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NW HealthBulletin

Delivering Public Health Intelligence to the North West

Smile Please

INSIDE THIS ISSUE

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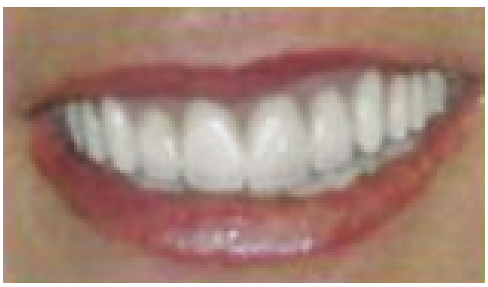
Introduction

Our approach to oral health, like many other issues, is a curious mixture of fact and fiction, of experience and myth. It draws on assumptions and stereotypes which may have their origins in the distant past, while trying to incorporate new developments, new claims, new experiences from the present.

As with any aspect of health promotion the question of how to address this complexity and achieve desirable outcomes is a vexed one. Oral health, with its baggage of negative stereotyping of dental professionals, anecdotes of awful treatment experiences, and blurred boundaries between public and private provision, poses more than its fair share of awkward questions.

This bulletin will highlight a number of current key issues which relate to oral health within which many aspects of this complexity and controversy are apparent. The intentions are to ask questions and to prompt discussion, as much as to inform.

Smile Please!



After a handshake, a friendly smile is perhaps one of the most important elements in creating a good first impression. A 1998 Survey by the American Academy of Cosmetic Dentistry showed that more than 92% of adults agree that an attractive smile is an important social asset, 85% believe that an unattractive smile makes a person less appealing to the opposite sex, 75% believe that an unattractive smile can be detrimental to a person's chances of career success and half of the respondents see unattractive teeth as a sign of poor personal hygiene[1]. The findings of the survey suggested that people with unattractive smiles are more likely to experience social and employment discrimination.

In the UK we are familiar with a North American stereotype of the gleaming smile, exemplified, for a certain generation by the Osmonds pop group. Perfect smiles are associated in our minds with Hollywood stardom, but cosmetic dental work is increasingly seen among top British stars of the film and music industries. It may be easy to dismiss this approach as vanity, with little relevance to health, but, while it may be possible to have good oral health and hygiene without the aesthetically perfect smile, you can't really avoid it if you are visiting your dentist regularly for 'cosmetic' maintenance.

A public health professional from the North West recently remarked on a contrast between the United States and UK. Over there, unattractive smiles were conspicuous by their virtual absence. On his return, however, one of the first things he was faced with was a long train journey where he had to sit opposite a couple of most unattractive smiles. Not a pleasant experience, he reported, illustrating the common association between appearance and assumptions about health and hygiene. Many of us can probably recall similar instances.

Not that the United States can claim to be free from dental decay. Dental caries is a major public health problem, particularly among disadvantaged ethnic minority groups, with 'Poor Mexican American' children being the worst off[2]. Nevertheless the perception remains and the public image of American dental health is as described.

But what do the people with the unattractive smiles think of themselves? What do they see in the mirror? Do they see a problem, but lack the means or motivation to address it? Do they simply see dental deterioration as inevitable? Do they actually like what they see, following that strange element of British culture and humour which can actually take a perverse pride in such a perceived lack of vanity? Or, are there logical and pragmatic reasons for acceptance of what may appear undesirable?

One Out, All Out?

Things are not always obvious, as one historical example can illustrate. In the days prior to the setting up of the NHS in Britain, dental care and treatment was expensive, and many of the poor were excluded from access. Total dental clearances were often carried out, sometimes at a very young age. This was a drastic but pragmatic approach to secondary prevention. With no teeth, there would be

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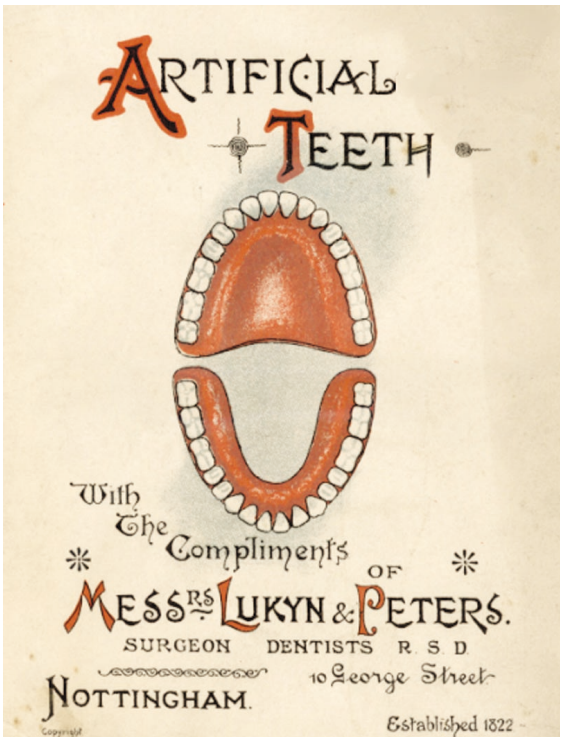
no worries about the future threat of pain or unexpected and heavy expenditure on care and treatment.

It is reported that in some communities this went as far as becoming a pre-nuptial practice where a father's wedding gift to his daughter and prospective son-in-law would be to pay for the bride to have a complete dental clearance in order to save the happy new couple the risk of dental expenses, especially linked to pregnancy. The economic logic is faultless in this early example of risk management.



The British Dental Association Museum (access via www.bda-dentistry.org.uk) has kindly provided the following summary of some elements of this practice:

"In regards to the question of young women having their teeth extracted and completed dentures fitted as wedding presents, this indeed was a very common practice particularly in rural areas of Great Britain. It is difficult to provide clear documentary evidence of any case in which it was carried out, but it is something which almost certainly was done as noted by several historians and dental practitioners of the period. In the period 1880 to 1920 poor oral health, dental decay and little understanding of dental disease had "ravaged the appearance of many a young woman long before her wedding day" (Professor Henry Noble, Glasgow Dental School).

In this period the manufacture and provision of a complete denture required less skill than the satisfactory provision of a partial denture. Techniques of restoring decayed teeth by filling also required much more skill than the provision of a complete denture. In many cases the decayed teeth were not 'removed' but merely had the decayed crowns broken off and filed level with the surface of the gums in order for impressions to be taken and complete dentures fitted. The occasional healthy tooth might be removed or have only its crown removed in this process.

Little surgical skill was required in preparing the mouth for complete dentures and no delay was necessary for the sockets to heal since in most cases the roots remained in the sockets and impressions could be taken immediately and the denture fitted at the next visit. The provision of complete dentures manufactured from vulcanite and bearing porcelain teeth is something which any apprentice learned within the first six months or year of his training. In the period 1880 to 1920 any dental technician or partially trained dental student could easily provide such dentures without breaking any law.

It can easily be seen that such a denture would make an excellent wedding gift from a parent or a near relative. This was one of the types of treatment which the 1921 Dentists Act was intended to abolish. However in the years between 1880 and 1920 there were often far more dental technicians and partially trained dentists providing such treatment than there were properly qualified dental surgeons."

Aesthetic Considerations

What are the modern links between oral health and aesthetic considerations, and could the latter be harnessed as a legitimate means of promoting the former? What are the dangers of linking health with beauty, as has often been the case in the past? At least one major high street brand store sees this link as positive and as a way forward.

In recent years, Boots has been extending its in-store provision of health related products and services. Many may be familiar with Boots Opticians centres, just one among several outlets providing a rapid service. The principles of walk-in service and high street availability have now been extended to include a Boots Dentalcare service, currently available at over 50 branches in Britain. Using strap-lines such as 'Improve Your Smile - The Smile You've Always Dreamed Of', a range of dental hygiene and cosmetic treatments is offered. In the North West, branches in Southport, Bolton, Altrincham and Manchester are set up in this way. Dentalcare is advertised as being available without appointments, during extended opening hours including evenings and weekends.

This brings a new focus to the questions of linking health with appearance, and readers will no doubt have views on both sides of the debate. It also links with the developments in NHS dental services discussed in sections below. In the meantime, keep smiling!

NHS Dentistry: *Options for Change*: A Summary and Outline of the Main Features

A new report NHS Dentistry: *Options for Change* was published by the Department of Health in August 2002. The report, which applies to dental services in England, presents the contributions of several working groups involving representatives from the dental profession, patients groups and the wider NHS.

A major prompt for this initiative was the 2001 report of the House of Commons Health Select Committee which highlighted a growing concern about patients finding it difficult to access NHS dentistry. The committee stressed the urgency of the situation and the need for a full NHS dental workforce review. The committee also said that the flawed system for paying dentists was driving the profession out of the NHS.

Options for Change offers a new view of the service, shifting the emphasis from treatment towards a focus on oral health promotion and the prevention of disease. To achieve this end the report proposes ways in which NHS dentistry could be modernised. It offers three 'big ideas': local commissioning and funding through primary care trusts, new methods of remuneration for general dental practitioners, and an oral health assessment for patients and clinical pathways of treatment.

Other key *Options for Change* proposals include: better use of information technology, larger practices with capital provided through the NHS LIFT programme (Local Improvement Finance Trusts - a public / private finance initiative to provide capital funding locally), and developing the dental team with more use of both specialists and professionals complementary to dentists. All these proposals will be underpinned by new national standards for patient experience.

Twenty-six field sites, involving 50 teams, have been selected by the Department of Health to test out *Options for Change* proposals. The sites will be run by the NHS Modernisation Agency. 139 applications were received and 14 recommended sites are in the North West Region (Greater Manchester 9, Cheshire & Merseyside 3 and Cumbria & Lancashire 2). This concentration of field sites in the North West is a reflection, among other things, of the level of oral health need in the region, discussed later in this bulletin. These changes are likely to lead to the biggest adjustment in the provision of dental health care since the start of the NHS. More details of the changes can be found on the Department of Health Chief Dental Officer's web pages at www.doh.gov.uk/cdo.

The Dental Health Team: Roles and Responsibilities

One chapter of the report *Options for Change* is devoted to education, training and development. Proposals are made to begin the process of extending teamwork and broadening the clinical roles of individual members of the team. This may involve changes to the delivery of basic education and training and to continuing professional development for all the dental team.

The question needs to be asked whether these changes go far enough? One theme of the report is the need for dental services to be drawn into a more central position within the NHS, and to be seen as integral to rather than separate from mainstream health care. If this is the case, what opportunities might exist for the dental team to contribute to the surveillance of risk factors, the prevention of disease, or even the treatment of conditions outside the normal remit of dental care?

Patterns of dental consultations vary from those with other health services. Dentists have frequent contact with well people and are well placed to offer health promotion advice. One example is the tendency for men not to visit the family doctor, or to visit late in the development of a condition. What if opportunities were available within dental practices for routine tests such as blood pressure to be offered alongside dental checks, or if more general health advice could become a routine component of a dental consultation? There could be potential for effective health promotion with a range of groups who have no other routine contacts with health services.

Of course this would require appropriate training and would constitute a significant expansion of the role of the professionals who support dentistry, but the benefits which could accrue should far outweigh the challenges which would have to be faced. The time is right for developments of this nature seriously to be considered and several of the field sites plan to explore the extended role of professions complementary to dentistry.

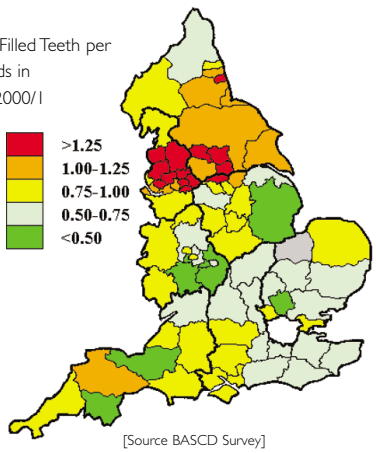
Inequalities and Tooth Decay

One of the key values underpinning the report *Options for Change* is the need for effective structures and mechanisms to address inequalities in oral health. In any assessment of oral health inequalities, the North West Region fares badly, making this a particularly pertinent issue in our region.

Recent data for the dental caries experience of children in England and Wales have been presented in surveys coordinated by the British Association for the Study of Community Dentistry (BASCD) in 2000/2001. Full details can be accessed via the University of Dundee Dental Health Services Research Unit at www.dundee.ac.uk/dhrsu/ along with a range of other useful dental health information. Figure 1 indicates the position of the North West Region with respect to the common indicator of oral health, the number per child of

Figure 1

Decayed, Missing or Filled Teeth per Child for 12 Year Olds in England and Wales, 2000/1



[Source BASCD Survey]

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decayed, filled or missing teeth (dmft) in twelve year olds. Within the North West region there are marked variations between areas. Figure 2 highlights the level of dfmt in five year old children by PCT in the region for 2001/02.

A current government performance target states that "by 2003 five year old children should have on average no more than one decayed, missing or filled primary tooth and seventy percent of five year olds should have no experience of tooth decay". It is likely that few PCT's in the North West will achieve this target, given the starting point indicated in these data. A wide range of social and behavioural determinants contributes to this position and in some areas there are substantially higher rates of decay. This includes significant ethnic variations. Rates of decay among some Asian children can be almost double those of their white counterparts[3].

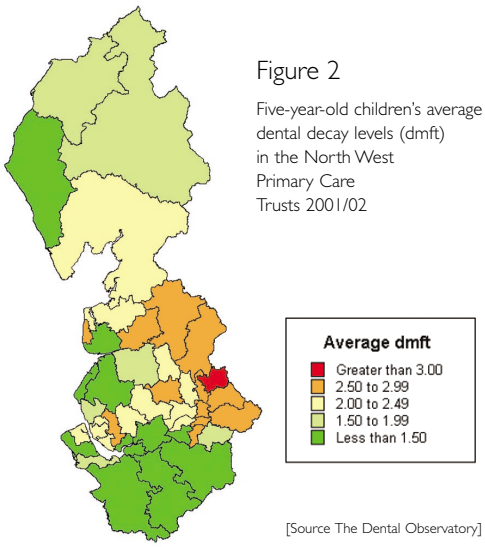

Figure 2

Five-year-old children's average dental decay levels (dmft) in the North West Primary Care Trusts 2001/02

[Source The Dental Observatory]

A Quick Guide to the Nature and Causes of Tooth Decay

Tooth decay, also known as dental caries, has consequences which are familiar to most people. The process begins with a softening of the enamel at the tooth surface, caused by loss of the vital minerals calcium and phosphate. It then spreads into the sensitive dentine below the enamel layer, and the tooth is progressively destroyed. Caries can also attack the roots of teeth should they become exposed by gum recession and this is more common in adults.

Figure 3 Bottle Caries

Dental caries is associated with the frequent consumption of sugar, principally the refined sugar, sucrose, which is found in unnaturally high concentrations in many foods and drinks. Sugars are rapidly converted to acid by bacteria in the plaque which builds up on teeth. Plaque also serves to hold the acid in contact with the teeth, assisting the process of demineralisation and eventual destruction. In addition to the effect of sugar, the frequent consumption of acidic drinks may cause the loss of enamel by chemical erosion. Many of these drinks are particularly popular with children.

The number of times that sugar enters the mouth is the most important factor in determining the rate of decay[4]. Every time a fresh mouthful of food or drink containing sugar is taken, the process of acid production and plaque growth is stimulated. High overall sugar consumption compounds the problem. Sugars, if they must be consumed, should be included as part of a balanced meal, rather than taken in snacks between meals. Snacks and drinks should be free of added sugars, whenever possible. Items such as raw vegetables, fruit, bread, water or milk can be recommended[5] and these have the bonus of more general health benefits.

Those feeding infants need to be aware of the dangers of putting fruit juice or sweet drinks into bottles or feeders. This practice is responsible for a characteristic and nasty pattern of decay known as "Bottle Caries" and can be seen in Figure 3 adjacent to this section. Health professionals report frequent examples of this condition in less privileged parts of the region.

The control of caries can be achieved by reducing the consumption and especially the frequency of intake of sugary foods and drinks. Although caries cannot develop without the presence of plaque, plaque removal by toothbrushing alone will not prevent caries if there are frequent intakes of sugar-loaded foods and drinks. The application of fluoride to the teeth also has preventive properties, but this is covered in more depth in a separate section below.

Gum Disease

A number of diseases affect the gums and surrounding bone and fibres that support the teeth. The most common are the group of diseases known collectively as chronic adult periodontitis. These conditions often begin during childhood as inflammation of the gum margin, with redness, swelling and bleeding on brushing. This stage is known as gingivitis and can be reversed by effective oral hygiene. Without treatment, the chronic stage may then develop and lead to loosening and loss of the tooth.

Periodontal disease is caused by dental plaque. Calculus is plaque which has calcified and hardened. There is considerable evidence that smoking increases the risk of periodontal disease and reduces the effectiveness of treatment. Some variation can also be accounted for by hormonal change and metabolic changes, for example in pregnancy or diabetes[6].

The most effective way of limiting periodontal disease is by plaque control through tooth brushing. Thorough brushing of all surfaces twice daily is of more value than more frequent cursory brushing[7]. Dental floss and other

interdental cleaning aids are of value if used correctly, but they will usually require professional advice.

Even in these days of modern technology, a simple procedure like toothbrushing can be subject to closer examination. *Changing Habits: The Technology and Practice of Toothbrushing in India and the UK* is a project currently under way in this region at the University of Lancaster. Based on the premise that toothbrushing is associated with a range of images including hygiene, personal appearance, smell, freshness and sensation, and that its purpose is subject to continual redefinition, the practice is suited to the investigation of historical, contemporary, and cross cultural change. Details of the project are available on the web site of the Department of Sociology at the University: www.comp.lancs.ac.uk/sociology.

Fluoridation - the Pros and Cons

The poor state of children's dental health in the North West is linked by some professionals to the absence of fluoridation of domestic water supplies and it is claimed that introduction of fluoride would significantly reduce both prevalence and severity of tooth decay in the region. Enthusiastic supporters of the benefits of fluoride include the North West's Regional Dental Officer, Tony Jenner, who is profiled in this bulletin. Opponents of fluoridation dispute this simple relationship and point to other issues such as the incidence of dental fluorosis, which causes significant discolouration of teeth.

In September 2002 the Medical Research Council produced a report looking at the balance of issues in relation to drinking water fluoridation. The report acknowledged the benefits of fluoride in reducing tooth decay, but with a number of qualifications about past studies. Further research on the health effects of adding fluoride to drinking water is needed, they concluded. Studies required include comparing the amount of fluoride that the body absorbs from naturally fluoridated water supplies with the amount absorbed from artificially fluoridated water, and investigations into the extent of dental fluorosis.

The report also reviewed a range of other health issues including cancer, effects on the immune system, and reproduction, and birth defects, all of which have been anecdotally associated with water fluoridation. They found no evidence linking fluoridation to cancer in general, or to specific cancers, but recommended an updated analysis to provide definitive data on cancer rates in areas where water fluoridation has been introduced. The full report Water Fluoridation and Health can be found at the Medical Research Council web site: www.mrc.co.uk.

A Nasty Taste in the Mouth

Oral Cancers

Mouth cancer is a malignant growth, which can occur in any part of the mouth, tongue and lips. About 2500 new cases of malignant tumours of oral epithelium are reported in England and Wales each year, along with about 300 salivary gland malignancies. There are 1,700 deaths per year[8] and mouth cancer has a higher proportion of deaths per number of cases than breast cancer, cervical cancer or skin melanoma. There has been little improvement in survival rates for mouth cancer over the past thirty years, making prevention and early diagnosis vital.

Many cases of oral cancer occur in older people and in edentulous people. In recent years there has been a shift towards an earlier onset (45-59 years) along with an increase in the number of women affected. Tobacco smoking and alcohol are identified as the main risk factors, and a combination of the two appears to multiply the risk. The chewing of stimulant products such as betel nut /pan masala, and non-smoked tobacco varieties such as ghutka and chewing tobacco also increase risk.

Malignant tumours of oral epithelium often present initially as symptomless ulcers, most commonly on or around the tongue. They sometimes present as ulceration within a pre-existing white or thickened area of mucosa and differ from other ulcers by persisting for more than two weeks after any cause is removed. Tumours of salivary glands or bone usually present as swellings. All cases benefit from early diagnosis and one advantage of an annual dental checkup is that it provides an opportunity for changes to be identified.

Sexual Health and Oral Health

The relationship between sexual health and oral health is one which is not widely publicised. This is in spite of the relatively common occurrence of oral manifestations of many Sexually Transmitted Infections (STI's). Even the British Dental Association seems shy of this issue, which is omitted from its web-based information source "Factfiles and Briefings" (www.bda-dentistry.org.uk).

One of the most easily transmitted STI's is syphilis. An ongoing investigation into an outbreak of the disease in Manchester has been coordinated from the Centre for Public Health at Liverpool John Moores University since the problem came to light in January 1999. In an area where there would normally be only two or three cases each year, there have been over 180 confirmed infections in 30 months to July 2001.

The investigation has identified high levels of risk behaviour, particularly unprotected oral sex among gay men, as the key driver of this outbreak. Thirty percent of infected patients interviewed stated categorically that the only possible route of their infection was oral sex. Full details of the pilot interview study and subsequent case-control analysis which provide the evidence for this assertion can be obtained from www.nwpho.org.uk/reports/syphilis(case).pdf

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Acid Attack Battler

Ten years of 'high street' dentistry, repairing decaying teeth, convinced Tony Jenner that preventative work was the only way forward. "I just had to ask myself what I was doing. I felt I was just firefighting by filling teeth and giving advice, but I wanted to do something more fundamental to improve oral health when it was clear that prevention of decay was so necessary," he says. "So I went back to university to train in public health dentistry."
Now the North West's Regional Dental Officer, Tony notes that his son and daughter, aged 33 and 27, who spent their early years in Newcastle where fluoride was added to the water, have never had a filling in their lives, while he and his wife are typical products of the pre-fluoride generation, who have seen their teeth gradually decay. "There is no doubt that the advent of fluoride toothpaste and fluoride in water supplies strengthens teeth. Children born from the 1970s onwards do have better teeth because of this, despite the amount of sugar they consume."

Resident in his native Cheshire, where he enjoys playing the church organ, Tony finds the North West a challenge in terms of promoting oral health. "This region does have the worst oral health. Improvement has been quicker in other parts of the country. Oral health at five years is one of the major indicators of health improvement, so we are hoping that our Brushing for Life scheme, launched last year to encourage parents to clean infants' teeth with fluoride toothpaste, will improve the North West's oral health."

Social deprivation in many areas of the North West means that teeth cleaning and sugar free diets are not priorities for people struggling on low budgets. The cost of fluoride toothpaste can seem too high, yet convenience foods with high fat and sugar content are widely consumed. "Sugar is the only thing that causes dental decay, which is our commonest disease. Sugar consumption is very much related to social deprivation. Children from poorer families tend to eat more sugar," Tony explains. "Every time there is a sugar intake, acid is released and that dissolves the enamel. Fluoride strengthens the enamel but controlling acid attacks by reducing sugar intake is also necessary to prevent teeth from decaying. Restricting sugary foods and drinks to meal times does help reduce the number of acid attacks and teeth should be brushed twice daily using family fluoride toothpaste" he notes.

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News and Events

For the latest news, information and events in Public Health in the North West Region, check at the Observatory Website www.nwpho.org.uk

Mental Health in Primary Care Seminar
Share the experiences of St. Helens Primary Care Trust in implementing the National Service Framework for Mental Health in Primary Care.
Date: 19/06/2003 Time:13.00 - 16.45
Venue: World of Glass, St. Helens
Contact: Sue Miller - E-Mail: sue.miller@centralliverpoolpct.nhs.uk
Telephone: 0151-285 2485

Delivering Health and Well-being through Settings and Partnerships
A two day National Conference
Sponsors: University of Central Lancashire (UCLAN), DoH, HDA
Day 1: 14/07/2003 Day 2: 15/07/2003
Venue: University of Central Lancashire, Preston, LANCS
Book online at www.uclan.ac.uk/hsdu

Launch of North West HIV/AIDS report 2002
Date: 23/07/2003 Time: 09.30 - 13.30
Contact Details: Penny Cook
E-Mail: p.a.cook@livjm.ac.uk / Telephone: 0151 231 4316

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http://www.nwpho.org.uk