


2004

A large, stylized map of Scotland in shades of blue and green, serving as the background for the title text.

National Dental Inspection Programme of Scotland

A Report of the National Dental Inspection Programme on **P1 Children**
throughout Scotland during the school year 2003/2004 prepared for the
Scottish Dental Epidemiological Co-ordinating Committee

National Dental Inspection Programme of Scotland

Report of the 2004 Survey of P1 Children

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National Dental Inspection Programme

The 2004 National Dental Inspection Programme (NDIP) conducted in the school year 2003/2004

It is 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. 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 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 Scottish children. Combined with the full historical nature of the existing data bank gathered from 1987 by the Scottish Health Boards' Dental Epidemiological Programme¹, NDIP will be able to identify trends and assist in planning future dental services.

Key child age groups are targeted: at entry into school 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 children) and a *Detailed Inspection* (for a representative sample of a specific age group in alternate years). In the school year 2003/2004, the main focus of the programme was P1.

Dental health of P1 children in Scotland in 2004

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 children have some established dental decay.

Scotland does not compare well with other Western European nations. In the Netherlands, for example, 70% of five-year-old children have no obvious dental decay experience compared with just 51% in Scotland². Tooth extraction remains the single most common reason for Scottish children receiving a general anaesthetic.

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 than similar children from wealthier homes.

The Scottish Executive consultation document 'Towards Better Oral Health in Children'³ 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 2004

Its 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 2004 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.

There were three possible letters that would be sent but all inform the parents about the state of dental health found in the mouth of their child at the time of the school inspection. The letters were as follows:

- Letter A (High Risk) - severe decay and should seek immediate dental care; *or*
- Letter B (Medium Risk) - some decay experience and should seek dental care in the near future; *or*
- Letter C (Low Risk) - 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 did the Detailed NDIP Inspection consist of?

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 specific goals of the *Detailed Inspection* were to determine current levels of established tooth decay, and to determine the impact of deprivation on the dental health of primary one children in Scotland in 2004.

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 November 2003 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)⁴, 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’⁵ 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 population⁶. The sample sizes used provided adequate numbers to allow meaningful comparisons between NHS Boards to be drawn.

The procedure for NDIP differs from the previous SHBDEP surveys in so far as whole classes are now selected to simplify the process for schools while ensuring that results reflect the P1 population (or P7 population) in Scotland.

Table 1 shows that more than 9,000 children across Scotland were inspected, representing 16% of the P1 population. Across all NHS Boards the percentage varied from 9% to 93%.

NHS Boards can choose to increase the sample size in order to assist with local planning needs while some less populated boards need to include large proportions to achieve statistically meaningful numbers.

During the course of the survey, 10% of the children were re-inspected in order to assess the consistency of the examination results of the dentists who were undertaking the inspections.

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

Health Board	Primary 1 population	Total number of primary schools with P1 children	Total number of primary schools visited	Number of children inspected	% of P1 population inspected
Argyll & Clyde	4,790	196	36	658	13.7
Ayrshire & Arran	4,142	137	20	433	10.5
Borders	1,006	66	23	404	40.2
Dumfries & Galloway	1,575	111	28	533	33.8
Fife	3,621	135	32	543	15.0
Forth Valley	3,803	108	27	517	13.6
Grampian	5,751	252	24	573	10.0
Greater Glasgow	9,252	286	91	1,998	21.5
Highland	2,554	181	37	509	19.9
Lanarkshire	6,581	227	108	593	9.0
Lothian	7,891	232	43	940	11.9
Orkney	215	19	17	199	92.6
Shetland	254	29	27	237	93.3
Tayside	4,248	176	45	690	16.2
Western Isles	289	35	35	237	82.0
Total for Scotland	55,972	2,190	593	9,064	16.2

When did the Dental Inspections occur and what age were the children?

The NDIP inspections took place from November 2003 until June 2004. 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 5.51 – this was similar to the 2003 figure of 5.55⁷. The mean age for female children was 5.49 and the mean age for male children was 5.53. The range of mean ages across NHS Boards was 5.34 – 5.72.

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 deciduous or first teeth), or *pulpal decay*.

What is meant by ‘obvious decay experience’ in this report?

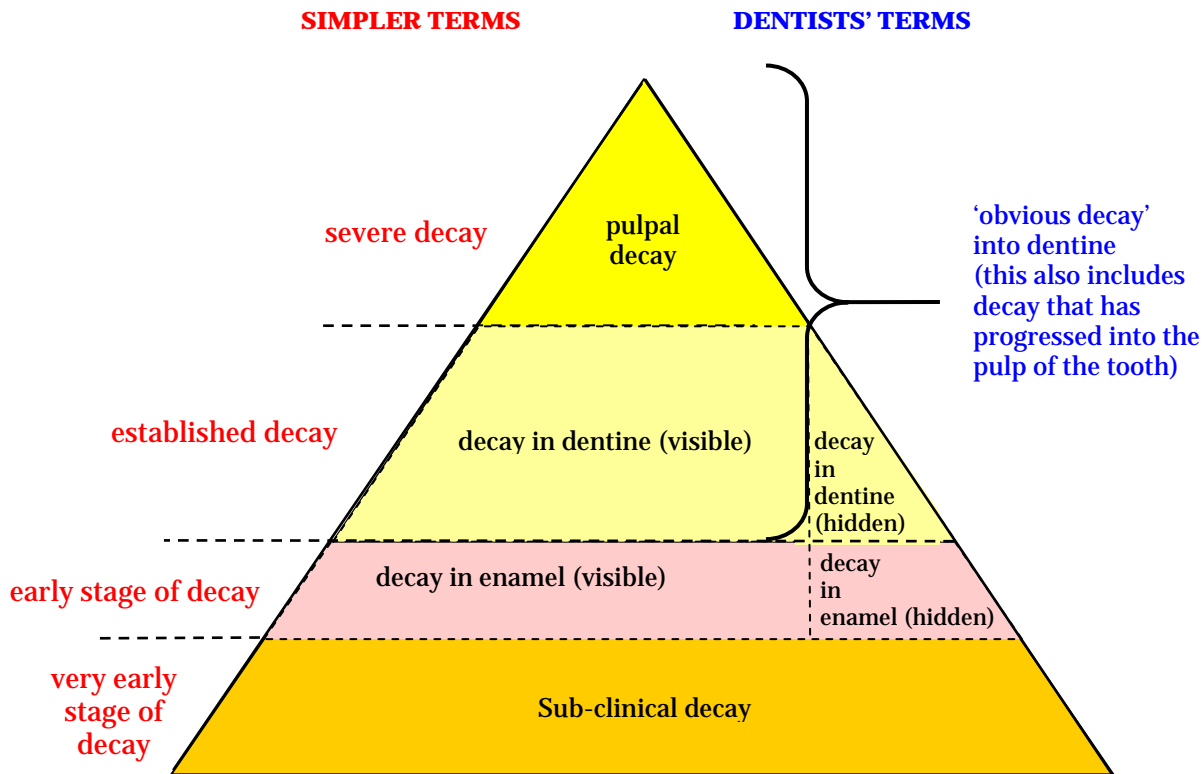
When the term obvious decay experience (d_{3mft}) is discussed in this report it means ‘obvious decay’ (noted above), but in addition includes both missing teeth (extracted due to decay) and filled teeth. The *Detailed Inspection* measures obvious decay into dentine seen under school (rather than dental surgery) conditions.



What are the stages of tooth decay?

Dentists use specific professional terms to identify the different stages of tooth decay. However, in order to help understand these, simpler terms have also been added to help illustrate the various stages of tooth decay shown in Diagram 1 below.

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 only relate 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) 2004

PART 1

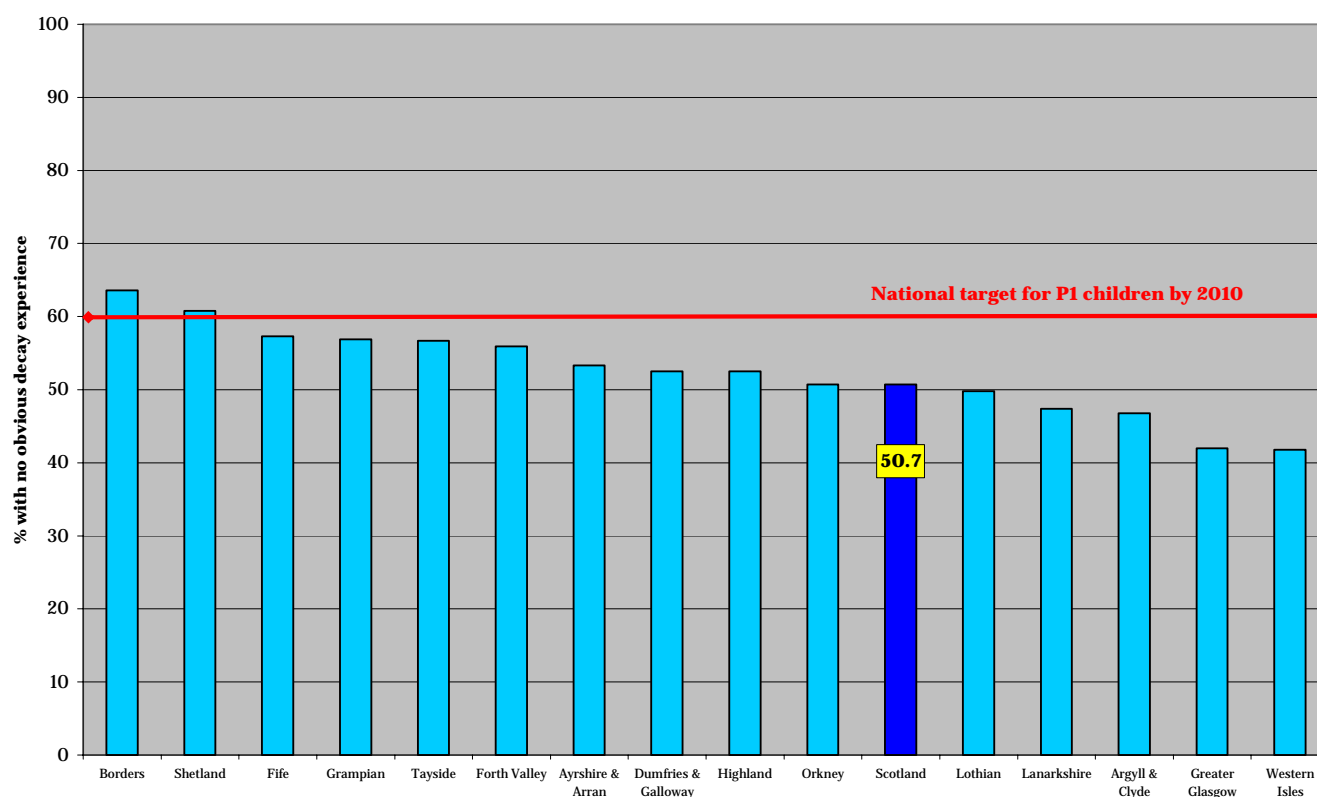
DETAILED INSPECTION RESULTS

What proportion of P1 children in Scotland had no obvious decay experience in 2004?

The target set by the Scottish Executive in 1999⁸ is that at least 60% of Scottish five-year-old children will have no obvious decay experience by the year 2010. Currently, 51% 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 teeth.

Figure 1: Proportion of P1 children in Scotland with no obvious decay experience in 2004



The proportion of P1 children with no obvious decay experience ranged from 41.8% to 63.6% across the fifteen Scottish NHS Boards.

The value for Scotland was 50.7%, the highest proportion of children in this age group with no obvious decay experience at any time since dental surveys of this type began in 1988.

What levels of decay experience were seen in P1 children in 2004?

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

Table 2: Overall decay experience for P1 children in Scotland in 2004

	<u>%</u>	<u>NHS Boards</u>
'Free' of obvious decay experience at the dentinal level (d₃mft = 0 *)	50.7	41.8 - 63.6
With obvious decay experience, d₃mft>0 (as per BASCD)	49.3	36.4 - 58.2
With 'current decay', d₃>0 (as per BASCD)	42.0	30.9 - 54.9
Care Index (ft/d₃mft)	8.9	5.9 - 20.5
	<u>Mean</u>	<u>NHS Boards</u>
Obvious decay experience (d₃mft) across Scotland	2.36	1.51 - 3.08
decayed teeth (d₃t) across Scotland	1.61	1.01 - 2.20
missing teeth (mt) across Scotland	0.54	0.22 - 0.80
filled teeth (ft) across Scotland	0.21	0.11 - 0.42
decayed, missing and filled teeth for those with obvious decay experience (d₃mft>0)	4.8	3.86 - 5.45

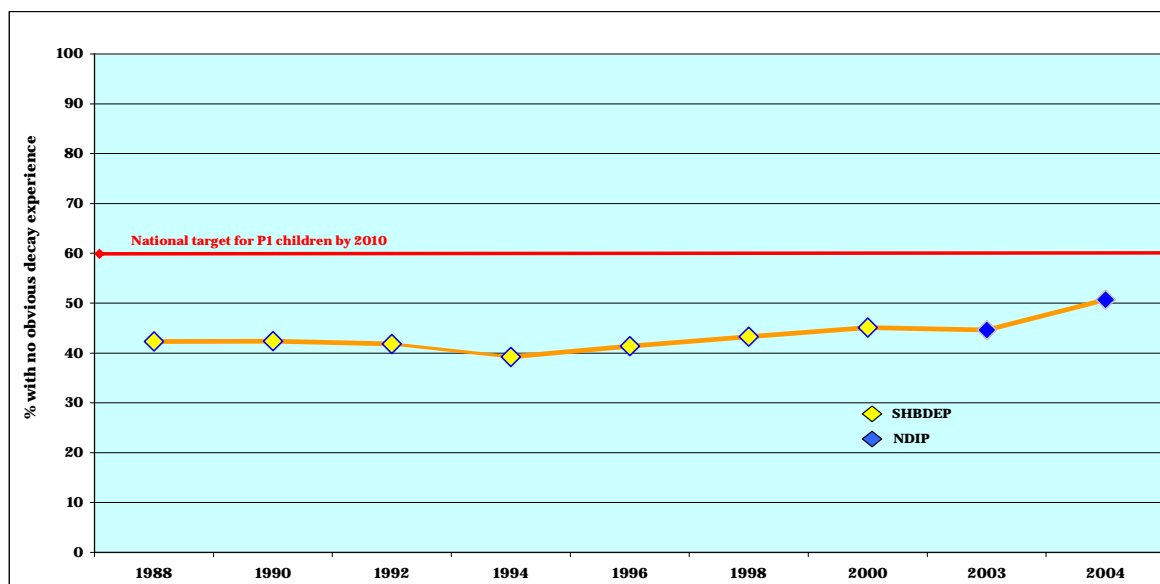
* National Target for the year 2010 = 60%

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 2.36, for the 49% of this age group who have experienced dental decay, the average number of affected teeth was 4.8.

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

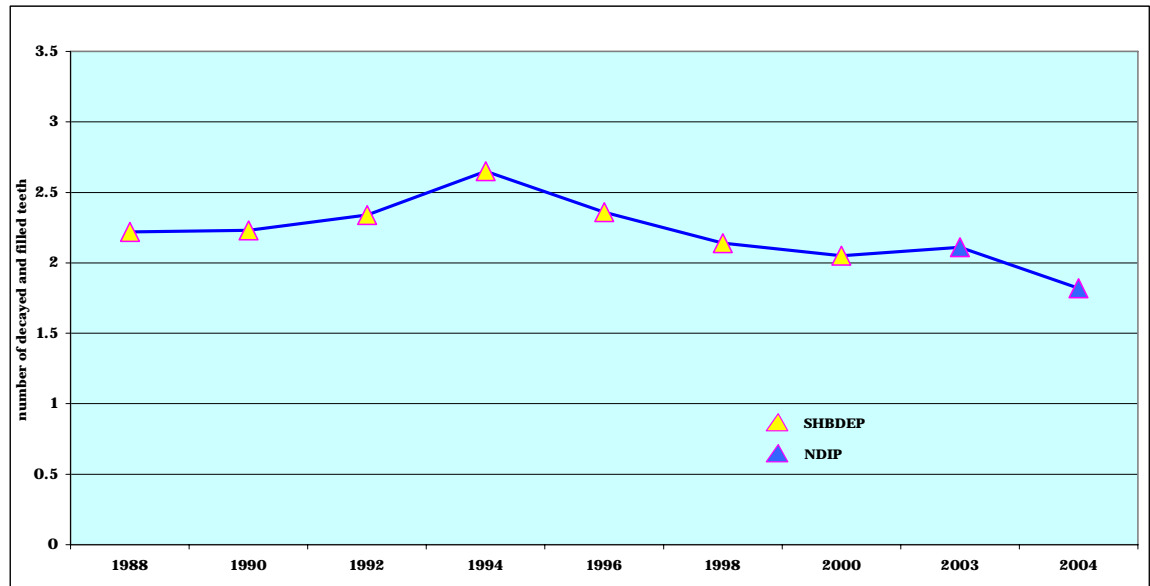


The data appear to indicate a rise in those with no obvious decay experience (i.e. a decline in the prevalence of decay). Over time, it can be seen that there has been a reduction in the overall decay experience over the past 11 years. It is, however, too early to say if this trend will continue. In England (where overall decay levels are lower than Scotland), the dental health of five year olds appears to be deteriorating, following a long plateau⁹.



Figure 3 illustrates the changes in the number of obviously decayed and filled teeth for P1 children in Scotland over the period 1988 to 2004.

Figure 3:
Trends over time in the number of decayed and filled teeth (d3ft) in P1 children



At the time of the previous survey, the mean number of decayed and filled teeth seemed to have settled at around 2. In the 2004 survey, this figure has fallen to below 2, the lowest since the first SHBDEP survey in 1988.

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, it can be seen that minimal improvement in the number of decayed and filled teeth has occurred since the mid 1980s. However, the figure of 1.82 from this NDIP *Detailed Inspection* continues the trend of a slow steady reduction over the last eleven years since 1994.

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 some concern has been expressed that a high level of unrestored decay may indicate a failure in primary dental care provision.

With large numbers of children in P1 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. As dental registration differs from joining a medical practice (in that it lapses if the patient does not return to the dental practice within a fifteen month period), there is additional effort needed from parents to maintain their child's enrolment with the family dentist and to help children combat tooth decay.

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 low Care Index figure raises the issue of how best to treat dental decay in young children, currently a source of debate within the dental profession. A traditional approach is that all holes in teeth should be restored by conventional fillings and this view is still strongly supported by one school of thought¹⁰. However, recent debate has emphasised the view that consideration must be given to the maturity and emotional state of the child and the effect of previous dental treatment, together with medical and socio-economic factors¹¹. The process of placing a

filling may be considered too traumatic in some cases for a small child, and some dentists fear that it may result in an aversion to dental treatment in later life. However, whichever practice is followed, preventive care is still needed.

The distribution of free tooth-brushing packs to 0-3 year olds supported by the Scottish Executive and supervised brushing in nursery/primary schools are initiatives aimed at establishing a good preventive oral hygiene regime from an early age that will hopefully carry through into adulthood.

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 in contact with primary care, it is important that essential preventive services are commenced promptly and maintained thereafter.

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

Table 3: Skewed distribution of the decay

Proportion of P1 children		Share of disease	
Established decay (d3t)			
42% of population	had	100% of teeth with established decay	
29% of population	had	90% of teeth with established decay	
10% of population	had	50% of teeth with established decay	
4% of population	had	25% of teeth with established decay	
Severe decay (into the pulp)		Share of disease	
10% of population	had	100% of the severe decay	
8% of population	had	90% of the severe decay	
2% of population	had	50% of the severe decay	

The results in Table 3 clearly demonstrate how decay is spread unevenly among P1 children. For example, half of the teeth with severe decay were seen in just 2% of the children inspected. This highlights the necessity of both addressing the needs and the difficulties of the most vulnerable.

Is there a link between social deprivation and poor dental health among P1 children in Scotland?

A measure of social deprivation often used in Scotland is DepCat (deprivation category)¹². 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. 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).

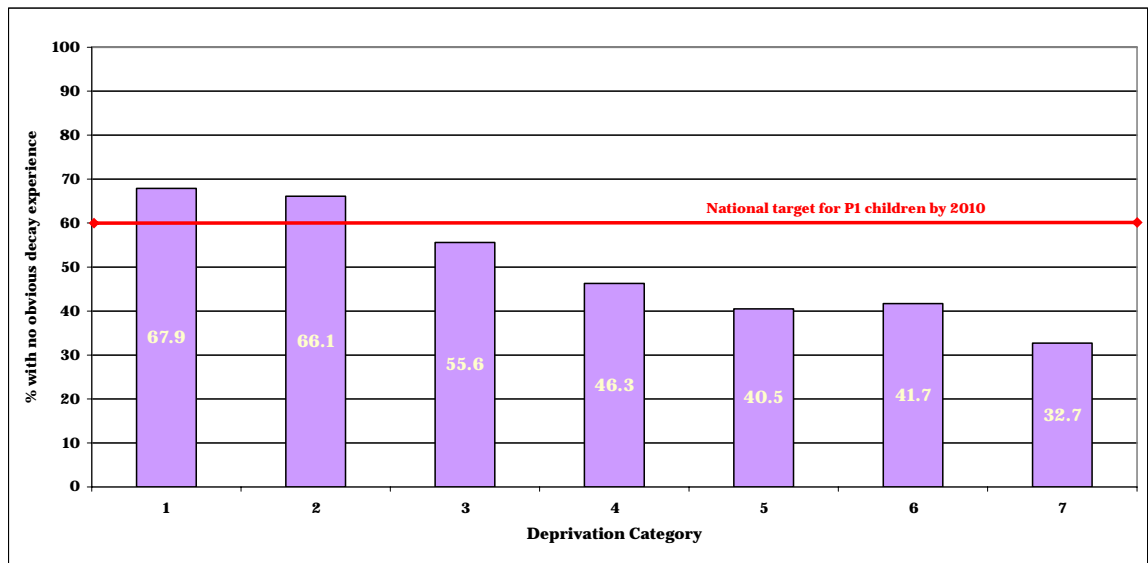
The index has been shown to be closely linked with measures of death, illness and use of the health service, and a clear association has been established between DepCat measured social deprivation and dental decay in children¹³. Of the total 9,064 children examined in this NDIP *Detailed Inspection*, 96% were subsequently linked to their respective DepCat scores.

Figure 4 graphically illustrates the yawning gap 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. Children from DepCat 7 fall well short, with only 33% with no obvious decay experience. These results have varied little since the DepCat measure was first used in relation to children’s dental health in Scotland in the mid-1990’s, but 2004 seems to show an improvement across all seven deprivation categories.



Figure 4:

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



As well as bearing the overall brunt of dental decay experience, children from more socially deprived areas suffer more from severe decay. In many cases this means the child will be given a general anaesthetic for dental extractions with the attendant risks.

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

Table 4 below shows in detail the results of the prevalence of decay for each NHS Board. It gives a measure of the total obvious decay experience (decayed, missing and filled teeth) and a breakdown of the figure into each of these individual elements.

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

NHS Board	% no obvious decay experience	Mean number of decayed, missing and filled teeth (d ₃ mft)	Mean decayed teeth (d ₃ t)	Mean missing teeth (mt)	Mean filled teeth (ft)	For those with decay, the mean number of decayed, missing and filled teeth
Argyll & Clyde	46.8	2.77	2.01	0.48	0.28	5.21
Ayrshire & Arran	52.0	1.93	1.25	0.53	0.16	4.03
Borders	63.6	1.61	1.01	0.27	0.33	4.44
Dumfries & Galloway	52.5	2.08	1.49	0.44	0.15	4.38
Fife	57.3	1.65	1.06	0.42	0.17	3.86
Forth Valley	55.9	1.87	1.24	0.52	0.11	4.25
Grampian	56.9	1.98	1.28	0.46	0.24	4.58
Greater Glasgow	42.0	3.08	2.16	0.72	0.20	5.31
Highland	52.5	2.45	1.60	0.64	0.21	5.15
Lanarkshire	47.4	2.87	1.88	0.80	0.19	5.45
Lothian	49.8	2.31	1.68	0.38	0.25	4.60
Orkney	50.3	2.09	1.49	0.31	0.29	4.20
Shetland	60.8	1.51	1.11	0.22	0.19	3.86
Tayside	56.7	1.92	1.15	0.51	0.26	4.45
Western Isles	41.8	2.89	2.20	0.28	0.42	4.97



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

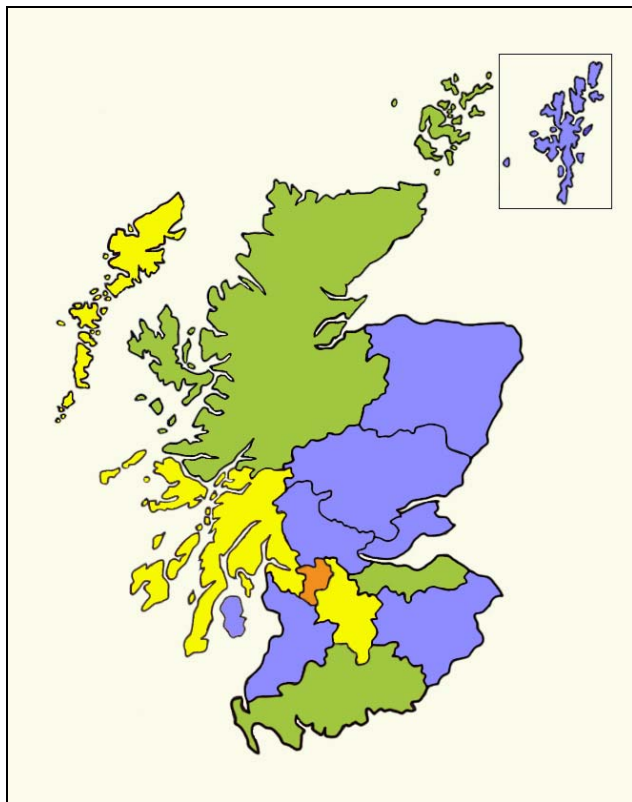


Figure 5:

Tooth decay experience (d₃mft) of P1 children in Scotland by NHS Board 2004

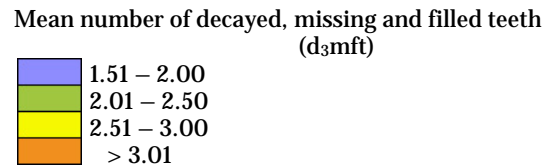
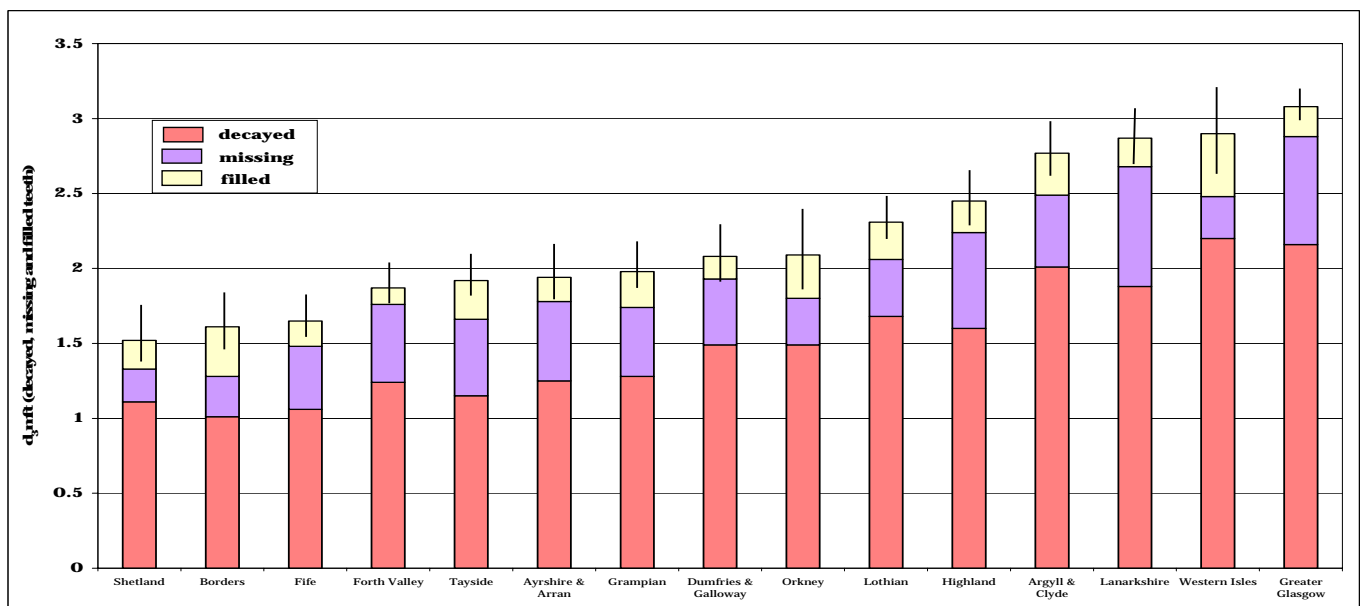


Figure 5 illustrates the decay experience of five year olds across Scotland. The contrast between Borders or Shetland and Glasgow, for example, shows the variation in dental health that exists and highlights the difficulty in making generalisations about the overall dental health of five year old children in Scotland.

The amount of obvious decay experience for each NHS Board in Scotland can be viewed in Figure 6 (below).

Figure 6: Mean number of obviously decayed, missing and filled teeth (d₃mft) for each NHS Board



This shows the average number of obviously decayed, missing and filled teeth per child for each NHS Board and emphasises how little of the total decay experience in this age group is made up of either fillings or missing. The

vertical bars indicate the 95% confidence limits associated with each value and illustrate the limited extent to which the figure can be interpreted as a “league table”. Thus, while there are real 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 ranking positions 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 2004 NDIP results; for example Greater Glasgow with an average of 3.08 teeth affected by dental disease and Lanarkshire with 2.87 do not compare well with Shetland, Borders and Fife, where the average figures for teeth affected by dental disease are 1.51, 1.61 and 1.65 respectively.

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

In the survey this year, 49% of P1 children had obvious decay experience. For these children, the mean number of affected teeth ranged from 3.86 to 5.45 across all fifteen NHS Boards (as shown in Table 4). The level of decay experience in these children is shown in Figure 7.

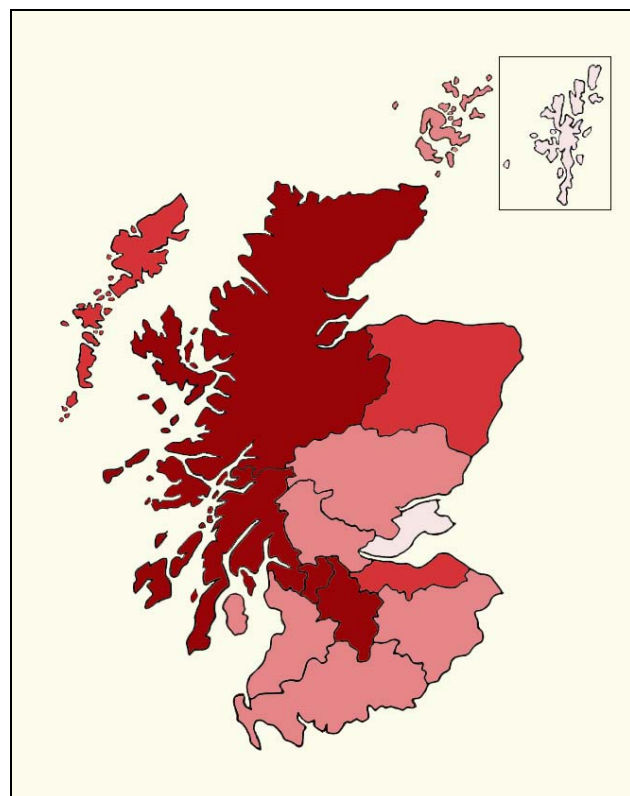
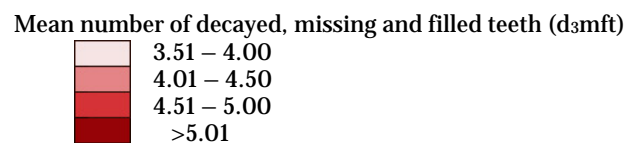


Figure 7:
Total decay experience
in those P1 children
with obvious decay experience
(d₃mft for those where d₃mft >0)



It is interesting to compare the map in Figure 7 with the map in Figure 5 on page 10 and see the amount of decay experience in the 49% who have the disease with the overall average figure obtained when all the primary one children are considered.

What do the findings of the second NDIP Detailed Inspection survey show?

The results show that in overall dental health terms there has been a small improvement in the level of dental health in primary one children. However, there are still too many of these children with decay experience.

Dental inequalities continue to persist with children from socially deprived backgrounds having high levels of decay. Continuing efforts need to be made to improve dental health in these areas.

New initiatives have already been started by both the Scottish Executive and NHS Boards to prevent dental disease from an early age and encourage a good oral hygiene regime. These initiatives, with support from parents, healthcare professionals and others, will help to reduce the unacceptably poor levels of dental health endured by children in Scotland.

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National Dental Inspection Programme (NDIP) 2004

PART 2

Basic Inspections Results

The *Basic Inspection* of the NDIP programme aims to inform the parents/carers of individual P1 or P7 children by letter of the oral health risk 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.

There are three possible letters that may be sent but all inform the parents about the state of dental health seen in their child at the time of the school inspection. The letters are as follows:

- Letter A (High Risk) - severe decay and they should seek immediate dental care; *or*
- Letter B (Medium Risk) - some decay experience and they should seek dental care in the near future; *or*
- Letter C (Low Risk) - no obvious decay but they 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.

Primary 1 Data

In the school year 2003/2004, the main aim of the *Basic Inspection* of NDIP was to invite children in all P1 classes of Scottish Local Authority (LA) schools to participate in the inspection programme.

Basic Inspections were conducted in 1,701 primary schools and overall, 39,300 P1 children were inspected (Table 5). This represents 70% of P1 children who attended mainstream local authority schools across Scotland in the 2003/2004 school year and whose parents/guardians were advised by letter of the oral health risk of their child.

Table 5: Number of P1 children inspected by NHS Boards during the school year 2003/2004

NHS Board	Total P1 children in Local Authority (LA) schools 2003/2004	No. of LA schools with one or more P1 classes	No. of LA Schools with P1 classes included in NDIP 2003/2004 inspections	No. of LA P1 children inspected	% of LA P1 children inspected
Argyll & Clyde	4,670	194	188	2,822	60.0
Ayrshire & Arran	4,142	144	130	3,486	84.0
Borders	1,169	65	65	1,067	91.0
Dumfries & Galloway	1,509	110	37	550	36.4
Fife	3,750	139	139	3,431	91.5
Forth Valley	3,803	109	107	2,665	70.1
Grampian	5,714	260	81	2,310	40.2
Greater Glasgow	9,210	285	245	7,273	79.0
Highland	2,554	180	103	1,478	57.8
Lanarkshire	6,580	229	179	4,528	68.8
Lothian	7,891	232	171	5,343	67.7
Orkney	210	17	17	199	94.8
Shetland	254	29	27	237	93.0
Tayside	4,248	176	176	3,674	86.0
Western Isles	281	36	36	237	84.3
Scotland	55,985	2,205	1,701	39,300	70.2

Primary 7 Data

Although the NHS Boards were only required to undertake *Basic Inspections* on P1 children during the 2003/2004 school year, a majority of NHS Boards were also able to pilot similar inspections on P7 classes. These children form the second nationally agreed age group that require monitoring for dental disease. In total, 35,461 P7 children in 1,341 primary schools received a *Basic Inspection* and represent nearly 67% of P7 children attending mainstream local authority schools during the 2003/2004 school year (Table 6).

Table 6: Number of P7 children inspected by NHS Boards during school year 2003/2004

NHS Board	Total P7 children in Local Authority (LA) schools 2003/2004	No. of LA schools with one or more P7 classes	No. of LA Schools with P7 classes included in NDIP 2003/2004 inspections	No. of LA P7 children inspected	% of LA P7 children inspected
Argyll & Clyde	5,059	183	60	2,328	46.0
Ayrshire & Arran	4,712	144	130	3,922	83.0
Borders	1,408	68	68	1,332	94.6
Dumfries & Galloway	1,756	110	24	462	26.3
Fife	3,981	135	135	3,581	90.0
Forth Valley	2,997	108	108	2,712	90.4
Grampian	6,756	259	80	1,855	27.5
Greater Glasgow	9,963	284	242	7,681	77.1
Highland	2,788	178	97	1,469	53.0
Lanarkshire	not reported	not reported	0	0	-
Lothian	8,288	232	164	5,379	64.9
Orkney	262	16	11	163	62.2
Shetland	335	28	13	217	65.0
Tayside	4,662	171	171	4,027	86.0
Western Isles	340	38	38	333	97.9
Scotland (excluding Lanarkshire)	53,307	1,954	1,341	35,461	66.5

A range of logistical issues impacted upon the ability of several NHS Boards to deliver 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 some of the IT software programme. However, NHS Boards and Local Authorities in Scotland continue to work in partnership to improve the NDIP programme and it is anticipated that a greater coverage of both P1 and P7 classes will be possible during the 2005/2006 school year, in line with the expectations of the Scottish Executive.

While the required target is that all P1 and P7 children should receive a dental risk assessment, it is improbable that it will be possible to conduct a *Basic Inspection* 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.

Readers are advised that if more precise details of dental health are required at either a regional or national level, they should refer to the Detailed Inspection results recorded earlier in Part 1 of this Report

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

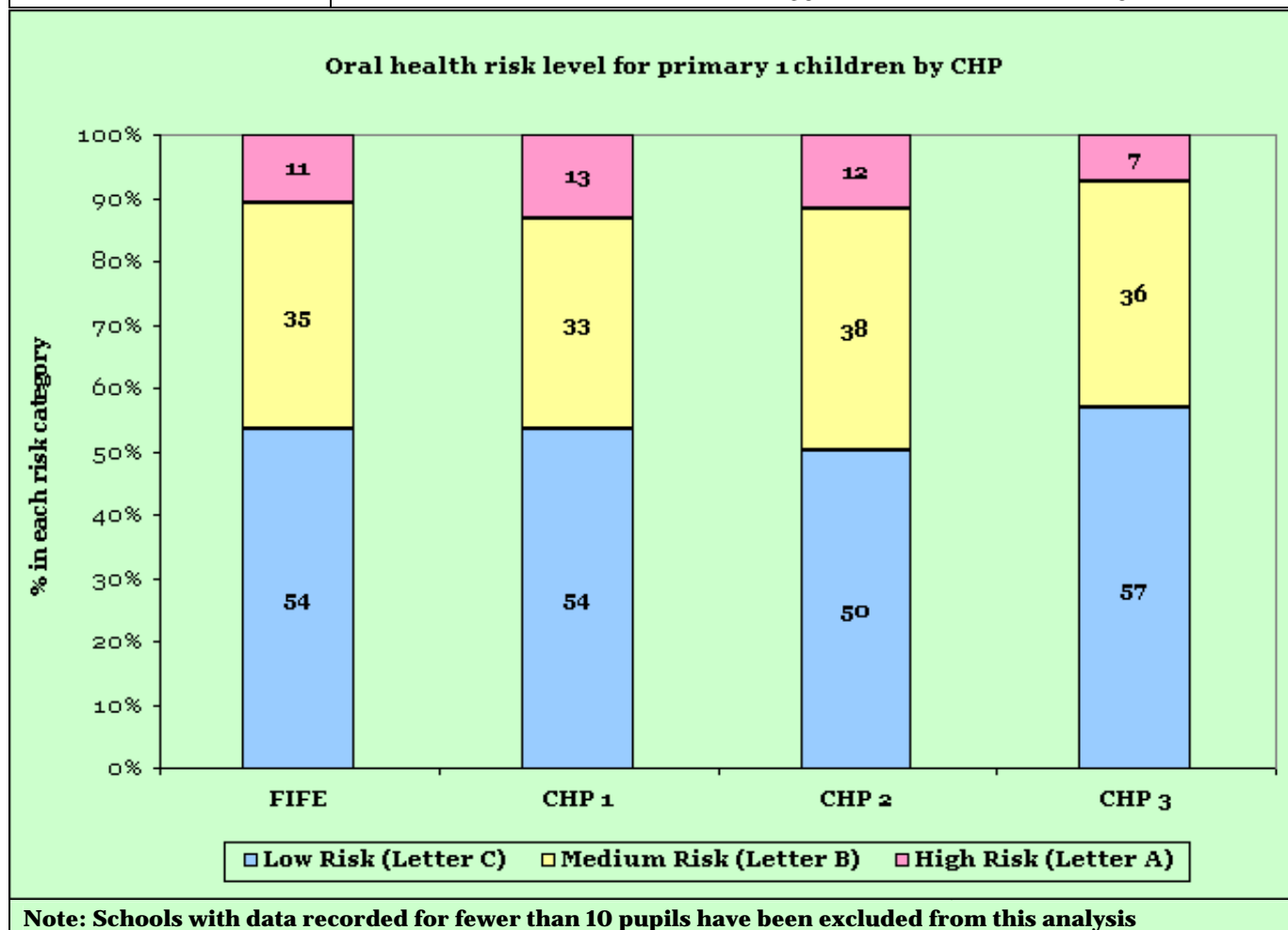
Information from the NDIP programme can be utilised at both NHS Board and at Community Health Partnership (CHP) level. These data can be useful in highlighting areas that require health promotion or dental services input and will be a useful monitoring tool over time. Local Authorities can also receive 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 Fife are illustrated in the following two tables and demonstrate the capacity of the NDIP methodology to reflect the oral health risk of school children at various levels of administration.

Table 7: Analysis of risk category letters issued by NHS Fife for each CHP area

Location	High Risk (Letter A)	Medium Risk (Letter B)	Low Risk (Letter C)
FIFE	294	955	1444
CHP1	143	354	572
CHP2	89	295	387
CHP3	62	306	485
Percentages (%)	High Risk (Letter A)	Medium Risk (Letter B)	Low Risk (Letter C)
FIFE	11	35	54
CHP 1	13	33	54
CHP 2	12	38	50
CHP 3	7	36	57



As can be seen, a variation in the level of oral health need exists across the three CHP areas present in the NHS Fife Board area. However, variations within a single CHP area may be even more marked and inspection results from more locally defined areas are useful when targeting resources to where they might have the greatest affect.

In order to illustrate this variation, the aggregated results from the *Basic Inspections* of the P1 children in each of the primary schools of Fife CHP 1 are set out in Table 8.

Table 8: Variation in risk category letters by primary school within Fife CHP 1

Primary School	Low Risk (n)	Medium Risk (n)	High Risk (n)
School 9	4	11	8
School 23	10	5	8
School 28	4	6	5
School 21	11	8	8
School 15	12	13	10
School 27	9	2	4
School 35	11	4	5
School 16	3	10	4
School 1	13	7	6
School 31	3	14	5
School 10	11	11	5
School 34	1	8	2
School 3	8	6	3
School 6	18	15	7
School 24	16	11	5
School 17	10	21	5
School 30	5	8	2
School 11	24	10	5
School 37	16	12	4
School 20	9	5	2
School 5	14	1	2
School 2	18	21	5
School 7	37	12	6
School 19	9	10	2
School 4	7	4	1
School 29	15	7	2
School 18	15	9	2
School 8	20	4	2
School 33	17	8	2
School 32	19	7	2
School 22	27	16	3
School 36	37	7	3
School 12	74	19	5
School 13	11	11	1
School 14	9	17	1
School 25	33	6	1
School 26	12	8	0
CHP 1	572	354	143
FIFE	1,444	955	294

Level of oral health risk for P1 children in Fife CHP1

% in each risk category

0% 25% 50% 75% 100%

■ Low Risk ■ Medium Risk ■ High Risk

(Note: Schools with data recorded for fewer than 10 pupils have been excluded from this analysis)

The variance in the distribution of the oral disease risk 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.



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