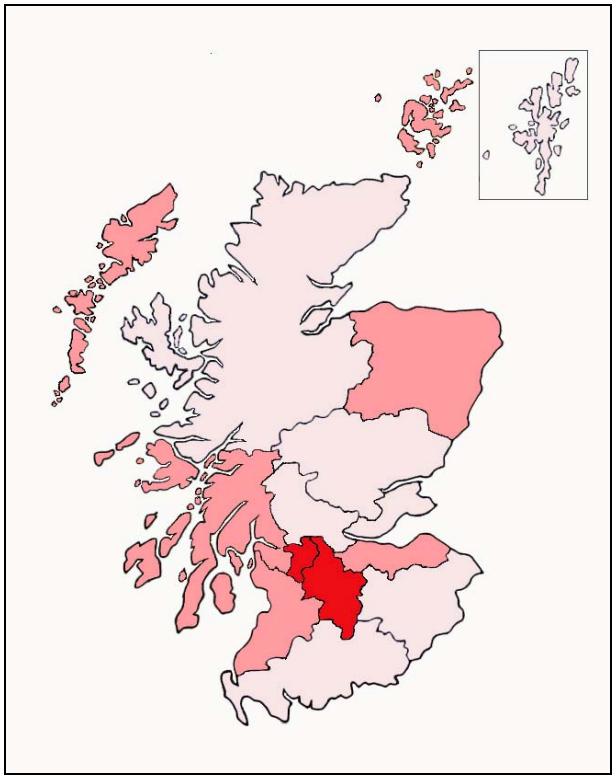


Figure 8:

Total decay experience in those P1 children with obvious decay experience ($d_3$mft for those where $d_3$mft > 0)

Mean number of decayed, missing and filled teeth ($d_3$mft)

<4.50
4.51 – 5.00
>5.00

It is interesting to compare the map in Figure 8 with the map in Figure 6 on page 11 and see the amount of decay experience in the 46% who have the disease with the overall average figure obtained when all the primary one children are considered.

What do the findings of this NDIP Detailed Inspection report show?

The results show that, in overall dental health terms, there has been a continuing improvement in the level of dental health in primary one children in Scotland, which has now reached its highest level since surveys began. However, there are still many children with obvious decay experience.

Dental disease inequalities persist, with children from socially deprived backgrounds having higher levels of decay. Ongoing efforts still need to be made to improve dental health in these areas.

The aim of local and national NHS oral health initiatives undertaken by both the Scottish Executive and NHS Boards in recent years has been to increase the prevalence of good oral health from an early age, encourage daily regular brushing with fluoride toothpaste and improve diet - especially through reducing the frequency of intake of drinks and foods that contain sugars. In this regard, the improving trends in both the increasing proportion of P1 children with no obvious decay experience and the decreasing average number of teeth affected by dental disease are encouraging. The continuation of these initiatives, with support from parents, healthcare professionals and others, will further improve the dental health of children in Scotland.

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National Dental Inspection Programme (NDIP) 2006

PART 2

BASIC INSPECTION RESULTS

The *Basic Inspection* of the NDIP programme aims to inform the parents/guardians of individual P1 or P7 children by letter of the oral health of their child. These letters record the principal clinical findings of the dental inspection of the child and convey the degree of urgency with which an appointment for attendance at a dentist is suggested.

One of three possible letters was sent and each informed the parents/guardians about the state of dental health observed in the mouth of their child at the time of the school inspection. The letters were as follows:

- Letter A - severe decay and should seek immediate dental care; *or*
- Letter B - some decay experience and should seek dental care in the near future; *or*
- Letter C - no obvious decay but should continue to see the family dentist on a regular basis

In the school year 2005/2006, the *Basic Inspection* of NDIP invited children in all P1 and P7 classes of Local Authority (LA) schools to participate in the inspection programme.

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

Primary 1 Data

During 2005/2006, all P1 classes of Scottish Local Authority (LA) schools were invited to participate in the *Basic Inspection* of the NDIP programme.

These *Basic Inspections* were conducted in primary schools across all NHS Boards. Overall, 46,408 P1 children were inspected (Table 5). This represented 87% of P1 children who attended mainstream local authority schools across Scotland in the 2005/2006 school year and whose parents/guardians were advised by letter of the oral health of their child.

***Table 5*: Number of P1 children inspected by NHS Boards during the school year 2005/2006**

NHS Board	Total P1 children in Local Authority (LA) schools 2005/2006	No. of LA schools with one or more P1 classes	No. of LA schools with P1 classes included in NDIP 2005/2006 inspections	No. of LA P1 children inspected, as declared by NHS Boards	% of LA P1 children inspected
Argyll & Clyde	4,219	156	104	3,250	77.0
Ayrshire & Arran	3,813	144	144	3,490	91.5
Borders	1,187	66	66	1,090	91.8
Dumfries & Galloway	1,409	95	95	1,202	85.3
Fife	3,741	145	145	3,388	90.6
Forth Valley	3,093	109	109	3,000	97.0
Grampian	6,117	248	246	5,399	88.3
Greater Glasgow	8,559	269	267	6,876	80.3
Highland	2,331	167	157	2,032	87.2
Lanarkshire	6,509	229	228	5,588	85.9
Lothian	7,585	225	225	6,899	91.0
Orkney	234	18	16	205	87.6
Shetland	226	26	26	211	93.4
Tayside	3,899	171	171	3,510	90.0
Western Isles	283	37	37	268	94.7
Scotland	**53,205**	**2,105**	**2,036**	**46,408**	**87.2**

Primary 7 Data

All NHS Boards were required to undertake *Basic Inspections* on not only P1 children but also those in P7 classes during the 2005/2006 school year. In total, 50,404 P7 children received a *Basic Inspection*. This represented 87% of P7 children attending mainstream local authority schools across Scotland (Table 6). As with P1 children, all the parents/guardians of the P7 children who received a *Basic Inspection* were advised by letter of the oral health of their child.

Table 6: **Number of P7 children inspected by NHS Boards during school year 2005/2006**

NHS Board	Total P7 children in Local Authority (LA) schools 2005/2006	No. of LA schools with one or more P7 classes	No. of LA schools with P7 classes included in NDIP 2005/2006 inspections	No. of LA P7 children inspected, as declared by NHS Boards	% of LA P7 children inspected
Argyll & Clyde	4,856	149	104	3,955	81.4
Ayrshire & Arran	4,320	144	142	3,899	90.3
Borders	1,239	66	66	1,115	90.0
Dumfries & Galloway	1,708	102	102	1,474	86.3
Fife	4,052	145	145	3,545	87.5
F0rth Valley	3,405	108	108	3,098	91.0
Grampian	6,093	249	247	5,269	86.5
Greater Glasgow	9,947	269	267	8,402	84.5
Highland	2,667	177	163	2,216	83.1
Lanarkshire	6,690	228	227	5,726	85.6
Lothian	7,937	225	225	7,194	90.6
Orkney	276	19	17	234	84.8
Shetland	283	29	27	267	94.3
Tayside	4,328	179	179	3,706	85.6
Western Isles	329	38	38	304	92.4
Scotland	**58,130**	**2,127**	**2,057**	**50,404**	**86.7**

A range of logistical issues impacted upon the ability of several NHS Boards to deliver a comprehensive inspection coverage of all schools. These included limitations in professional manpower in some Community Dental Services to meet conflicting service demands and difficulties with the computer software. However, NHS Boards, Community Health Partnerships (CHPs) and Local Authorities across Scotland continue to collaborate to improve and broaden the NDIP programme. In the three years since its introduction, the proportion of both P1 and P7 children inspected by the NDIP programme has continued to rise. With the implementation of a new software programme during the school year 2006/2007, specifically designed to assist in the collection and analysis of the NDIP dental inspection data, further coverage of both P1 and P7 classes should be possible.

For interpretation of the local NDIP Basic Inspection results contained in Tables 5 and 6, readers are advised to contact the NHS Board concerned.

As noted in previous NDIP Reports, while the required target was that all P1 and P7 children ought to receive a *Basic Inspection*, it was improbable that this would be conducted on every child within a target population in participating schools for the following reasons: parental permission not given, child unable/unwilling to co-operate or child not at school on the day of the dental inspection.

How can the NDIP Programme results be applied in local NHS services, CHPs and Local Authorities?

Information from the NDIP programme can be utilised at both NHS Board and Community Health Partnership (CHP) level. These data can be useful in highlighting areas that require health promotion or dental services input and will be a useful monitoring tool over time.

Local Authorities can also receive the anonymised and aggregated data at both individual primary school or 'cluster' levels. It is hoped that, with the appropriate strategies in place to improve dental health in both nursery and primary schools, sustained progress in dental health will be seen over the next few years at each monitoring level.

How can results from the NDIP Basic Inspections be presented at a local level?

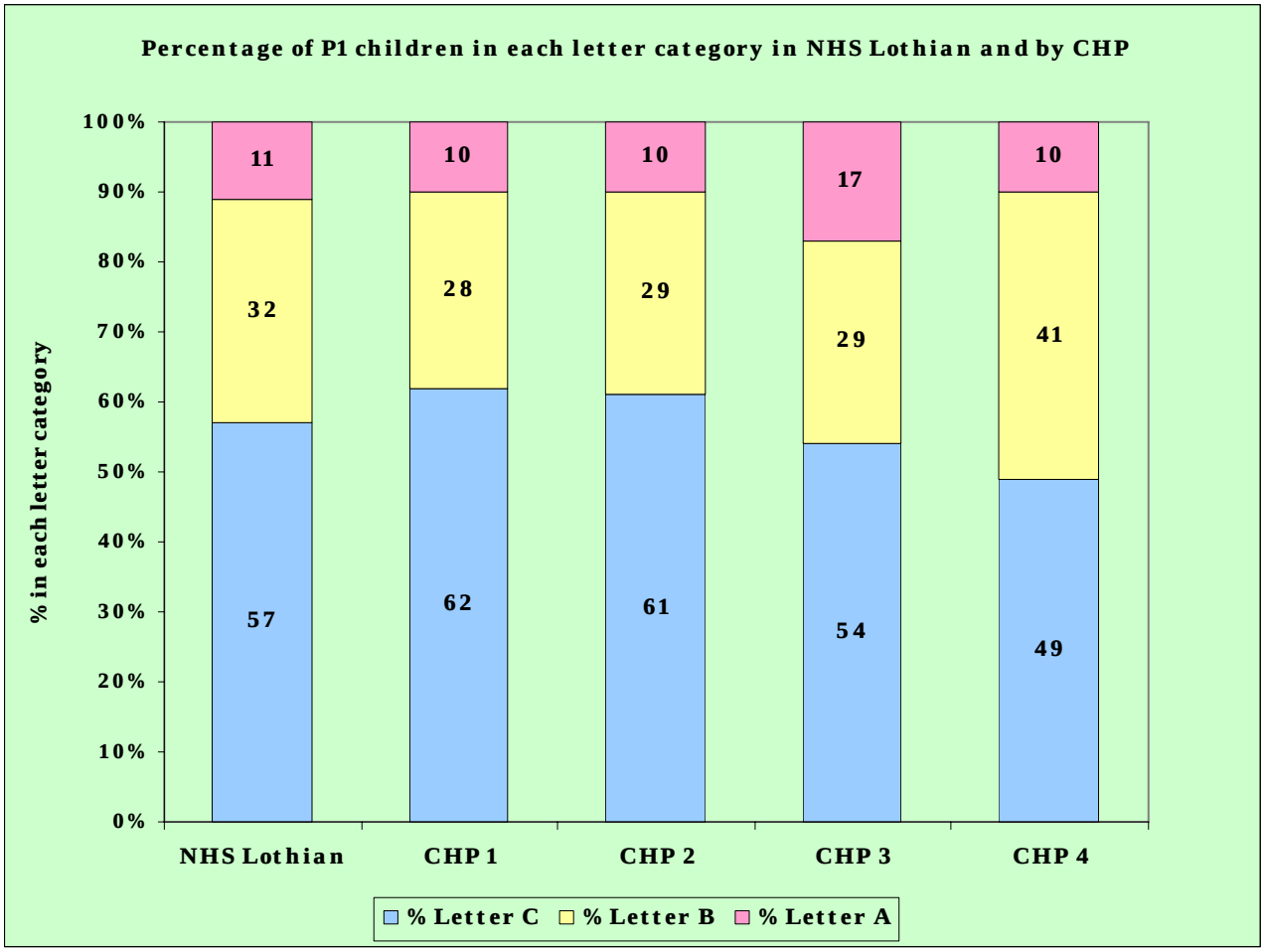
The data returned from the *Basic Inspections* in NHS Lothian are illustrated in the following tables and demonstrate the capacity of the NDIP methodology to reflect the oral health of primary 1 children in the four CHP areas.

Table 7: **Analysis of the *Basic Inspection* letters issued by NHS Lothian for each CHP area**

Number in each location	Letter A	Letter B	Letter C
NHS Lothian	761	2213	3910
CHP 1 area	96	271	593
CHP 2 area	338	940	1985
CHP 3 area	135	232	427
CHP 4 area	192	770	905

Percentage	Letter A	Letter B	Letter C
NHS Lothian	11	32	57
CHP 1 area	10	28	62
CHP 2 area	10	29	61
CHP 3 area	17	29	54
CHP 4 area	10	41	49

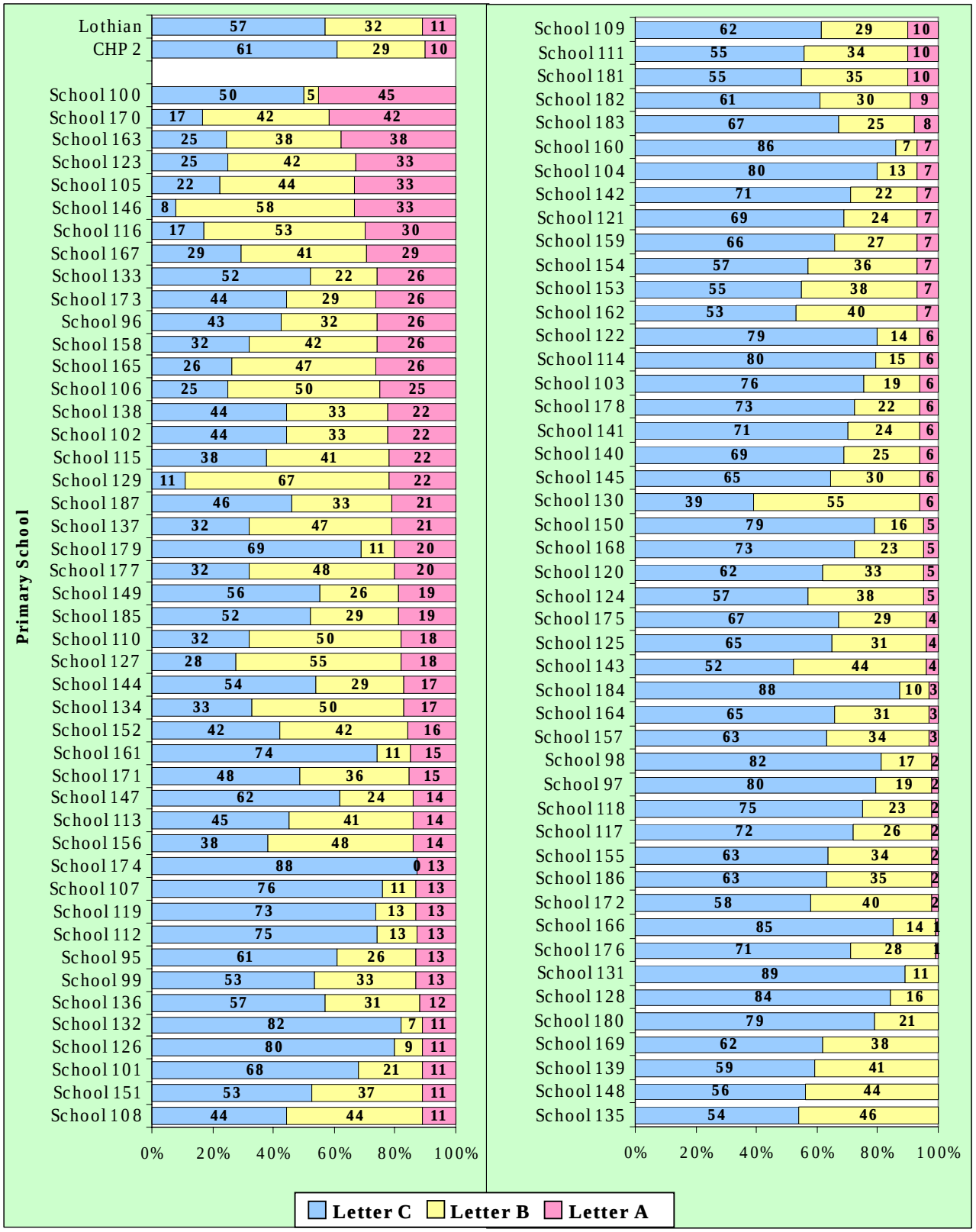
(Note: Schools with data recorded for fewer than 5 pupils have been excluded from this analysis)



Variations within an individual CHP area may be even more marked and inspection results from locally defined areas are useful when targeting specific resources to where they might have the greatest effect.

In order to illustrate this variation, the aggregated results from the *Basic Inspections* of the P1 children in primary schools of Lothian CHP 2 are set out in Table 8.

Table 8: **Variation in *Basic Inspection* letters by primary school within Lothian CHP 2**



The variance in the distribution of the oral disease categories between individual schools demonstrates that no single strategy would be equally appropriate in all schools.

It is intended that these data will continue to be gathered in future years and will facilitate the monitoring of changes in oral health in both P1 and P7 children at this *Basic Inspection* level.

Acknowledgements

The National Dental Inspection Programme would not have been possible without the efforts of many people throughout Scotland who worked together to ensure its success.

The Programme is indebted to:

The participating schools, the children and their parents

Head teachers, Mrs. B. Scott and Mrs. A. Dalziel and the children of St. John's Roman Catholic and Letham Primary Schools in Perth, where the training and calibration exercises were conducted. Without their agreement and unstinting assistance in allowing part of the school day to be disrupted by so many dentists, this report would not have been possible.

Community Dental Officers and Community Dental Service staff who conducted the inspections

Consultants in Dental Public Health and Chief Administrative Dental Officers Group

Dental Health Services Research Unit

Health Department, Directorate of Primary Care and Community Care, Scottish Executive

Local Education Authorities of Scotland

NHS Boards of Scotland

Scottish Association of Community Dental Directors

The National Dental Inspection Programme (NDIP) is funded by the Scottish Executive through the NHS Boards in Scotland.

National Dental Inspection Programme
of Scotland
2006

ISBN 978-0-9550957-2-6