

The Other Side of the Coin

An appraisal of the factors influencing dental health statistics

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INTRODUCTION

About the author

I have researched water fluoridation, and fluoride-related issues, for 12-years (1991-2003). During this 12-year period I have witnessed a great deal of pro-fluoride propaganda and distortions of the truth. I have also witnessed the attitude of some pro-fluoride lobby members to the point where they have refused to hear any arguments against water fluoridation. As a consequence, it is difficult to demonstrate contradictory views to those of the pro-fluoride establishment when one has to fight against long-held prejudices, ignorance and apathy.

There is also the fact that many misleading remarks are made about water fluoridation. This in one way is understandable considering the volatility of the subject and the feelings of some outspoken critics to 'overreach' and make claims that do not stand up to scrutiny.

The purpose of this particular publication is not to make spurious claims about the negative aspects of water fluoridation, it is intended to educate the reader. The emphasis is almost entirely focused on the issues which influence dental health statistics - the author's speciality.

The only restriction I place on the content of this publication is the 'condensed' content. There is a very large amount of information and detail which could have been included, but time restrictions and other responsibilities mean that only the most salient points have been expressed. But the reader can remain assured that all the information provided is from official sources or otherwise is held on record by the author. There is also the intention to publish a more comprehensive analysis of dental health statistics at some point in the future (hopefully in 2004).

In conclusion, I hope that the reader will come to understand the myriad of crucial criteria which can directly impact on the state of dental health in different parts of the country, even if the relatively small amount of information contained in this publication seems overwhelming. This is because ignorance is no defence to any future decision-making on water fluoridation. The information contained within this publication must be given the most serious consideration and weighed against the limited propagandist materials of the pro-fluoride lobby.

C J Holdcroft

Proprietor and Webmaster.

BRIEF SUMMARY

Every year, the British Association for the Study of Community Dentistry (BASCD) publish data on decayed, missing and filled teeth (dmft).

These statistics are normally then formed into 'league tables' and used by organisations like the British Fluoridation Society (BFS) to help to promote water fluoridation. In 2003, it was the turn of the British Dental Association to publish its own league table with dmft rates given for Parliamentary constituencies.

The first lesson to be learned is that 'league tables' are both unscientific and misleading, as well as being frequently criticised.

Therefore the purpose of this study is to look at the factors which are omitted from league tables and to help the reader better understand what is happening 'in the background'.

To summarise the content of this study, a number of observations are now made:

1 There are strong regional variations in tooth decay rates which are NOT explained by either the absence or presence of fluoridated water. Even the provision of NHS dentistry is not seen to have a significant impact. The only conclusion is that 'cultural' differences between different regions of the country are responsible for attitudes towards dental health.

2 Deprivation and affluence. There is a common misconception that (for example) areas such as Birmingham suffer from high levels of deprivation. This may be true when assessing such factors based on local government boundaries, but health authority boundaries can reach much further. As a consequence, parts of the Birmingham health authority area also take in very affluent parts of the West Midlands where tooth decay rates are almost automatically expected to be lower than those which occur in the most deprived parts of the city. Furthermore, comparing extremely deprived parts of London with Birmingham (also bearing in mind the comments made in point 1), are likely to lead in grossly misleading comparisons.

3 There is no good evidence that water fluoridation reduces tooth decay. This was confirmed by the scientific review of water fluoridation conducted by the NHS/CRD unit at York University between 1999 and 2000. However, this has not stopped certain pro-fluoride professional organisations from deliberately misrepresenting the findings of the review.

4 Point 3 is supported by evidence contained within this study. It can be clearly demonstrated that many factors can affect dental health statistics but are always withheld or not used by the pro-fluoride lobby. Access to NHS dentistry, capitation rates, cost, community support and other facts are provided in this study to better educate the reader.

5 Children in some Inner London health authority areas can be shown to have a better standard of dental health than fluoridated areas based on data published by the BASCD.

6 New fluoridation schemes are likely to be supported by improved access to, or either, NHS dentistry and better community support. A change in treatments from curative to preventative are also likely to occur. All these factors can be employed at the outset of water fluoridation and administered on a regular basis to young children. The consequence of this approach is that measures other than water fluoridation will improve the standard of dental health.

This was 'discovered' in a Canadian study of the 1950s: "the recordings so far obtained indicate both a high treatment and an apparently better oral hygiene status of the Brantford (fluoridated) children when compared with the controls, and it is therefore suggested that caution should be exercised in the interpretation of the rates shown. The lack of a pre fluoridation survey on a comparable basis is a further limiting factor in interpreting the results." (Brown, H.K., 'Mass Control of Dental Caries by Fluoridation of a Public Water Supply', J. Canadian Dent. Ass., 18, 1952, pp.200-4).

7 Brown's observations (point 6) are supported in this document. It can be demonstrated that children in fluoridated districts are afforded more preventative measures than those who live in non-fluoridated districts.

8 There have been substantial increases in dental health expenditure in fluoridated Sandwell and Wolverhampton. Wolverhampton has been 100% fluoridated (from 32%) since 1997. Between the January 1997 to end of March 2002, GDS (NHS) treatment expenditure has increased by 112%. Perversely (and in a similar period of time), Liverpool, Manchester and West Pennine have seen a decline in NHS treatment expenditure (between 4% and 12%).

9 BASCD annual studies of dental health in the UK included teeth affected by dental fluorosis being counted as "present and sound". The critical paragraph from their publication: "diagnostic criteria for caries prevalence surveys - 1996/97"

Surface code 0 (or G) - Present and "sound"

A surface is recorded as "sound" if it shows no evidence of treatment or untreated clinical caries at the "caries into dentine" diagnostic threshold. The early stages of caries, as well as other similar conditions, are excluded. Thus, surfaces with the following defects (emphasis added), in the absence of other positive criteria, should be coded as present and "sound":

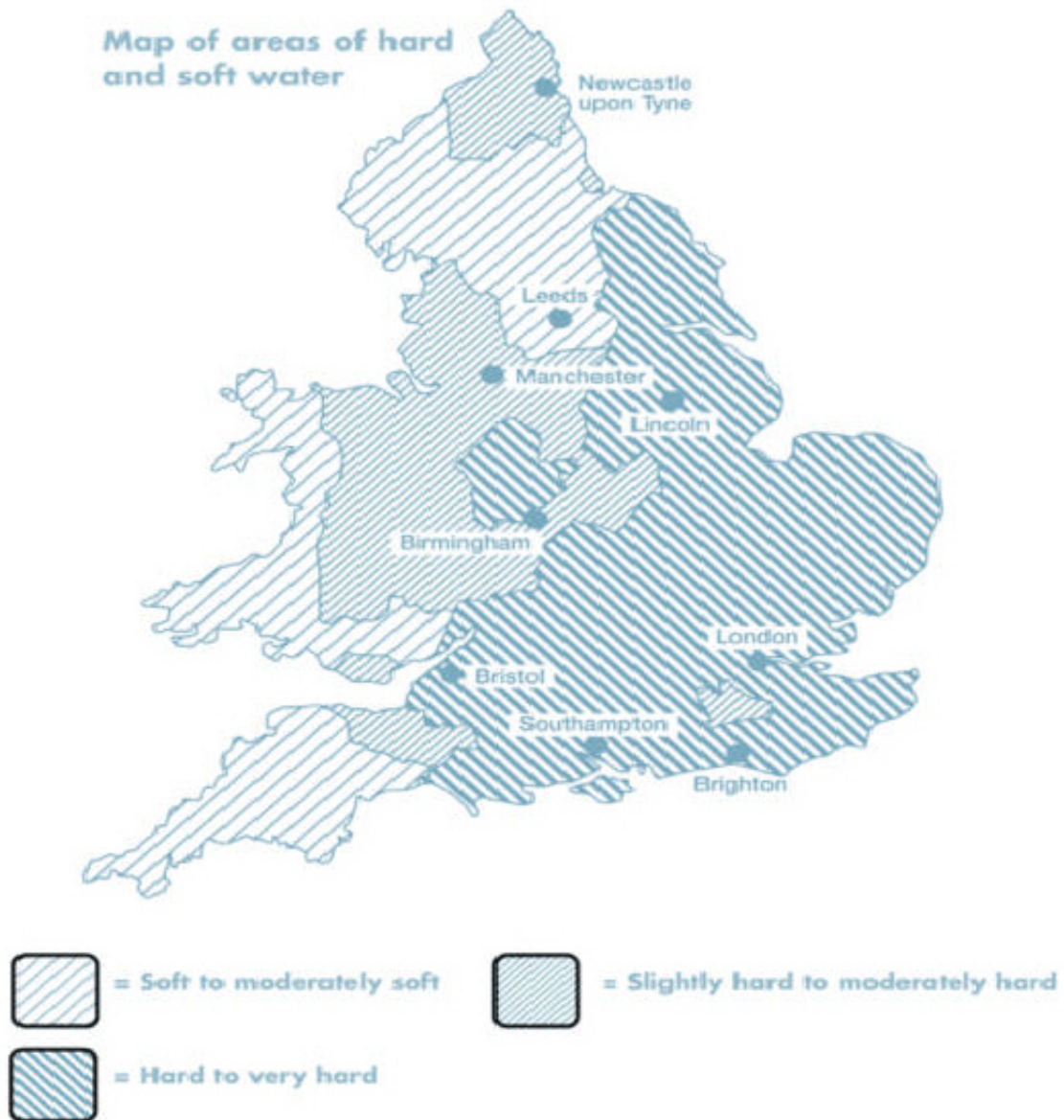
- * white or chalky spots; discoloured or rough spots;
- * stained pits or fissures in the enamel that are not associated with a carious lesion into dentine;
- * dark, shiny, hard, pitted areas of enamel in a tooth showing signs of moderate to severe fluorosis.
- * All questionable lesions should be coded as "sound".

Source:

www.dundee.ac.uk/dhsru/bascd/guide/cdh14s12.htm

'HARD' FACTS ABOUT 'HARD' TEETH?

Does hard water contribute towards healthier teeth? Extra calcium in hard water areas may



be a clue.

Source: " A Consumers' Guide to Water Softeners " - copyright British Water

Map can be seen at: www.dwi.gov.uk/pubs/hardness/#4

SOURCE MATERIALS

The information used in this study have been obtained from the following sources:

- 1 The Department of Health who have kindly provided data on NHS, Community and Personal Dental Services.
- 2 The Dental Practice Board who have provided details on General Dental Services.
- 3 The British Association for the Study of Community Dentistry who conduct annual studies of dental health in the UK.
- 4 The British Fluoridation Society publication "One In a Million" (1990s).
- 5 The British Dental Association publication "Fluoride: the facts" (August 2003).
- 6 BBC Nature programme entitled 'Fluoride'. (circa 1990s).
- 7 The Ecologist magazine (Volume 16, No.6, 1986).
- 8 The 'Fluoride Free' campaign of Ireland.
- 9 Newspapers: The Sun, Daily Record, Sunday Mirror, The Guardian, The Telegraph, The Observer, Evening Times, Chicago Tribune (1993 to 2000).
- 10 A Systematic Review of Public Water Fluoridation (Marian McDonagh, et al), NHS Centre for Reviews and Dissemination, University of York (pub. 2000).

Apologies for any omissions.

There is more to water fluoridation than just fluoride and water

In August, 2003, the British Dental Association (BDA) published a short document entitled: "Fluoride - the facts". Unfortunately, the facts have been distorted to some extent.

One of the misrepresentations was the determination of levels of decayed, missing and filled teeth (dmft) for 5-year-old children in Parliamentary constituencies (and presented as a 'league table').

Rather than give the actual level of dmft for each constituency, the BDA used an average figure for each regional authority and applied it uniformly across the appropriate region's constituencies.

As an example, Birmingham was assessed to have 1.12 dmft. This is the average for all of Birmingham. It is therefore grossly misleading, and unethical, to say that the level of 1.12 dmft applies for each constituency [Table 1] within the Birmingham regional authority.

Table 1. Birmingham Constituencies.

Erdington	1.12	Edgbaston	1.12
Hall Green	1.12	Hodge Hill	1.12
Ladywood	1.12	Northfield	1.12
Perry Barr	1.12	Selly Oak	1.12
Sparkbrook & Small Heath	1.12	Yardley	1.12

What makes this matter worse is the diverse variations in deprivation within the region. And it is because of this diversity that significant fluctuations can be seen in levels of dmft.

For example, in 1995 (the last time dmft in Birmingham was measured in five different health authority areas) the dmft for 5-year-old children reported was as follows [Table 2];-

Table 2.

Birmingham Central	1.08
Birmingham North	0.71
Birmingham West	1.19
Birmingham East	1.46
Birmingham South	0.86

It can be seen that Birmingham East has at least twice as much dmft as Birmingham North.

Even at ward level tooth decay is rampant in this fluoridated city. In 2001, public health dental consultant Ross Hamburger said that 40% of five-year-olds in the ward (Birmingham Nechells) had "active dental decay". The ward consequently received a £57,000 "funding boost".

The conclusion is that the BDA have published a 'league table' which is of such poor quality, it is practically worthless. However, more information on the factors which affect dental health are at hand and are now published in this response to the BDA's document.

So what factors can effect the differing levels of dmft throughout the UK? Most supporters of water fluoridation will say that where there is fluoride in the water, than the level of dmft in that area will tend to be lower than where fluoride is below the 'optimum level' (1 part per million of fluoride to water - "1 ppm").

But other criteria need to be considered. Firstly, dental health statistics are not restricted to just 5-year-old children - although this is the age group which is almost exclusively used by supporters of water fluoridation for propaganda purposes.

Social deprivation, NHS expenditure, dental procedures (including preventative), community support, education and availability of dentists are some of the other points to consider when quantifying levels of dmft.

The first step is to measure levels of deprivation by Health Authority (HA) boundary. This was achieved to some degree in 1997 by * Jones CM, Taylor CO, Whittle JG, Evans D and Trotter DP (1997): "Water Fluoridation, tooth decay in 5 year olds, and social deprivation measured by the Jarman score: analysis of data from British dental surveys." Source: British Medical Journal 315, 514-517.

*Herein this will be referred to as the "Jones study".

Jarman scores are easy to interpret. A 'minus' score indicates a level of affluence and a 'plus' score indicates a level of deprivation. The score of '0' means that there is a balance between affluence and deprivation. For example Mid-Surrey, with a score of -29.09, is classified as very affluent and Tower Hamlets (score of 62.83), is classified as very deprived. The nearest areas to the score of zero are South East Kent with a score of 0.08 and West Cumbria (-0.03).

A further claim made by the Jones study was that Jarman scores could be used to predict the effect on dmft by drinking fluoridated water. The claim was that a 44% reduction in dmft could be achieved in an area with an average score (zero) with increments of 0.25% for each Jarman score point above zero (the opposite applies for minus scores). Consequently, an area with a Jarman score of +20 should attain an improvement in it's dmft score of 49% (44% plus 0.25% multiplied by 20). Conversely, an area with a score of -20 would only see an improvement of 39% (44% minus 0.25% multiplied by 20). These claims help to more accurately ascertain what impact fluoride would allegedly have on dmft, not that there is any good evidence that it does actually reduce tooth decay rates.

There are a large number of HAs in the UK, but rather than look at every part of the UK, it has been decided to select the most deprived areas in England and look in some detail a those factors which influence dental health.

This has not been an easy exercise, especially when examining different parts of London, especially as patients tend to visit dentists outside of their own HA area. Some HA boundaries have also changed on numerous occasions over the last 18 years and it is not realistic to give any consideration to such HAs and they are omitted accordingly. Conversely, where HAs have combined it is possible to measure changes in dmft levels. The areas chosen for examination are therefore as follows - with actual and estimated Jarman scores (Table 3);-

Table 3.

1. East London & the City est. 52.61 (Tower Hamlets 62.83, City & Hackney 51.89, Newham 45.29)
2. Manchester est. 48.04 (Central Manchester 58.24, North Manchester 56.65, South Manchester 34.70)
3. Lambeth, Southwark & Lewisham 44.51 (previously various titles)
4. Bradford 30.60
5. Liverpool 28.85
6. Birmingham est. 18.98 (Birmingham West 42.10, Birmingham Central 33.83, Birmingham East 33.78, Birmingham North -7.85, Birmingham South 10.83)
7. Newcastle & North Tyneside est. 18.61 (Newcastle 25.84, North Tyneside 8.20)
8. Wolverhampton 17.46
9. Sandwell 15.03
10. Enfield & Haringey est. 14.92 (Enfield 5.41, Haringey 26.75)
11. Bexley & Greenwich est. 14.78 (Bexley -0.14, Greenwich 30.18)
12. Gateshead & South Tyneside est. 12.04 (Gateshead 8.68, South Tyneside 16.51)
13. West Pennine est. 11.87 (Oldham 16.22, Tameside & Glossop 8.00)

Of the above, Birmingham, Newcastle, Wolverhampton, Sandwell, Gateshead, are 100% fluoridated and North Tyneside is 50% fluoridated. Table 4 gives the estimated fluoridation status of post-1995 HAs, and year of commencement.

Table 4.

Birmingham 100% (1964. North Birmingham was fully fluoridated in 1986)

Newcastle & North Tyneside est. 79% (1968)

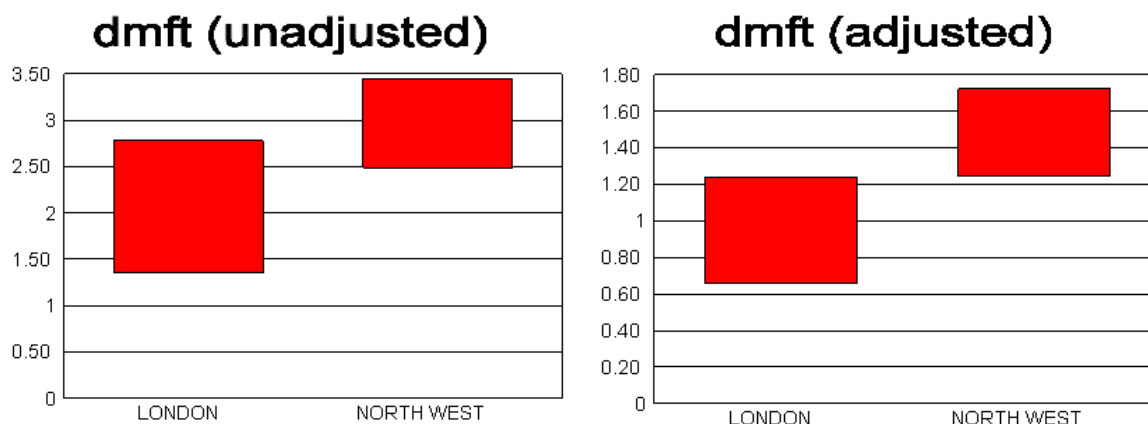
Wolverhampton 100% (32% in 1986 and 100% in 1997)

Sandwell 100% (1986)

Gateshead & South Tyneside est. 57% (1968)

Before proceeding further, it is necessary to also understand that strong regional variations in dental health exist. Such variations can be found throughout the UK. Consider the following charts based on areas which do NOT receive fluoridated water;-

Graphs 1 & 2. 5-y-o dmft 1993/4 (source: BASCD). Includes dmft adjusted for Jarman Score.



In Graph 1, the dmft scores for 1993-4 have been presented unadjusted (actual rates of dmft in most deprived areas of London and the North West). In Graph 2, dmft scores have been adjusted based on the assumption that drinking fluoridated water is successful at reducing tooth decay. Reductions have been calculated based on Jarman scores and in accordance with the Jones study recommendations. The areas chosen for this analysis are:

Table 5. Health Authorities at 1993/4.

District < 0.3ppm F	Region	Jarm.	Reduct.	dmft	adj.
Tower Hamlets	LONDON	62.83	59.71%	2.69	1.08
Central Manchester	NORTH WEST	58.24	58.56%	3.45	1.43
North Manchester	NORTH WEST	56.65	58.16%	3.36	1.41
City & Hackney	LONDON	51.89	56.97%	2.30	0.99
Bloomsbury	LONDON	45.29	55.32%	2.78	1.24
Newham	LONDON	45.29	55.32%	2.70	1.21
Lambeth, etc	LONDON	44.51	55.13%	1.63	0.73
South Manchester	NORTH WEST	34.70	52.68%	2.88	1.36
Greenwich	LONDON	30.18	51.55%	1.36	0.66
Liverpool	NORTH WEST	28.85	51.21%	2.55	1.24
Haringey	LONDON	26.75	50.69%	1.47	0.72
Parkside	LONDON	26.51	50.63%	2.19	1.08
Salford	NORTH WEST	23.27	49.82%	2.89	1.45
Riverside	LONDON	22.92	49.73%	2.02	1.02
Waltham Forest	LONDON	22.07	49.52%	2.16	1.09
Preston	NORTH WEST	21.13	49.28%	2.68	1.36
Hampstead	LONDON	20.54	49.14%	2.09	1.06
Oldham	NORTH WEST	16.22	48.06%	2.49	1.29
Ealing	LONDON	15.86	47.97%	2.35	1.22
Rochdale	NORTH WEST	15.54	47.89%	3.13	1.63
Burnley, Pendle etc	NORTH WEST	10.72	46.68%	3.23	1.72
Blackburn, Hyndburn etc.	NORTH WEST	10.09	46.52%	3.06	1.64

NB. All these HA areas receive water where the fluoride content is less than 0.3 ppm (British Fluoridation Society data taken from their publication: "One In A Million").

It can clearly be determined that even in non-fluoridated areas, there are strong variations in dmft rates. The question is though, why should there be such striking differences in dmft rates in similarly deprived areas in different parts of the country.

Half of (next to) nothing

Before looking in detail at factors which influence dental health outside of water fluoridation, it is necessary to understand exactly how much an average 44% reduction in dmft is really worth

One reason that such large percentages are used by the fluoride lobby is because it helps to exaggerate the alleged benefits of water fluoridation.

Rather than use affluent HA areas not immediately targeted for water fluoridation, it would be more appropriate to see exactly what impact water fluoridation would allegedly have on the most deprived populations - the real intended targets.

Therefore, Table 6 (below) looks at the possible reduction in dmft in a more accurate way (the latest available data on dmft is for 5-year-old children for the years 2001-2). The 3 health authorities (see note) with the highest level of deprivation are cited as examples.

Note: Since the introduction of Primary Care Trusts (PCTs), health authority boundaries have changed. The data given in this report is based on health authority boundaries prior to the introduction of PCTs.

Table 6.

2001-2002	dmft	Sound Teeth	Total Teeth	Jarman Score	Reduction	Saved Teeth	Saved % Teeth
Manchester	2.67	16.60	19.27	48.04	56.01%	1.50	7.76%
E. London & the City	2.45	16.80	19.25	52.61	57.15%	1.40	7.27%
Lambeth, etc.	1.12	18.00	19.12	44.51	55.13%	0.62	3.23%

Explanation:

As well as dmft figures, it is also interesting to note the number of 'sound' teeth in each area. By adding the two figures together it should represent the average number of teeth per child (Total Teeth). However, when calculating reductions in tooth decay only the dmft score is adjusted.

We now arrive at the number of 'saved' teeth as given in the penultimate column (Saved Teeth). When considering the number of saved teeth in relation to the total number of teeth in the child's mouth a new figure is arrived at. The number of teeth 'saved' expressed as a percentage of total teeth is given in the last column (Saved % Teeth).

The conclusion is that while a saving of 50+% looks impressive when calculating reductions in dmft, it is only based on affected teeth. The new calculation presented in Table 6 puts the % reduction in dmft into a more realistic perspective.

Reality begins to bite

So far it has only been considered that water fluoridation is effective and that 'sound' teeth really are 'sound' teeth. But this is not the case and the following information highlights further how the fluoride lobby 'hide' certain facts about their definition of 'sound' teeth. In March, 1997, a supplement to the 14th volume of Community Dental Health (the BASCD journal) carried a paper entitled: "diagnostic criteria for caries prevalence surveys - 1996/97". Contained within this document is the BASCD's definition of 'sound' teeth, which is reprinted below;-

Surface code 0 (or G) - Present and "sound"

A surface is recorded as "sound" if it shows no evidence of treatment or untreated clinical caries at the "caries into dentine" diagnostic threshold. The early stages of caries, as well as other similar conditions, are excluded. Thus, surfaces with the following defects (emphasis added), in the absence of other positive criteria, should be coded as present and "sound":

- * white or chalky spots;
- * discoloured or rough spots;
- * stained pits or fissures in the enamel that are not associated with a carious lesion into dentine;
- * dark, shiny, hard, pitted areas of enamel in a tooth showing signs of moderate to severe fluorosis.
- * All questionable lesions should be coded as "sound".

Source: Diagnostic Criteria

Severe fluorosis



Some of the 'best teeth' in the country? It appears that teeth counted as being 'sound' in BASCD surveys are perhaps not desirable as the general public are led to believe. After all, what is the point in having teeth which have no dental decay if they are ravaged by fluorosis (aka 'dental fluorosis'). It gets worse ...



In the year 1999, the NHS sponsored "A Systematic Review of Public Water Fluoridation". The Review was conducted at the NHS Centre for Reviews and Dissemination, University of York.

NB. This is the same Review which branded dental health league tables (as used recently by the BDA and shown on page 7 of this document) as being unscientific.

In 2000, the much *criticised Review published it's findings. The most controversial finding was probably that of the incidence of dental fluorosis. It was calculated that 48% of children living in areas where the water was fluoridated (at 1 ppm) would develop dental fluorosis. *Much important evidence was omitted.

48% is a very high figure. The next question to be asked was how much of this condition would be considered to be of "aesthetic concern". (NB. Dental fluorosis is not just a question of cosmetic appearance, it is an indicator of fluoride poisoning).

Another 'tactic' was employed to reduce the impact of cosmetic appearance. It is well known that children in Manchester have some of the worst levels of tooth decay in the country. Decayed teeth are ugly and in comparison, mild to moderately fluorosed teeth may not appear as such a bad alternative, at least to children in Manchester. But this is where the 'tactic' comes in ...

In the 1990s, a study involved the use of 14-year-old children in Manchester (Hawley, 1996). They were shown pictures of dental fluorosis classified using the 'T & F index' and asked to rate the appearance of each as either very poor, poor, acceptable, good or very good. Using this experiment as a basis for their calculations, the Review body calculated that 12.5% of all fluorosis would be of "aesthetic concern".

However, if children from affluent families living in Surrey (for example) were shown the same images, their reaction to the appearance of dental fluorosis would have been more marked. Hence, children with some of the worst tooth decay in the UK were used to grade the "aesthetic appearance" of dental fluorosis. Hardly scientific, or fair, but in keeping with the fluoride lobby's attempt to 'downplay' the affect of dental fluorosis.

Now that it is understood that sound teeth are not what they may appear to be in dental health surveys, it is time to consider other information which conflicts with the fluoride lobby's simplistic and unscientific claims.

The true cost of water fluoridation?

The most repeated claim of the fluoride lobby is that water fluoridation is a cheap procedure and the cost of fixing number of teeth saved easily outweighs any costs involved in fluoridating water supplies. But it has already been seen that 12.5% of children in fluoridated areas will have dental fluorosis of "aesthetic concern" and a significant proportion of these children will want to have their condition treated. The cost of treating fluorosed teeth is prohibitively expensive and an ongoing procedure as treatments to 'rectify' the condition are not lasting. And at age 18 they become adults and are responsible for the cost of treatment.

Parliament seem hell-bent on extending fluoridation to reach a further 13 million people (commonly reported). Of this 13 million people, many millions, over the course of future years, will develop dental fluorosis. The cost to the most affected victims is incalculable. And let us not forget that all these ruined *permanent teeth will be counted as "present and sound" in future dmft studies and pro-fluoridation politicians whose constituencies receive fluoridated water will no doubt boast that the children they represent will "have the some of the best teeth in the UK".

*Dental fluorosis is a condition associated with permanent teeth. 5-year-olds will not normally display signs of fluorosis. At age 6, when the second set of teeth begin to show, then so will the signs of fluorosis, a condition which will blight some for the rest of their lives. This is yet another reason why the pro-fluoride lobby likes to show pictures of 5-year-olds (and younger) in propagandist promotional materials.

Sound, sealed and 'slipping'.

Whenever the fluoride lobby talks about rotten teeth, it invariably involves the use of dmft in 5-year-old children. However, the BASCD also examines teeth in children aged 12 and 14. These figures reveal some interesting facts. The latest published figures are used to make comparisons.

Table 7.

Health Authority	5YO dmft	2001-2002 Sound	12YO DMFT	2000-2001 Sound Seal.	14YO DMFT	1998-1999 Sound Sealed
Liverpool	2.30	17.4	1.21	24.49	0.55	2.05 24.91 0.66
Manchester	2.67	16.6	1.47	23.59	1.09	2.49 24.33 1.54
West Pennine	2.75	16.6	1.38	23.34	0.67	2.49 24.23 0.85
Bradford	2.81	16.5	1.34	23.32	0.77	2.26 23.89 0.82
Gateshead & S Tyneside	1.65	17.8	1.22	22.66	0.52	1.40 25.44 1.25
Newcastle & N Tyneside	1.39	18.1	0.84	22.42	1.02	1.52 25.54 1.41
Birmingham	1.12	18.3	0.52	24.56	0.43	1.20 25.59 0.50
Sandwell	0.92	18.6	0.94	23.75	0.39	1.18 25.38 0.59
Wolverhampton [see note]	0.94	18.5	0.88	23.31	0.55	1.55 25.27 1.13
Bexley & Greenwich	1.30	18.1	0.54	24.33	0.42	1.01 25.85 0.84
East London & the City	2.45	16.8	0.70	24.91	0.48	1.66 25.25 0.62
Enfield & Haringey	1.33	18.1	0.64	23.87	0.15	1.72 25.28 0.48
Lambeth, S'wark & Lewish.	1.12	18.0	0.51	24.76	0.44	1.00 25.53 0.46

Note: Until 1997, only 32% of the population of Wolverhampton received fluoridated water.

It should appear quite obvious to the reader that there appears to be little reason to add fluoride to some supplies in London. Bexley & Greenwich, and even more so Lambeth, Southwark & Lewisham, also seem to be managing quite well enough without this measure. The alleged effect of water fluoridation appears to be 'slipping' away.

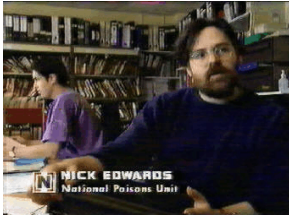
Fluoridated milk

The remaining clues include the use of fluoridated milk schemes and the provision of NHS and community dentistry. The issue of fluoride milk is an interesting one, mostly because the suggestion of adding fluoride to milk occurred about half a century ago, long before the Borrow Milk Foundation took up the idea. The original idea, from the USA, was to add fluoride to milk to increase the absorption of calcium, it was nothing to do with increasing fluoride intake. Further information on the subject of adding fluoride to milk will be addressed at a later date.

Safe to swallow?

Before proceeding, there is one issue that must be addressed. This is the attitude of some dentists who are quite literally brainwashed into thinking that fluoride is some kind of panacea. Challenges to the deeply ingrained ideology of fluoride as a benefit to the community are usually met with astonishment and disbelief. Some dentists just cannot accept that some people have genuine well-founded concerns about the safety of fluoride. Here are some newspaper headlines from the last 10 years ...

The Sun 13th Oct 2000 Fluoride in tap water damaged my teeth
Daily Record 24th May 2000 Teething trouble for kids using fluoride
Sunday Mirror 28th Mar 1999 Why fluorides on the danger list
The Guardian 9th & 17th Jul 1998 Ministry of Not So Funny Walks
The Telegraph 25th Nov 1996 Colgate pay-out stirs up fluoride row
The Observer 22nd Sep 1996 Orange and Green unite to fight a yellowing peril
Evening Times 20th Sep 1994 Poisoned by fluoride
Chicago Tribune 17th Jul 1993 Fluoride blamed in 3 deaths



The National Poisons Unit. This organisation "regularly" answers questions on fluoride poisoning.

(From the 1990s BBC documentary, Fluoride).

More statistics

Other sources of information on dental health are available. Data from both the Dental Practice Board (DPB) and the Department of Health (DoH) are now considered.

It should be added at this point that education by the dental profession also counts for a great deal. Putting a child in a dentist's chair to perform routine procedures is not going to be as effective as educating both the child and parent on diet and dental health regimes. Nevertheless, all factors will be considered on the remaining pages of this document.

DPB

Although it covers a wide range of treatments, one interesting statistic is the "Child item of Service" costs for each HA. Every three months the DPB gives details on how much each HA's dentists spends on treatments. The figures presented below show populations and how much was spent over a 12-month period ending March of each of two years beginning with the quarter of June 1997 (1st quarter of the year ending March 1998) and ending in March 2002.

Table 8. Populations (under 18-year-old).

Health Authority	1998	2002
England	11260050	11279574
Bradford	127643	125803
Gateshead & S Tyne.	80922	77467
Liverpool	112094	106480
Manchester	113070	111176
Newcastle & N Tyne.	104842	99153
West Pennine	117626	114842
Birmingham	263776	260019
Sandwell	70768	69890
Wolverhampton	59925	58342
Enfield and Haringey	111261	189872
Barnet (see note)	71862	
Bexley and Greenwich	104999	168334
Bromley (see note)	62205	
East London & The City	170477	175154
Lambeth, etc.	174909	178701

Note: In 2002, HAs given as [1] Barnet, Enfield & Haringey and [2] Bexley, Bromley & Greenwich.

Table 9. Expenditure (under 18-year-old).

English Health Auth.	1998	2002	98-02 £ Incr.	% Incr.
ENGLAND	£39,072,807.12	£50,389,764.94	£11,316,957.82	28.96
Bradford	£267,239.70	£311,455.24	£44,215.54	16.55
Gatesh'd & S Tyne.	£170,371.18	£196,649.75	£26,278.57	15.42
Liverpool	£509,131.05	£456,689.05	-£52,442.00	-10.30
Manchester	£339,885.62	£325,862.01	-£14,023.61	-4.13
N'castle & N Tyne.	£305,089.48	£362,900.37	£57,810.89	18.95
West Pennine	£524,228.57	£462,501.42	-£61,727.15	-11.77
Birmingham	£906,322.13	£1,077,458.20	£171,136.07	18.88
Sandwell	£177,345.13	£337,894.01	£160,548.88	90.53
Wolverhampton	£126,919.62	£217,660.74	£90,741.12	71.49
Enfield & Haringey	£642,328.68	£1,590,778.41	£409,539.90	34.67
Barnet	£538,909.83			
Bexley & Greenwich	£436,945.35	£904,786.99	£144,195.19	18.96
Bromley	£323,646.45			
E London & The City	£567,904.74	£690,264.00	£122,359.26	21.55
Lambeth, S'k & Lew.	£566,130.45	£593,703.96	£27,573.51	4.87

Two of the statistics that stand out are those which show that Sandwell and Wolverhampton (both 100% fluoridated) are experiencing a dramatic increase in NHS expenditure. Sandwell, with only a little over half the population of Bradford, is spending more on NHS dentistry and the difference in increase between 1998 and 2002 is almost four-fold. In Liverpool, Manchester and West Pennine, expenditure has actually gone down! So where is the money spent? Dentistry is not just about cleaning, polishing, filling and pulling teeth. Tables 10 and 11 give further clues.

Table 10. Distribution (%) of child item of service claims in each treatment type (Mar. 2002).

Key to procedures:

Type 1 Intricate work - Case assessment, surgical periodontal, veneers, inlays, crowns, bridges, orthodontic appliances, obturators

Type 2 More than routine work - Non surgical periodontal, endodontics, surgical removals, root canal & pulp extirpation, temporary bridges, temporary crowns

Type 3 Dentures - Dentures (including incomplete)

Type 4 Routine work - Two visit periodontal, fillings, extractions, post-operative care, general anaesthetic, pre-operative scaling, domiciliary visits, recalled attendance, acute condition, dressings, abscess, relative analgesia

Type 5 Repairs, refixing - Repairs, refixing, recementing: inlays, crowns, bridges, dentures & obturators, orthodontic study models

Type 6 Miscellaneous - Pathological/bacteriological examination, stoning, sensitive cementum, occlusal equilibration, prescription, referral, other treatment

Type 7 No dental intervention - Examination, simple scaling, x-ray, transfer, fissure sealant, topical fluoride

English Health Authorities	T1	T2	T3	T4	T5	T6	T7	No. claims
Bradford	4.2	3.6	0.1	47.1	2.9	0.2	41.9	12,633
Gateshead & S Tyneside	3.2	2.8	0.1	47.0	1.3	0.3	45.2	10,194
Liverpool	12.7	4.1	0.1	56.1	4.1	0.5	22.4	11,376
Manchester	6.7	4.9	0.1	58.7	2.2	0.4	26.9	9,986
Newcastle & N Tyneside	6.9	1.7	0.1	39.9	1.9	0.1	49.4	12,705
West Pennine	7.8	6.4	0.1	51.1	4.1	0.4	30.2	12,908
Birmingham	8.6	1.8	0.1	37.6	7.4	0.3	44.4	27,376
Sandwell	6.5	2.9	0.0	38.7	7.3	0.9	43.8	8,345
Wolverhampton	5.6	1.6	0.1	36.7	3.9	0.2	51.9	7,036
Barnet, Enfield & Haringey	14.4	4.8	0.0	37.0	9.2	0.6	34.1	22,831
Bexley, Bromley & Gr'nwich	11.4	3.2	0.0	44.6	5.7	0.3	34.8	19,704
East London & The City	10.6	9.1	0.1	54.4	7.3	0.3	18.1	11,192
Lambeth, S'thwark & Lewis.	9.1	5.2	0.1	59.9	4.0	0.4	21.4	11,956
England	9.2	3.0	0.1	44.5	5.5	0.3	37.5	1,251,781

Treatment types 1, 5 and 7 are highlighted for specific reasons. Type 1 and 5 treatments involve intricate work, repairs and refixing. These procedures will generate larger sums of money than procedures for simply filling and extracting teeth. With the exception of Liverpool, and Birmingham for Type 5 treatments, the HAs in this table which carry out these treatments are predominantly situated in London.

Conversely, Type 7 treatments are an indicator of how dentists try to prevent dental disease with fissure sealant and topical fluoride especially highlighted. The table is dominated by HA's whose populations receive fluoridated water (when calculating for number of actual treatments compared directly to patient registration numbers, or approximately to population size).

So why do children in fluoridated areas receive more preventative measures than non-fluoridated areas? The answer is, perhaps, self-explanatory and it shows how measures other than water fluoridation can be used to improve dental health. The fact that these measures are conducted largely in fluoridated areas is hugely suspicious.

Table 11. Distribution (%) of child item of service claims in cost bands (March 2002).

English. Health Auth.	Under £25	£25-£50	£50-£100	£100-£200	£200-£300	£300+	Number claims
Bradford	79	13.9	4.4	1.6	0.2	0.8	13,758
Gateshead & S Tyneside	81.6	11.8	4.2	1.9	0.3	0.2	10,872
Liverpool	69.8	16.7	6.1	4.3	1.1	1.9	12,796
Manchester	69.8	18.4	6.9	3.1	0.5	1.3	11,066
Newcastle & N Tyneside	78.5	12.8	4.5	2.2	0.4	1.7	13,521
West Pennine	70	16.4	6.6	3.9	1.2	1.8	13,771
Birmingham	73.8	15.9	5.3	2.3	0.6	2.2	29,471
Sandwell	72.2	15.5	7.7	2.4	0.4	1.8	9,129
Wolverhampton	82.7	11	3	1.4	0.3	1.6	8,633
Barnet, Enfield & Haringey	61.2	22	7.4	3.3	1.1	5	25,142
Bexley, Brom. & Greenwich	71.1	15.4	6.4	4.1	0.6	2.4	24,049
East London & The City	56.7	22.2	10.4	6.4	1.2	3.2	12,881
Lambeth, S'wark & Lewis.	64.6	17.9	9.1	4.5	0.9	2.9	13,335
England	73.7	15.1	6	2.4	0.4	2.4	1,417,899

Table 11 emphasises why, for example, Barnet, Enfield & Haringey spends so much money on NHS treatments. It is also this HA which employs the most dentists in general service of the four London HAs considered in this report. Capitation rates for under-18-year-olds are also high (see table 15) and it is quite possible that this HA is attracting patients from neighbouring authorities. Further investigation is desired though it is only the appropriate regulating authorities which can deliver any detailed answers.

Table 12 (below) now looks at the actual number of teeth extracted and filled, plus related treatments. Again, the table makes for interesting reading.

Table 12. HA rates per 100 child item of service claims for 7 selected treatments (Mar. 2002).

Key [NB. Not directly related to the key for Table 10. This Table looks at specific procedures]:

[1] Some small x-rays, [2] Scaling and Polishing, [3] 2+ periodontal visits, [4] Teeth filled, [5] Teeth root fillings, [6] Crowns / Inlays, [7] Extractions. [8] No. of claims. Act. = Actual number, Claims = Number of Claims.

NB. Due to the large amount of data across this table, Health Authorities and some data has been abbreviated. Key to abbreviated Health Authorities:

Br = Bradford; G&ST = Gateshead & South Tyneside; Liv = Liverpool; Man =Manchester; N&NT = Newcastle & North Tyneside; WP = West Pennine; Birm = Birmingham; San = Sandwell; Wol = Wolverhampton; B,E&H = Barnet, Enfield & Haringey; B,B&G = Bexley, Bromley & Greenwich; EL&C = East London & The City; L,S&L = Lambeth, Southwark & Lewisham; Eng = England

In Table 10, it was suggested that fluoridated areas benefitted from preventative measures above those afforded to non-fluoridated areas.

Table 12 indicates that the Type 7 treatments, x-rays and simple scaling do not appear to be more widely used in fluoridated areas. This gives further weight to the theory that fissure sealants and fluoride treatments are the most likely components used in this category.

It is also of interest that rate of extractions in fluoridated Birmingham closely match that of Manchester (based on population size).

Eng	HAs	[1]	Act.	[2]	Act.	[3]	Act.	[4]	Act.	[5]	Act.	[6]	Act.	[7]	Act.	Claims
Br	2.1	267	0.1	12	0.0	1	92.3	11,661	4.1	516	0.5	57	17	2,172	12,633	
G&ST	2.1	213	0.1	7	0.0	1	101.7	10,371	3.0	301	0.4	43	14	1,455	10,194	
Liv	2.6	301	0.0	2	0.0	0	105.6	12,013	2.6	296	1.3	149	22	2,490	11,376	
Man	3.0	299	0.4	43	0.0	2	140.4	14,022	5.0	497	1.6	159	21	2,078	9,986	
N&NT	2.8	356	0.1	17	0.0	0	93.6	11,892	1.7	219	0.4	57	12	1,488	12,705	
WP	3.5	447	0.2	23	0.0	6	110.2	14,224	5.6	729	1.1	141	24	3,075	12,908	
Birm	3.0	809	0.1	17	0.0	7	65.4	17,909	1.8	498	1.2	338	17	4,694	27,376	
San	3.0	252	0.5	45	0.1	5	87.6	7,309	2.4	201	0.7	58	18	1,498	8,345	
Wol	1.6	113	0.1	7	0.0	1	68.1	4,794	1.7	117	0.5	38	14	947	7,036	
B,E&H	5.0	1,149	0.2	40	0.0	9	89.3	20,389	5.6	1,271	0.4	86	17	3,821	22,831	
B,B&G	2.9	574	0.6	116	0.0	6	97.7	19,254	2.4	476	0.3	60	19	3,662	19,704	
EL&C	3.8	422	1.8	196	0.0	3	173.2	19,382	10.4	1,161	1.3	142	30	3,383	11,192	
L,S&L	3.0	357	0.2	19	0.1	11	173.8	20,780	5.5	656	2.6	308	19	2,236	11,956	
Eng	2.6	32,867	0.2	2,595	0.0	228	90.1	e1.13m	2.9	36,010	0.5	6,606	18	222,265	e1.25m	

*England. Actual totals are: [4] 1,127,762 and Claims 1,251,781.

Patients and Dentists

The most publicised criticism of the Government in recent years is the lack of NHS dentists in certain parts of the country. Dentistry falls into three general areas. There are GDS dentists (NHS public practices), CDS dentists (Community Dental Services) and Personal Dental Services (some HAs have abandoned community services and taken up this practice). Capitations are simply a reference to the number of child patients registered with a GDS dentist.

Furthermore, NHS dentists can work in a number of various capacities. They may be found in hospitals, providing visits to schools, etc.

Trying to establish a picture of the availability of NHS dentistry through these various sources is not an easy task. However, a basic picture of NHS dentistry for each of the chosen 13 HAs will be given.

The first most obvious question is: how many dentists practice in each HA? Table 13 gives details (at September 30th, 2001) of GDS (as a separate component) and the total number of NHS dentists.

Table 13. Number of GDS / NHS dentists per 10,000 population at 30 Sept., 2001.

HEALTH AUTHORITY	GDS sched or reg [1]	GDS Per 10k [2]	NHS Per 10k [3,4]	PDS total 2001 [5]	PDS total 2002 [5]
ENGLAND	18577	3.7	4.6	472	891
Bradford	156	3.0	3.9	0	17
Gateshead and S Tyneside	143	3.6	3.9	n/a	n/a
Liverpool	160	3.4	5.8	15	29
Manchester	195	3.9	8.5	2	3
Newcastle and N Tyneside	174	3.7	6.2	0	6
West Pennine	169	3.2	3.7	1	1
Birmingham	334	3.2	5.3	33	43
Sandwell	107	3.2	4.1	0	3
Wolverhampton	71	3.0	4.1	6	6
Barnet, Enfield & Haringey	429	4.5	5.2	0	4
Bexley, Bromley & Green.	301	4.0	4.6	7	7
East London & The City	213	3.2	4.8	1	1
Lambeth, S'thw'k & Lewis.	289	3.6	6.2	35	26

Sources:

[1] DPB figures

[2] Answer to Parliamentary question, 4th July, 2002.

[3] NHS dentist includes dentists working in the General Dental Service, Personal Dental Service, Hospital Dental Service, Community Dental Service and Salaried dentists.

[4] ONS estimates

[5] Answer to Parliamentary question, 13th June, 2002.

Table 14 [1st part]. Children screened by Community Dental Services - 2001/2002.

HEALTH AUTHORITY	Number Screened		Total episodes of care	
	Under 5	5 to15	Under 5	5 to15
ENGLAND	151,422	1588419	59,231	392291
BARNET, ENFIELD AND HARINGEY HA	11422	64580	822	7192
BEXLEY, BROMLEY AND GREENWICH HA	3999	39918	1649	8995
BIRMINGHAM HA	PDS	PDS	PDS	PDS
* BIRMINGHAM HA [2000-2001]	7062	77026	n/a	n/a
BRADFORD HA	3361	24845	2177	10583
EAST LONDON AND THE CITY HA	7954	42030	884	7373
GATESHEAD AND SOUTH TYNESIDE HA	1440	11316	311	2089
LAMBETH, SOUTHWARK AND LEWIS. HA	8855	58884	1165	6023
LIVERPOOL HA	2618	20630	914	5296
MANCHESTER HA	782	12456	2732	10062
NEWCASTLE & NORTH TYNESIDE HA	1210	8718	667	4871
SANDWELL HA	3081	15295	422	5971
WEST PENNINE HA	3598	38670	947	4885
WOLVERHAMPTON HA	3001	12026	730	4514

Note: Total episodes of care include numerous different treatments.

Table 14 [2nd part]. Community Dental Service: Number of hours worked by activity type - 2001/2002

HEALTH AUTHORITY	By DOs on Screening	On Oral Health Promotion	On Treatment
ENGLAND	53389	265487	962212
BARNET, ENFIELD AND HARINGEY HA	1628	3805	16969
BEXLEY, BROMLEY AND GREENWICH HA	5570	7665	28429
BIRMINGHAM HA	PDS	PDS	PDS
* BIRMINGHAM HA [2000-2001]	N/A	N/A	N/A
BRADFORD HA	491	3013	16462
EAST LONDON AND THE CITY HA	962	6135	16572
GATESHEAD AND SOUTH TYNESIDE HA	326	2289	8458
LAMBETH, SOUTHWARK AND LEWIS. HA	4295	5263	28983
LIVERPOOL HA	645	12856	2555
MANCHESTER HA	276	1701	10401
NEWCASTLE & NORTH TYNESIDE HA	246	3789	8855
SANDWELL HA	328	2065	13960
WEST PENNINE HA	1213	23037	33696
WOLVERHAMPTON HA	411	923	6688

*DOs - Dental Officers. *PDS - Personal Dental Services.

Table 15. Child capitations (patient numbers) and percentage of population take-up at March 2001.

	age 0-2		age 3-5		under-18	
	Number	%	Number	%	Number	%
Bradford	3,827	18	9,906	47	64,295	51
Gateshead & S Tyneside	2,990	26	8,248	67	53,048	68
Liverpool	4,092	25	9,632	57	64,628	60
Manchester	4,165	24	9,540	52	59,245	53
Newcastle & N Tyneside	3,492	23	9,971	62	62,685	62
West Pennine	7,090	39	12,041	65	75,620	65
Birmingham	6,440	15	20,219	46	134,227	51
Sandwell	1,906	16	5,649	49	35,836	51
Wolverhampton	1,333	14	4,654	48	32,083	55
Enfield and Haringey	2,888	13	10,767	51	66,538	58
Barnet	1,451	11	5,818	44	35,800	48
Bexley and Greenwich	3,065	17	9,960	57	62,778	60
Bromley	1,892	17	6,396	58	36,911	58
East London & The City	2,193	6	9,171	29	59,050	34
Lambeth, S'thw'k & Lewis.	3,505	10	12,442	38	73,642	41
England	375,504	21	1,113,649	60	6,956,925	62

A number of points can be raised about the information contained in Tables 13, 14 and 15, and mostly involving non-fluoridated districts, towns and cities. Despite being as well provided by the availability of dentists, the North Western cities of Liverpool and Manchester, and the West Pennine area, are not achieving the same results in low dmft figures as their counterpart in London. There are also some discrepancies concerning the amount of time spent in Liverpool and Manchester on either screening, educating or treating children, and these need to be addressed.

Supporting the argument for improving access to community dentistry in deprived areas is further supported by the low dmft rates achieved in Bexley, Bromley & Greenwich and Lambeth, Southwark & Lewisham. Fluoridated Birmingham is also well served by dentists and prior to moving to Personal Dental Services for the year 2001-2002, also screened a large number of children via the Community Dental Services facility.

However, with the exception of Birmingham (2000-2001), the fluoridated HA areas do not appear to screen many children - though in the instance of Gateshead & South Tyneside and Newcastle & North Tyneside, there is some evidence that young children are seen by a GDS dentist. This is shown in Table 15. The two HA areas which neither screen many children and do not have a significant capitation rate are Wolverhampton and Sandwell. This again could explain why dental health expenditure is rocketing in these authorities.

But perhaps the most striking example is how differences in 'cultural' factors can affect the incidence and prevalence of poor dental health. Genetic predispositions to tooth decay should also be considered in future studies. The salient point though is that it is never wise to compare simple dmft rates between areas which are geographically separated, even though it may only be by 100 miles or so. In fact, when comparing areas in dmft studies, it is critically important that they be virtual neighbours to at least ensure more impartiality. It is also important to consider the facilities available to children so that comparability can be ensured.

As a consequence of this theory, the pro-fluoride lobby should desist from comparing fluoridated areas of the West Midlands with non-fluoridated areas in the North West of England, or any other part of the country outside of the region (including London!).

C Holdcroft, 25th September, 2003.

DISCLAIMER

The information contained within this document is freely available and mostly in the public domain. Consequently, the author cannot accept responsibility for any errors that may have occurred in the data which has been provided by outside agencies. However, every effort has been taken to ensure that the data in this document is truthfully represented and is not intended to mislead the reader.

SPECIAL SUPPLEMENT: Wolverhampton

A special mention should be made of Wolverhampton HA. This is because the area is the only one to extend fluoridation in recent years. Previously, only 32% of Wolverhampton HA residents received fluoridated water, but in 1997 this was increased to 100% of the population. This presents the ideal opportunity to see what has happened since the full introduction of fluoridated water. The most striking observation has been the increase in expenditure:

Table SUPP1 [part 1].

	Pop.	Child item of service & wghtd. entry	claim forms	No. of claims
m97	59748	£102,719.61	5933	
j97	59748	£106,278.26	7346	
s97	59925	£112,557.23	6651	
d97	59925	£132,315.37	7458	7,528
m98	59925	£126,919.62	7112	7,173
j98	59925	£137,045.50	7450	7,518
s98	59925	£133,772.41	6790	6,833
d98	59471	£152,386.18	8069	8,205
m99	59471	£140,042.23	7379	7,437
j99	59471	£150,689.88	7849	7,904
s99	59144	£157,219.48	7679	7,750
d99	59144	£167,901.40	8483	8,538
m00	59144	£164,266.82	7840	7,894
j00	59144	£187,231.99	8834	8,879
s00	59144	£184,476.47	8321	8,371
d00	58752	£167,326.11	8476	8,526
m01	58752	£166,558.50	7544	7,582
j01	58752	£177,886.23	8652	8,724
s01	58342	£197,668.14	8498	8,546
d01	58342	£189,485.04	8192	8,242
m02	58342	£217,660.74	8577	8,633

Table SUPP1 [part 2].

	<£25	£25-£50	£50 -£100	£100-£200	£200-£300	£300+
m97						
j97						
s97						
d97	82.1	11.7	4.0	1.6	0.2	0.4
m98	81.4	11.8	4.6	1.6	0.2	0.3
j98	81.8	11.5	4.3	1.6	0.3	0.4
s98	82.3	10.9	4.0	1.7	0.4	0.6
d98	82.7	10.6	4.2	1.5	0.3	0.6
m99	84.1	9.9	3.5	1.4	0.4	0.6
j99	83.1	11.0	3.8	1.1	0.3	0.6
s99	83.0	10.7	3.6	1.6	0.4	0.7
d99	84.1	9.3	4.1	1.3	0.5	0.6
m00	83.2	9.9	4.1	1.4	0.4	0.9
j00	83.9	9.6	4.0	1.2	0.4	1.0
s00	84.0	9.5	3.6	1.5	0.3	1.1
d00	85.1	9.1	3.2	1.4	0.4	0.8
m01	84.5	8.6	4.2	1.3	0.3	1.1
j01	84.1	9.9	3.5	1.4	0.2	0.9
s01	82.7	10.6	3.5	1.7	0.4	1.1
d01	82.2	11.5	3.4	1.4	0.3	1.3
m02	82.7	11.0	3.0	1.4	0.3	1.6

In Table 9 it is shown that expenditure in Wolverhampton had increased by 71.49% since 1998. However the increase between March 97 (the year water fluoridation was fully implemented) and March 2002, expenditure has increased by a massive 112%!

Although part of this increase is due to more expensive procedures being undertaken, there are also significant changes in the number of claim forms for treatments and payments overall.

With regards to treatments, a number of distinct changes have occurred during this 5-year period. Community dental services have seen a significant drop in the number of children screened but there has been a substantial increase in the number of preventative procedures carried out by GDS dentists. There appears to have been a deliberate move to persuade GDS dentists to do more to protect children's teeth, thus negating the need for high numbers of children to depend on the CDS.

Table SUPP2.

	Type 7: no intervention		Teeth filled		Teeth extract		No. of claims
d97	38.2	2,329	104.1	6,350	23.8	1,451	6,099
m98	38.9	2,302	102.9	6,097	22.8	1,353	5,923
j98	41.3	2,583	96.0	6,000	20.5	1,284	6,250
s98	41.2	2,391	95.4	5,538	18.6	1,078	5,802
d98	43.2	2,892	88.7	5,943	20.7	1,384	6,699
m99	43.3	2,692	90.3	5,617	16.3	1,011	6,218
j99	43.9	2,827	92.6	5,958	15.0	967	6,434
s99	45.9	2,949	95.9	6,168	16.3	1,048	6,430
d99	48.9	3,481	92.8	6,602	15.4	1,098	7,113
m00	46.8	3,007	94.8	6,096	13.9	895	6,427
j00	48.7	3,545	86.9	6,324	14.2	1,033	7,276
s00	47.9	3,214	87.2	5,851	15.1	1,013	6,710
d00	49.9	3,322	86.0	5,725	14.7	979	6,657
m01	47.2	2,829	88.7	5,316	13.7	821	5,993
j01	49.4	3,463	80.0	5,614	13.6	954	7,015
s01	48.5	3,366	76.3	5,294	15.0	1,040	6,934
d01	48.8	3,225	73.4	4,847	14.5	956	6,606
m02	51.9	3,653	68.1	4,794	13.5	947	7,036

As the number of preventative measures has increased, so the number of teeth that need filling or extracting has come down. It is very plain to see that this approach will have had a dramatic effect of dmft rates for Wolverhampton. The only other table worth showing is the number of children who have registered with an NHS dentist and screened by the CDS.

Table SUPP3 [part 1].

	Pop.	age 0 to 2		age 3 to 5		under-18
		Number	%	Number	%	number %
m97	59748	1,144	11	4,440	41	27,411 46
j97	59748	1,221	12	4,883	45	30,531 51
s97	59925	1,252	13	4,920	46	31,771 53
d97	59925	1,339	14	5,115	48	33,715 56
m98	59925	1,325	13	4,647	43	30,977 52
j98	59925	1,415	14	4,624	43	31,483 53
s98	59925	1,419	14	4,566	43	30,975 52
d98	59471	1,513	16	4,841	46	32,777 55
m99	59471	1,494	16	4,813	46	32,260 54
j99	59471	1,469	15	4,855	46	32,516 55
s99	59144	1,459	15	4,794	48	32,362 55
d99	59144	1,455	15	4,752	48	32,473 55
m00	59144	1,450	15	4,739	48	32,504 55
j00	59144	1,394	15	4,751	48	32,631 55
s00	59144	1,397	15	4,781	48	32,485 55
d00	58752	1,359	15	4,749	49	32,477 55
m01	58752	1,333	14	4,654	48	32,083 55
j01	58752	1,322	14	4,661	48	32,071 55
s01	58342	1,298	14	4,619	49	32,026 55
d01	58342	1,280	14	4,537	48	31,472 54
m02	58342	1,248	14	4,563	48	31,570 54

Table SUPP3 [part 2].

Year ends:	CDS 0 TO 4	CDS 5 TO 15
m97	3337	26916
m98	3522	20576
m99	2882	19578
m00	2758	12730
m01	3056	12496
m02	3001	12026

While the age group 0-4 has seen a small drop in children screened, those age 5-15 have experienced the greatest cut-backs, mostly since the year ending March 2000. These cut-backs are not apparently compensated by the number of children now registered with a GDS dentist. So what effect has the reduction in CDS cover had on dmft rates? It is known that dmft rates for 5-year-olds has dropped quite significantly in successive surveys and 12-year-olds also have a relatively low rate of dmft. So is this due to water fluoridation or preventative measures?

NB. It must be remembered that Wolverhampton was 32% fluoridated in 1996 and 100% fluoridation did not occur until 1997.

Table SUPP4. Wolverhampton. (NB. Snd = Sound teeth, Sld = Sealed teeth).

Age

5

1985	1987	1989	1991	1993	1995	1997 Snd	1999	Snd	2001	Snd	
2.37	2.07	2.06	1.46	1.78	1.41	1.42	17.98	1.20	18.18	0.94	18.50

12

88	92	96	Snd	Sld	2000	Snd	Sld
1.58	1.25	0.9	23.65	0.85	0.88	23.31	0.55

14

86	90	94	Snd	98	Snd	Sld
n/a	2.1	1.72	24.84	1.55	25.27	1.13

Wolverhampton's 5-year-old dmft has dropped by 1.43 between 1995 and 2001. However, Sheffield has also seen an improvement of 0.76. 12-year-old figures show drops of 0.7 and 1.16 respectively (between 1988 and 2000). 14-year-olds, 0.55 and 1.31 (between 1990 and 1998).

So what do we determine from these results. Wolverhampton's 5-year-olds have seen more improvement than Sheffield, but for 12 and 14-year-olds the situation is reversed. Interestingly though, up to 1999, it is Sheffield's 5-year-olds who showed a greater drop in dmft compared to their counterparts in Wolverhampton.

As for support in Sheffield, there has been an increase in GDS dentists but the drop in CDS screenings has been very dramatic, even more so than seen in Wolverhampton.

Table SUPP6. Sheffield CDS screenings.

CDS		
Year	age 0-4	age 5-15
1997	3703	47548
1998	4617	48900
1999	4081	42447
2000	1555	30532
2001	680	16844
2002	737	17554

All-in-all, despite the increase number of dentists in Sheffield, there has been little change in child patients seeing a GDS dentist. Sheffield GDS dentists do see a much higher proportion of children than Wolverhampton and at March 2002, there was a big difference in capitations with 34% and 68% of age groups 0-2 and 3-5 in Sheffield compared to 14% and 48% in Wolverhampton.

The conclusion must be that there is no evidence, based on this small study, that fluoridation has had any real impact on tooth decay in Wolverhampton. It also appears that the dramatic drop in CDS support in Sheffield may be responsible for the marginally inferior drop in 5-year-old dmft.

Where Sheffield seems to benefit, and this shows in generally superior dmft improvements, is access to a GDS dentist (as seen in London). This must be the highest priority for the Government. And as well as improving access to NHS dentistry, there must also be a big improvement in attitudes to diet and oral hygiene in those parts of the UK where there appears to be an all-round failure to improve dental health.

FINAL REMARKS

This 'pdf' version of The Other Side of the Coin has been modified to correct any reference to page numbers.

In some circumstance, some of the Tables which appear in this publication have also been rearranged for the sake of clarity.

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