Department of
Health, Social Services
and Public Safety

An Roinn
Sláinte, Seirbhísí Sóisialta
agus Sábháilteachta Poiblí

www.dhsspsni.gov.uk

June 2007

Contents

Further copies of this document can be downloaded from

http://www.dhsspsni.gov.uk/index/dental/dental-pubs.htm

Foreword

The consultation document ***An Oral Health Strategy for Northern Ireland*** was launched in September 2004 with the consultation concluding in December 2004. The overall response to the document was positive and did not alter any of the recommendations. The results of the consultation are summarized in appendix 6.

However, we were aware at the time of drafting the consultation document that the targets for improving oral health in children were based on data gleaned from the 1993 Children's Dental Health Survey[†] and would need updating. The targets have now been revised in the light of the data gleaned from the 2003 National Child Dental Health Survey[‡] and are published in this final document.

In the interim, we have begun to implement several of the recommendations in the strategy, for example;

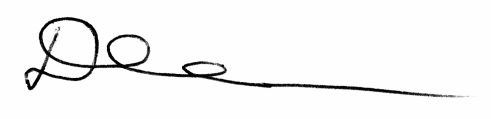
- Fluoride tooth paste schemes aimed at 5-year-old children in the 20% most deprived wards in Northern Ireland; this is an evidence based intervention which should significantly reduce decay rates in young children and was in place in all Trusts by September 2005.
- Preventive fissure sealant scheme targeted at first and second molar teeth. This evidence based intervention was introduced into the general dental services in April 2005 and, for the first time, remunerated high street dentists and dental care professionals for undertaking this preventive intervention under the health service.
- Capitation and continuing care payments have been increased for patients living in the 20% most deprived wards. In order to target resources at the areas of greatest need and encourage dentists to register and provide care for those patients with greatest need, capitation and continuing care payments were increased in April 2006 for patients living in the 20% most deprived wards.
- Evidence based preventive guidelines introduced:
  From March 2007 evidence based guidelines on managing dental caries in children (SIGN guidelines no. 47 and no. 83), have been adopted by the Community Dental Service (CDS) in Northern Ireland as part of the evidence based oral health improvement programmes undertaken by this sector of the profession.
- Dental dietary preventive schemes will be linked into the ***Fit Futures*** **Implementation Plan** launched by the Department in January 2007.

[†] **Source:** Office of Population Censuses and Surveys
[‡] **Source:** Office for National Statistics

- The Primary Dental Care Strategy, launched in November 2006, proposes to shift the focus in the new general dental services contract away from treatment of disease towards prevention.

There is, of course, much more work needed to implement the wide ranging recommendations in this strategy. It is hoped that, once the new Health and Social Care bodies are established under the Review of Public Administration, we can create the necessary structures to ensure effective implementation of the recommendations and progress against the targets.

In issuing this strategy, the Department would like to acknowledge the work and expertise of Michael Donaldson, Consultant in Dental Public Health, without whom it would not have been possible to develop such a comprehensive and high quality strategy.



Donncha O'Carolan

Acting Chief Dental Officer

June 2007

Executive Summary

The oral health of Northern Ireland's population is the worst in the United Kingdom and this has been the case for many years. Over the decades the oral health of our society has improved but the gains we have experienced have been much less than those seen by our neighbours. The Republic of Ireland, which once had worse children's dental health than Northern Ireland now, thanks to water fluoridation, boasts the lowest tooth decay levels in Europe.

This strategy attempts to close the oral health gap with our neighbours and to improve the quality of life for all our people by:

- Improving the oral health of the Northern Ireland population;
- Reducing the inequalities in oral health within our society.

The new Oral Health Strategy sets out a series of interlinked recommendations to achieve these aims. Oral health professionals are required to focus more on prevention, to link with other complementary health promotion programmes in order to maximise efficiency and to further develop partnerships with those outside the health sector such as schools, local councils and community groups.

The Strategy advocates increased cooperation and resource sharing between oral health professionals and other health service personnel. It is now recognised that much of the disease burden in the Western World is related to lifestyle and socio-economic factors. Indeed many chronic diseases, including oral diseases, share common risk factors. Smoking is associated with heart disease and many types of cancer (including oral cancer) but it is also a risk factor for gum disease. A diet high in sugar predisposes to obesity and diabetes and is also the main cause of tooth decay. The Strategy recommends that where oral and non-oral conditions share common risk factors, health professions should work together to maximise resources across disciplines and ensure that preventive advice given to the public is consistent.

Health, both oral and general, is not equally distributed within Northern Ireland but rather varies across social groupings. In general, poorer people tend to have worse health than the better off. Tackling these health inequalities is a priority for the DHSSPS and for this Strategy. We know that unhealthy behaviours are associated with social deprivation and that information giving alone is unlikely to result in behavioural change. The underlying causes of material disadvantage must be tackled, as advocated in *Investing for Health*, and prevention must be targeted at those who due to poverty are at an increased risk of poor oral health and who also exhibit low utilisation levels of dental services. The Strategy also addresses oral health inequalities and low service usage among the elderly and the socially excluded.

Preventive interventions may be implemented at the community, group or individual level. The greatest oral health gain is likely to be achieved through community water fluoridation and all oral health professionals should work to convince local politicians and community representative of the benefits of this approach. Health promotion programmes require personnel to manage and implement them. However, some Trusts have no dedicated oral health promotion staff and preventive programmes are suffering as a result. More than 80% of dentists work in the General Dental Services and there is considerable capacity here for one-to-one prevention and health gain. The Primary Dental Care Strategy (published November 2006) is designed to support the implementation of this Oral Health Strategy by developing an effective Primary Care dental delivery system (http://www.dhsspsni.gov.uk/dental_strategy_2006.pdf).

A significant proportion of our population, both adults and children, have disabilities. Disabled people are more likely to have higher levels of unmet dental need than the rest of the population. Services, both preventive and treatment, tend not to be as well developed for this growing population group. The Strategy makes specific recommendations to address these inequalities.

Oral health strategies are often dismissed as being "just about teeth" but oral diseases are so prevalent in our society that they significantly diminish our collective quality of life. This document highlights the interdependence of general and oral health. Firstly, it shows how oral disease can impact on general health and vice versa. Then, and from a preventive perspective more importantly, how a small number of risk factors link most chronic general and oral diseases. We need to increase cooperation between different professional groups within the health service and also increase collaboration between the health and non-health sectors to achieve our shared goal; better health and wellbeing for all of our population.

Recommendations

Recommendation 2.1

Oral health should be represented on the Health Promotion Forum so that partnership working, operational efficiency and population health gain are maximised.

Recommendation 2.2

An official, accountable, expert group should be set up with the power to regionally coordinate and plan oral health promotion.

Recommendation 2.3

This planning group should develop a small number of evidence-based regional programmes and prepare the evaluation framework for these programmes. The group should also be capable of attracting funding for such regional initiatives.

Recommendation 2.4

There should be a minimum of 1 whole time equivalent person per Community Trust committed exclusively to the organisation and coordination of oral health promotion activities.

Recommendation 2.5

Preventive interventions, whether within or outside the clinical setting, should their effectiveness supported by a strong evidence base[§]. Consideration should also be given to the cost-effectiveness of the intervention.

Recommendation 3.1

Preventing caries in children, particularly among those from disadvantaged backgrounds, should be a key health objective for all Boards and Trusts in Northern Ireland.

Recommendation 3.2

To improve both general and oral health the DHSSPS, Boards and Trusts should work with educational authorities to ensure that all schools, including special schools, are free from vending machines selling sugary snacks and drinks.

Recommendation 3.3

To improve both general and oral health the DHSSPS, Boards and Trusts should work with educational authorities to ensure that all schools, including special schools, have a healthy breaks and meals policy.

Recommendation 3.4

Oral health professionals should build on existing partnership working arrangements with other health professionals, educational bodies and relevant local stakeholders to improve children's diets, particularly those from disadvantaged backgrounds.

Recommendation 3.5

As it is the most effective, cost-effective and equitable way of improving population dental health the DHSSPS will work in partnership with other stakeholders to examine the feasibility of fluoridating Northern Ireland's public water supplies.

[§] Unless the use of the intervention is as part of a research project to establish its effectiveness.

Recommendation 3.6
Given that it may take some time to introduce a comprehensive water fluoridation scheme in Northern Ireland, an alternative, evidence-based, regional prevention programme for caries in children should be developed and implemented as soon as possible.

Recommendation 3.7
The new Primary Dental Care Strategy should encourage dentists and DCP's to provide, where appropriate:

- One-to-one dietary advice and teaching of oral hygiene skills;
- Fissure sealants;
- Topical fluoride.

Recommendation 3.8
Producers of soft drinks should investigate ways of reducing their erosive potential.

Recommendation 3.9
Dentists should be aware of the problem of dental erosion and its causes. They should offer advice, treatment and referral as appropriate.

Recommendation 3.10
Oral health professionals at all levels should work with national sporting organisations, local sports clubs and sports coaches to ensure that it is a requirement for all participants in contact sports to wear a mouthguard.

Recommendation 3.11
Oral health professionals at al levels should work in partnership with those who teach, train and care for children to improve the immediate management of dental trauma.

Recommendation 3.12
Health Boards should examine the possibility of providing training to highlight the dentists' role in the detection and multidisciplinary management of suspected cases of child physical abuse.

Recommendation 3.13
Oral health professionals at all levels should work in partnership with schools, local councils and other health professional to ensure that the public are aware of the risks to health caused by excessive alcohol consumption.

Recommendation 3.14
The DHSSPS and Health Boards should work with local councils, safety organisations and licensed premises to increase the use of "safe" glasses.

Recommendation 3.15
Oral Health professionals should be aware of the causes of falls among older people and should support local and regional programmes for falls prevention.

Recommendation 3.16
The boundaries of orthodontic treatment for health reasons and orthodontic treatment for purely cosmetic reasons should be clearly defined in the strategies for the GDS and the CDS.

Recommendation 3.17
Nursing staff and trained carers of children with disabilities should receive an oral health module that includes:

- Prevention of oral disease through healthy diet and oral hygiene measures;
- Simple oral assessment for early signs of oral disease;
- Information on how to access dental services.

Parents and other carers should be given advice on maintaining oral health.

Recommendation 3.18
The care standards for children's special schools or residential care homes should require that:

- Each child has their oral health assessed by a dentist annually and that each individual's care plan has oral health input;
- When an oral health care need is identified appropriate action is taken;
- There is a policy for preventing oral disease through a healthy diet and oral hygiene measures;
- Arrangements are in place with local dental services to provide dental care when the need arises.

Recommendation 3.19
Trusts should ensure that, where necessary, appropriate transport is available to allow children with mobility problems to access oral care.

Recommendation 3.20
In order to gain a regional perspective on the issues faced by this group, needs assessments should be carried out to agreed protocols throughout Northern Ireland and reported in a standard form.

Recommendation 3.21
The training of dentists, dental nurses, hygienists and therapists should include practical experience in the management of those with special needs. Appropriate postgraduate training should be available to those who wish to develop their skills in the treatment of the disabled.

Recommendation 4.1
The philosophy of lifelong prevention of dental disease should be adopted by all dentists.

Recommendation 4.2
Older adults have the poorest levels of dental attendance, innovative approaches should be employed by the DHSSPSNI, Health Boards and General Dental Practitioners to increase dental service utilisation among this group.

Recommendation 4.3
The levels of root caries in older people living in institutions has been shown to be almost twice that of those living in the community [47]. Boards and Trusts should continue to work with residential and nursing home staff to improve levels of oral hygiene and to reduce the cariogenicity of foods provided.

Recommendation 4.4
The awareness among carers of the elderly of the risk factors for the development of tooth decay should be raised. Training should be provided to all carers in how to effectively clean their client's teeth and dentures.

Recommendation 4.5
Oral health professionals should ensure that they effectively communicate to patients the importance of good oral hygiene and not smoking in the maintenance of healthy periodontal tissues. The primary dental care system should make it feasible for dentists to spend time conveying these messages to patients on a one-to-one basis.

Recommendation 4.6
Training in brief interventions for smoking cessation should be widely available to primary care oral health professionals and the remuneration system should make it feasible for them to offer this service.

Recommendation 4.7
When children are young the probability of establishing healthy lifetime habits is greatest. Oral hygiene should be integrated into the teaching of general body cleanliness education at both pre-school and primary school. With older children the promotion of oral hygiene as grooming behaviour may be an alternative approach.

Recommendation 4.8
Dentists should opportunistically screen "at risk" patients for oral cancer.

Recommendation 4.9
The uptake of dental services by older adults who live independently is low. A concerted effort needs to be made to encourage regular asymptomatic attendance in this group, who by virtue of their age, are at greater risk of developing oral cancer.

Recommendation 4.10
Oral cancer has a positive association with social deprivation. Oral health professionals, working in partnership with other health professionals, educational bodies and relevant local stakeholders should continue to work towards increasing the consumption of fresh fruit and vegetables among all children, but particularly those from disadvantaged backgrounds.

Recommendation 4.11
An oral health assessment should form part of the multidisciplinary health assessment given to new residents of nursing and residential homes.

Recommendation 4.12
The Care Standards for residential and nursing homes currently being developed in Northern Ireland should include simple indicators that allow the quality of oral healthcare provided by the home to be determined.

Recommendation 4.13
The new Primary Care Dental Strategy should take account of the projected increase in treatment needs among older adults and consideration should be given to increasing dental service utilisation among this group.

Recommendation 4.14
National care standards for disabled adults in residential care should ensure that oral health is assessed regularly, that protocols are in place for dental care when it is required and there is a policy on the maintenance of oral health.

Recommendation 4.15
Trusts should ensure that, where necessary, appropriate transport is available to allow people with mobility problems to access oral care.

Recommendation 4.16
Professionally trained carers of adults with disabilities should receive an oral health module that includes:

- Prevention of oral disease through healthy diet and oral hygiene measures;
- Simple oral assessment for early signs of oral disease;
- Information on how to access dental services.

Other carers should be given advice on maintaining oral health.

Recommendation 4.17
The care standards for those with a psychiatric illness in residential care should ensure that an oral health assessment forms part of the general health assessment, that each individual's care plan should have oral health input and that each residential care home has a protocol to ensure all residents with an oral health care need have access to appropriate services.

Recommendation 4.18
Nursing staff and professional carers should receive training on simple oral assessment criteria, how to prevent oral disease in those with mental illness and how to access dental services.

Recommendation 5.1
In modernising primary care dental services, comprehensive access to appropriate dental care should be safeguarded.

Recommendation 5.2
Currently, the need for dental care for special needs patients significantly outstrips supply and it is likely this situation will worsen. The Chief Dental Officer should establish a multidisciplinary working group to examine the issue and develop an action plan to improve services for this group. As it may take some time to develop a suitable long-term solution to this problem the working group should also investigate remedial measures that can be implemented quickly.

Recommendation 5.3
A regional oral health care needs assessment and a simple survey of dental service usage should be carried out for homeless, travellers and ethnic minorities.

Recommendation 5.4
The DHSSPS, Health Boards and Trusts should work in partnership to try and improve dental service utilisation levels among those groups with historically low levels of dental attendance.

Recommendation 5.5
Access to, and uptake of, dental care should be monitored carefully during any changes to the primary care dental services.

Recommendation 6.1
The Chief Dental Officer should set up a Strategy Implementation Group to ensure that the Strategy recommendations are enacted and to monitor progress towards Strategy targets.

Recommendation 6.2

Each Health Board and Trust should produce an annual action plan and submit this to the Strategy Implementation Group at the beginning of each financial year. The group will consider each action plan in relation to, among other things, opportunities for cross-boundary working, maximising resources through linkages with other non-dental programmes and the likely effectiveness of any proposed initiatives.

Recommendation 6.3

There should be a mandatory review of the strategy after 5 years. Recommendations and especially targets may need to be revised as new information is received and the Strategy Implementation Group should give this consideration on an on-going basis.

Targets

Target 3.1
By 2013 at least 50% of 5 year-old children should be free from obvious dental decay experience (baseline value, 39% in 2003**).

Target 3.2
By 2013 the mean number of teeth with obvious decay experience per child among 5-year-olds (i.e. mean dft) should be less than 2.0 (baseline value, 2.5 in 2003**)

Target 3.3
By 2013 to reduce the gap between the best†† and the worst## school decay scores for 5-year-old children (as measured by school mean dmft) by 20%.

Target 3.4
By 2013 at least 40% of 12 year-old children should be **free** from obvious decay experience (baseline value, 27% in 2003**).

Target 3.5
By 2013 the mean number of teeth with decay experience per child among 12-year-olds (i.e. mean DMFT) should be less than 2.2 (baseline value, 2.7 in 2003**).

Target 4.1
To reduce the proportion of adults without any natural teeth to 8% or less by 2008 (baseline 12% in 1998).

Target 4.2
To increase the proportion of adults with 21 or more natural teeth to 78% by 2008 (baseline 71% in 1998).

Target 4.3
To reduce the proportion of dentate adults with at least one tooth with active root decay to 10% by 2008 (baseline 12% in 1998).

Target 4.4
To reduce the proportion of dentate adults with visible plaque present on their teeth from 66% to 50% by 2008.

Target 4.5
To reduce the proportion of dentate adults with attachment loss of 4mm or more on at least one tooth from 39% to 34% by 2008.

Target 4.6
To reduce the proportion of adults who smoke from 27% to 25% by 2006/7 [74a].

Target 4.7
By 2008 Reduce the Mean Number of Reported Problems per Adult Due To Oral Conditions from 1.4 To 1.1

Target 4.8
By 2008 reduce the proportion of adults reporting at least one problem related to oral health from 47% to 40%.

** **Source:** Pitts, N and Harker, R. Children's Dental Health in the United Kingdom 2003. National Statistics.

†† **Best** means the school mean dmft score at the 10th percentile.

Worst means the school mean dmft score at the 90th percentile.

1. Introduction

1.1 Purpose Of Strategy And General Mechanism Of Action

The new Oral Health Strategy has two key aims:

- To improve the oral health of the Northern Ireland population;
- To reduce the inequalities in oral health within our society.

If this document is to achieve these aims then it must, of course, influence the practice of oral health professionals. This may happen in a variety of ways including how Boards commission dental services, and how general dental practitioners are remunerated. However, to maximise population health gain the Strategy needs to have an impact beyond dentistry.

To increase influence within the entire health sector this Strategy should raise the awareness of how dental health impacts upon general health and how the actions of all health professionals may affect oral health. In particular, health professionals and others who care for children and adults with special needs and for older people need to understand the importance of, and be capable of, maintaining oral health through dietary and hygiene practices.

In keeping with the principles of the Ottawa Charter [(1)] the new Oral Health Strategy is not just for those in the health sector. The Strategy recognises that to improve health, reduce inequalities and make these gains sustainable, other sectors must also be engaged. Educational bodies are capable of affecting children's diet and health behaviours, transport policies can have a huge influence on access to services and the food, drinks and pharmaceutical industries can reduce the decay causing potential of their products. Where appropriate, policy links to other Government Departments and industry are made throughout the Strategy.

1.2 General Health, Oral Health and Northern Ireland Society

No matter how we measure it, the oral health of the Northern Ireland population is poor. One in eight adults has no natural teeth, two thirds of adults that have teeth have gum disease and our children have among the highest levels of tooth decay in Europe [(2)]. Many of the risk factors for oral disease are also implicated in general health problems. A poor diet high in sugary foods and drinks predisposes to obesity and diabetes, but it is also the main cause of tooth decay. Many people are aware that cigarette smoking carries an increased risk of heart disease and cancer, but fewer will know that it is one of the main risk factors for gum disease. With many chronic diseases sharing common risk factors, a collaborative approach needs to be adopted so that resources can be maximised in achieving everyone's goal: better health for all.

Underlying the unhealthy behaviours that lead to disease is deprivation, a key determinant of health. Northern Ireland is the most materially deprived part of the UK. Among the four home countries, we have the lowest average weekly household income and the lowest employment rate (appendix 1a). Northern Ireland's material deprivation compared to the rest of the UK is one reason why our population's oral health and general health is so poor [(3)]. Another is the marked inequalities that exist in the distribution of wealth *within* Northern Ireland. One widely used measure of intranational income distribution, the Gini Index, places Northern Ireland among the least economically equitable countries in Western Europe (appendix 1b). Furthermore, it appears that over recent years inequalities in income distribution

have been widening [4]. Relative deprivation on a national level and internal wealth inequality are not just associated with oral disease, there are also established links with poor general health [5,6,7]. If health inequalities are to be diminished then Government departments must work in partnership to minimise the effects of material and social deprivation..

1.3 The Policy Context

In 2002 the Department of Health, Social Services and Public Safety (DHSSPS) published a public health strategy for Northern Ireland, *Investing for Health* [8]. This document sets out proposals to improve the health of the Northern Ireland people by tackling the underlying determinants of health, many of which lie outside the control of the health services [7]. To achieve health gain and reduce inequalities in health, *Investing for Health* advocates a cross-cutting approach which will involve not only the health services but also, among others, the education, housing, economic and transport sectors. Effectiveness and sustainability are achieved through partnerships between statutory bodies and community and voluntary groups. This Oral Health Strategy, by seeking to improve oral health through both inter-sectoral and partnership working, endorses and builds upon *Investing for Health*.

The Department of Health, Social Services and Public Safety published a Regional Strategy for Health and Personal Social Services [9] in December 2004. This document outlines the challenges that the HPSS will face over the next 20 years and explains how these challenges will be met. It deals not only with the prevention of disease but also with how health services must be modernised to improve treatment outcomes. The Regional Strategy acknowledges that to maximise health gain from any healthcare system services must be accessible to, and used by, those with high treatment needs [9]. This is particularly applicable to oral health where there is a substantial body of evidence to show that those with the greatest need for care have the lowest levels of service utilisation [10 & 11].

Flowing from the Oral Health Strategy will be a strategy for the future of General Dental Services and a strategy/action plan for the future of Community Dental Services. The latter document will essentially be the final report of the six working groups established under the recommendations of the CDS Review [12]. These strategies will be developed in tandem and will complement one another. The aim is to produce integrated, effective, accessible, modern and efficient primary care dental services that not only secure dental health but also prevent both oral and general disease (figure 1).

1.4 The Impact of Oral Diseases in Northern Ireland

The effect of oral diseases is considerable and cannot be fully conveyed by simply stating the proportion of the population with dental decay or gum disease. In 2003 almost 8,000 young children received a general anaesthetic in a hospital to have decayed teeth extracted, over 1 million courses of dental treatment were started, countless school and working days were missed, and more than £80 million was spent on health service dental care. In all, oral diseases will have impacted directly on the lives of most Northern Ireland children and adults either through pain and suffering, limitation of function or reduction in quality of life.

Poor oral health may also impact on general health and well being, particularly among the vulnerable. In 2001, 55 people in Northern Ireland died from oral cancer, making it a bigger killer than cervical cancer [13]. Loss of teeth is one of the main causes of nutritional deficiency in older people [14] and children with poor teeth are more likely to have a reduced quality of life [15,16].

The reverse also occurs with some general diseases, such as diabetes and HIV, having oral signs and symptoms that, if spotted, can facilitate earlier diagnosis and improve outcomes.

Figure 1. The Policy Context of the new Oral Health Strategy

1.5 Future Challenges

Population projections show that by 2014 there will be 55,000 more people aged 65 and over living in Northern Ireland [17]. This will have implications for the entire health service but particularly for dentistry. In the future, a greater proportion of elderly people will retain more teeth into later life and, for a variety of reasons, these teeth will be at an increased risk of both decay and periodontal disease. Dental treatment in the frail elderly patient can be challenging so there will be an increased need for prevention throughout the life course.

The public will continue to be better informed of what the health services may be able to do for them and how they can improve their own health. Active learning by patients, often through the Internet, is being encouraged in parts of the UK by the NHS Expert Patient Programme. Public expectations of what the oral health care system can deliver are also increasing; especially in terms of opening times, waiting times and quality of service. In some cases there is a disparity between what patients expect and what the current dental services are able to deliver. Dental services for some vulnerable groups are starting from a relatively low base and service development will take time. Additionally, the rights of special needs groups are now backed by powerful legislation that, in itself, will act as a major driver for change.

More people are now visiting their family dentist regularly and there is an increasing demand for aesthetically driven dental treatment. The boundary between dental treatment for cosmetic reasons and dental treatment for health reasons is clearly defined in the new strategies for Primary Dental Care.

Linked to increasing public expectations is the quality agenda and clinical governance. It is likely that standards of cross-infection control, health and safety and professional development will be raised for all health care workers in the future. How these quality improvements are funded is a major issue across the health services.

The composition of the dental workforce is changing. Historically, female dentists have accounted for only a small proportion of the dental workforce. However, in 2003 approximately 41% dentists working in General Dental Practice (family dentists) were female and among those aged less than 30 years, females were in the majority. A recent survey of GDPs in Scotland [18] found that two thirds of all GDPs planned to retire early and that 75% of these planned to reduce their hours before they leave. It is therefore likely that a large proportion of the dental workforce in the future, both young and old, will work part-time. This has implications not only for the number of dentists and Dental Care Professionals (DCP's) required in the future but also may conflict with patient demands for dental services outside of normal office hours.

Dental technology continues to advance. Treatments and diagnostic aids that were not widely available 20 years ago, such as porcelain veneers and digital radiographs, are now commonplace. The boundaries of what dentistry can actually offer patients are expanding and will continue to expand. However, the inflation of new dental technologies comfortably exceeds consumer inflation and the resources available to fund dental care are limited. Difficult decisions have to be taken about which treatments should be available under the health service and which should not.

In order to improve the oral health of our population, reduce oral health inequalities and to ameliorate the effect of the above challenges on health service dentistry there needs to be a genuine and concerted move towards prevention. In 1974, spiralling health service costs and a recognition of the impact of socio-economic, environmental

and lifestyle factors on health led the then Canadian Minister of Health, Marc Lalonde, to state *"there is little doubt that future improvements in the level of health lie mainly in improving the environment, moderating self imposed risks and adding to our knowledge of human biology."* [19] Thirty years later Derek Wanless, in his report *Securing Good Health for the Whole Population* [20], wrote *"What is striking is that there has been so much written often covering similar ground and apparently sound, setting out the well known determinants of health, but rigorous implementation of identified solutions has often been sadly lacking."* Let us hope that thirty, or even ten years, from now the same cannot be said.

2. Preventing Oral Disease

Most oral disease is preventable. This is because the causes are well known and effective measures to block the development of the oral diseases have been developed. Why then do we have such high levels of oral disease? The reasons for our poor oral health are complex but the main explanation is that oral diseases are mainly due to lifestyle factors. Diet, oral hygiene behaviours and smoking habits largely determine a person's risk of developing oral disease. Most people know, for example, that a diet high in sugar increases their risk of dental decay yet we as a population spend 50% more than the UK average on soft drinks (appendix 2). It is therefore not surprising that simply providing people with health information has not been shown to be a particularly effective method of disease prevention [(21)].

Health behaviours are determined not just by knowledge but also by social, cultural and economic factors. Family and cultural influences will affect the value placed on health. In turn this will influence an individual's desire to eat healthily. The food available to them is determined by what local stores actually stock (i.e. those within walking distance) and their access to transport (for stores not within walking distance). What they actually choose will be influenced by marketing and affordability. The latter is determined by many factors most of which lie outside the control of the individual. To positively affect the food consumed it is therefore necessary to not only impart information that allows the buyer to choose healthy foods but, more importantly, to alter those other variables that limit the range and affordability of healthy food available to the consumer. This recognition of the importance of economic and social conditions in relation to lifestyle is at the heart of the health promotion approach.

2.1 Oral Health Promotion

The World Health Organisation has been the driving force behind the health promotion movement. In 1986 it produced a key document, the Ottawa Charter [(1)], which still lights the way in securing population health gain. There are five key areas of action outlined in the Ottawa Charter, each one applicable to oral health.

- Creating supportive environments: Making physical and social environments facilitate healthy choices. e.g. schools which only permit healthy foods at break time.
- Building healthy public policy: Using both health sector and non-health sector public policies to achieve maximum health gain for the population. e.g. making nicotine replacement patches available on prescription and banning smoking in public places.
- Strengthening community action: Empowering individuals and communities to recognise how their health may be improved and implementing strategies to do so. e.g. oral health professionals working with local communities to persuade local politicians of the need for water fluoridation.
- Developing personal skills: Educating and imparting new skills to individuals and groups so that they may undertake actions to improve health. e.g. incorporating an oral health module into the training of carers for the elderly.
- Reorient health services: Moving the health system away from being an "illness service", continually battling the consequences of disease, to one which actively pursues health. e.g. establishing fissure sealant programmes in schools with high levels of dental disease.

Where possible, throughout this Strategy, the principles of the Ottawa Charter will be harnessed to generate recommendations to improve oral health and reduce inequalities.

2.2 Common Risk Factor Approach

Heart disease and cancer are the biggest causes of death in the developed world. In 2003 these two diseases accounted for 45.6% of all deaths in Northern Ireland [22]. Smoking and poor diet, two key risk factors for heart disease and cancer, are implicated in the development of several other diseases that kill another 15%-20% of the population annually. Poor diet is also a risk factor for dental decay, tooth erosion and oral cancer while smoking is associated with both periodontal disease and oral cancer. Furthermore, excessive alcohol use is related to oral and other cancers, heart disease and facial trauma. Historically, preventive initiatives have been disease specific with similar messages from a range of health professionals issued in a fragmented manner. By focusing preventive action on a small number of risk factors that impact on a large number of diseases, effectiveness and efficiency may be increased. To do this oral health promotion needs to be linked into general health promotion at a strategic level.

Recommendation 2.1

Oral health should be represented on the Health Promotion Forum so that partnership working, operational efficiency and population health gain are maximised.

2.3 Oral Health Promotion in Northern Ireland

In practice, oral health promotion is carried out in Northern Ireland by the Community Dental Service (CDS). Among the previously configured 11 Community Trusts there are almost 7 whole time equivalent staff working in oral health promotion [12]. This is approximately 100 times less that the number of dental staff delivering treatment to patients. Each Board and Trust has its own individual schemes as well as being involved in a small number of regional programmes such as the Pilot Fresh Fruit in Schools Scheme. The small size of the CDS, its fragmented structure and the small numbers of staff involved in oral health promotion mean that programme development and evaluation consume a significant amount of available resources. In order for oral health promotion to have realistic chance of improving the oral health of our population, there needs to be more coordination and resource sharing between Boards and Trusts and oral health promotion capacity must be increased.

Recommendation 2.2

An official, accountable, expert group should be set up with the power to regionally coordinate and plan oral health promotion.

Recommendation 2.3

This planning group should develop a small number of evidence-based regional programmes and prepare the evaluation framework for these programmes. The group should also be capable of attracting funding for such regional initiatives.

Recommendation 2.4

There should be a minimum of one whole time equivalent person per Community Trust committed exclusively to the organisation and coordination of oral health promotion activities.

2.4 The Preventive Role of Dentists, Hygienists and Therapists

Oral health professionals who provide direct patient care have a significant part to play in preventing oral disease. They may apply fissure sealants, topical fluorides and impart oral health advice, all of which have a strong evidence base for effectiveness in preventing dental decay [23-25]. In addition, they may aid in the prevention of periodontal disease and oral cancer by providing brief interventions for smoking cessation. Research has also shown this to be effective [26]. Each of these interventions involves a one to one interaction with the patient and they are therefore relatively costly. Judicious patient selection is required so that cost-effectiveness is maximised. Within the General Dental Service the remuneration system and any accompanying monitoring arrangements should be such that there is adequate incentive for staff to engage in a preventive intervention when the patient is at risk of disease and sufficient disincentive when they are not. Remuneration for preventive activities will be dealt with later in the document (see **Recommendations 3.7, 4.5** and **4.6**).

Recommendation 2.5

Preventive interventions, whether within or outside the clinical setting, should their effectiveness supported by a strong evidence base[§§]. Consideration should also be given to the cost-effectiveness of the intervention.

[§§] Unless the use of the intervention is as part of a research project to establish its effectiveness.

3. Children's Oral Health

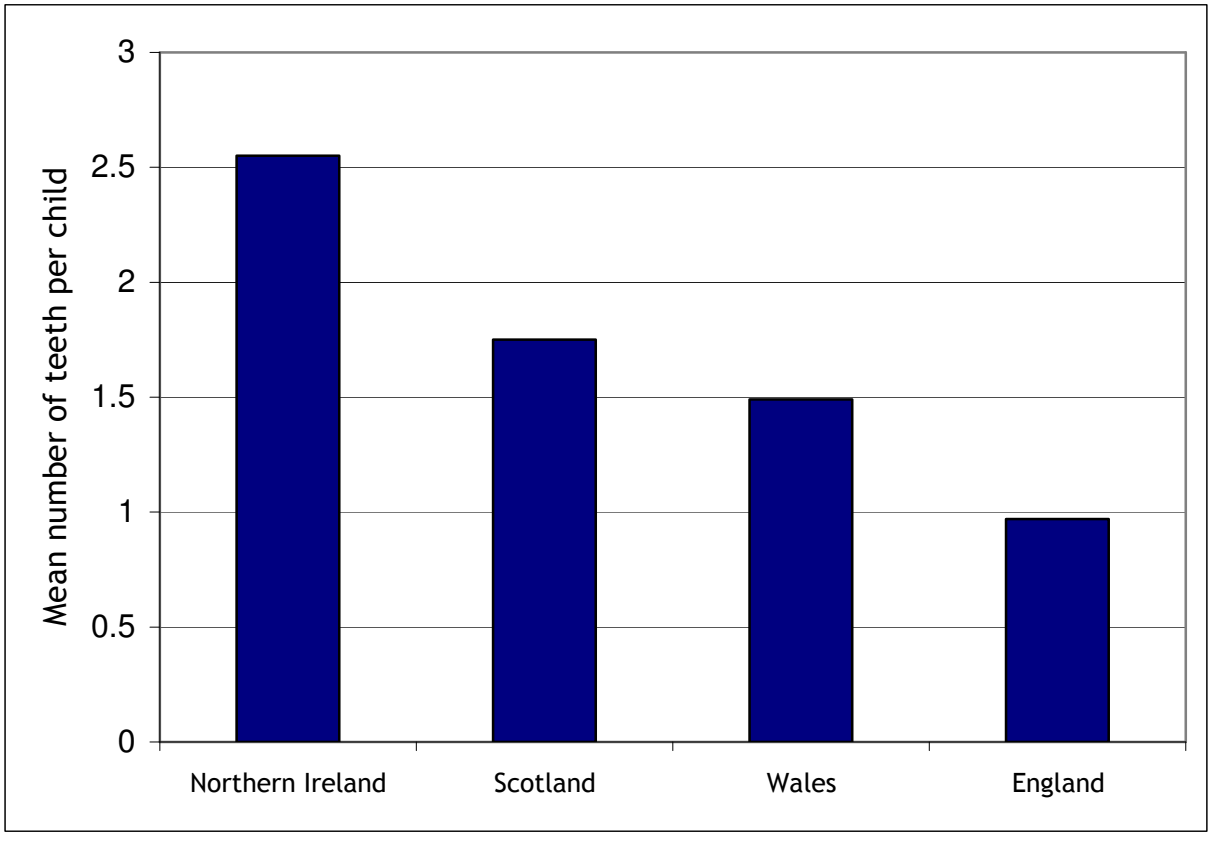
3.1 Caries

3.1.1 Introduction

Dental decay (caries) in children is a significant public health problem in Northern Ireland. It is also completely preventable. Compared to the UK average, our 12-year-old children have more than double the level of decay for this age group (figure 2) [27]. A 2002 survey showed that by the time they begin primary school most children in Northern Ireland will have experienced dental decay [28]. Many of these children will suffer pain, will miss days at school and will require costly dental treatment. Parents will have to take time off work so that their children can be treated and some children will require a general anaesthetic so that their decayed teeth can be removed.

In 2003 almost 8,000 Northern Ireland children attended hospital to have dental treatment under a general anaesthetic. This is the highest per capita rate of general anaesthetics for dental reasons in Europe [29]. It is also the most expensive way to treat dental disease. Even excluding these hospital treatments, fixing the decayed teeth of our children cost over £25 million pounds in the same period [30,12].

Figure 2. The average number of teeth per 12-year-old-child affected by dental decay in the four UK countries.



Source: BASCD 1996-97 UK Survey [27]

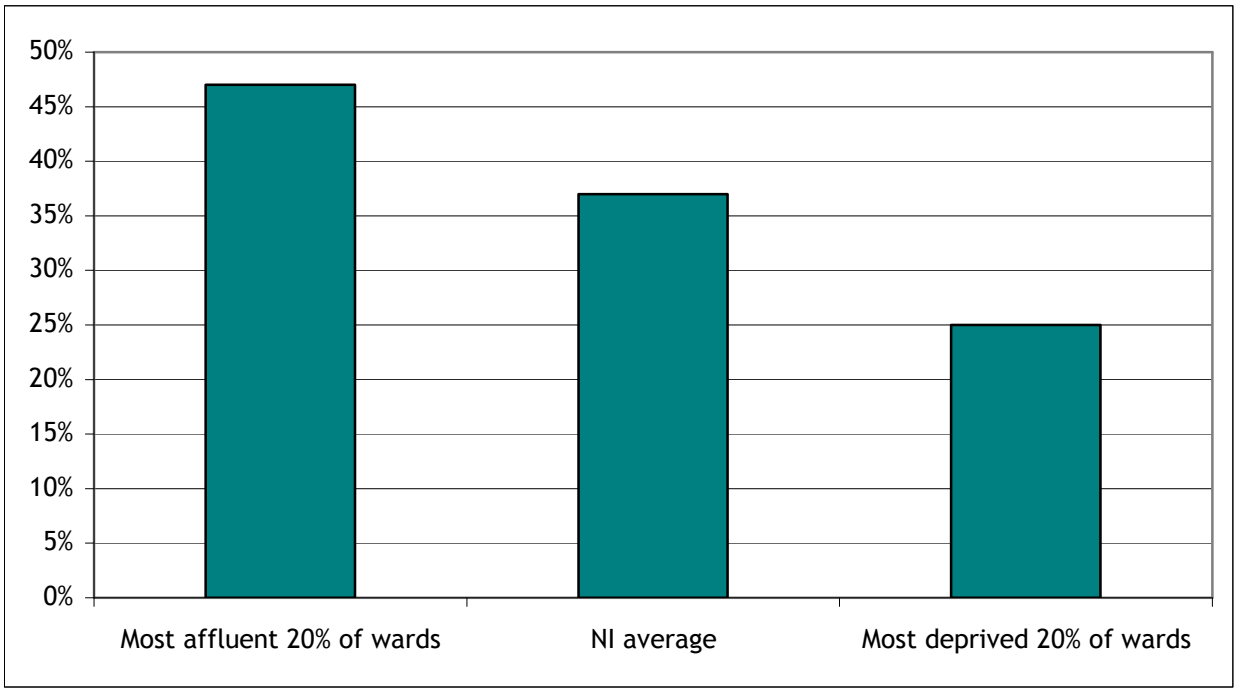
3.1.2 Caries distribution within the Northern Ireland Child Population

Not all children in Northern Ireland have dental decay. In 2002, 37% of all children in the first year of secondary school were free of dental decay (i.e. had no teeth that were decayed or filled or had been extracted due to decay) [28]. The worst 10% of primary 1 children account for around half of all the dental decay in this age group,

while the worst 20% account for almost three quarters of the decayed teeth in this age group [28].

One well-recognised factor which strongly influences dental decay levels is social deprivation. Children living in the 20% most deprived wards in Northern Ireland are almost twice as likely to have experienced dental decay as children from the 20% most affluent wards (figure 3) [28].

Figure 3. Proportions of Form 1 children without experience of tooth decay.



Source: North-South Children's Dental Survey [28]

3.1.3 Trends in children's caries

Although the absolute values of disease vary considerably, over the last 20 years the four UK countries have experienced similar trends in dental decay levels (figure 4). There was marked improvement in the 1980's followed by a levelling off in the 1990's. With the possible exception of Scotland, which has invested heavily in caries prevention, in terms of dental health gain the home countries have plateaued, albeit at different levels. Relative positions remain the same with Northern Ireland at the bottom of the UK league. Similar patterns are seen for 12 and 14/15 year olds.

Among older children the teeth most commonly affected by decay are the first permanent molars. In 1993, almost three quarters (¾) of Northern Ireland 12-year-olds had one or more first permanent molars with decay experience; by 2003, the proportion had dropped to two thirds (⅔). In most western societies, while dental health has improved overall, there has been a trend over the last 20 years for an increasing proportion of the total decay burden to be found in the narrow crevices of the biting surfaces of molar teeth. These fissures may be protected from tooth decay by coating them with a thin film of plastic resin known as a fissure sealant. In Northern Ireland 33% of 8 year-olds were found to have at least one fissure sealant on a permanent tooth while the comparable figure for 8-year-olds in the Republic of Ireland was 47% [28].

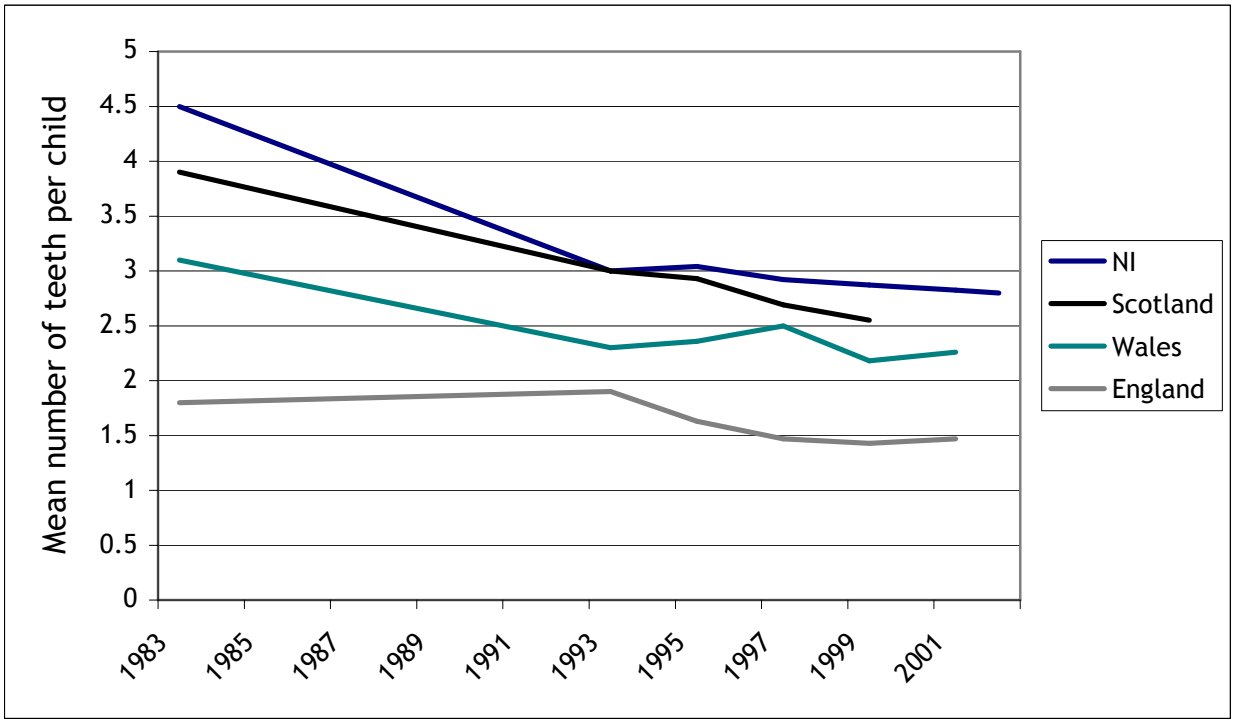
3.1.4 Causes of dental decay

Tooth decay occurs when bacteria within plaque convert dietary sugars into acid. This acid then attacks the surface of the tooth and begins to dissolve it. If this

process continues unchecked, a hole or cavity will eventually develop in the tooth. The chances of an individual developing dental decay are greater if:

- Their diet contains a large amount of sugary foods and/or drinks;
- They consume (even small amounts) of sugary foods and/or drinks *frequently* throughout the day;
- They don't brush their teeth at least twice per day with a fluoride toothpaste.

Figure 4. The average number of teeth per 5-year-old child affected by dental decay in the four UK countries 1983 to 2002.



On a population level, the reasons why Northern Ireland compares so unfavourably with other countries in terms of dental health are:

- We have an unhealthy diet. We spend the largest amount on sugary foods and drinks in the UK (appendix 2) [31]. This also affects the *general* health of the population;
- On average, we don't clean our teeth as much as countries with better dental health [32];
- The public water supplies are not fluoridated;
- We are the most deprived country in the UK [33].

3.1.5 Preventing dental caries

Direct intervention of the dental health professional

At an individual level dental decay maybe prevented in two ways:

- Improving diet
  (i.e. reducing the amount and the frequency of sugary snack consumption);
- Strengthening teeth so that they are more resistant to decay either by using fissure sealants or by delivering fluoride to the tooth surface.

Dentists, dental therapists and dental hygienists may therefore prevent dental decay by providing diet advice, applying topical fluoride to teeth and placing fissure sealants. While there is a strong evidence base to support these methods, their benefit to the oral health of the population is diminished by two factors:

- Historically, the focus of general dental services has been on the treatment of dental disease rather than on its prevention. In the past, when levels of dental disease where many times higher than today this was appropriate. In addition the remuneration system for dentists was structured to reward the treatment of high volumes of dental decay.
- To receive these interventions patients have to have the opportunity of, and be capable of, attending a dental surgery. Patients with the greatest need for prevention tend to have the lowest levels of attendance.

Furthermore, because these preventive methods require an oral health professional to spend time with an individual on a one-to-one basis, they are relatively costly.

School-based interventions

The problem of low dental service usage among those with the greatest need for prevention can be overcome by taking the intervention to the individual. In practice, this is achieved for children through school-based initiatives. There are many school-based diet improvement programmes throughout Northern Ireland including:

- Healthy eating break time initiatives. *Boost Better Breaks* is a scheme which aims to make the food and drinks consumed at breaks healthier and now includes more than 80% of all primary schools in the SHSSB. *Safe Snacks Award* is a joint WHSSB and WELB initiative and covers more than 280 schools;
- *Breakfast Clubs*. Children attending 7 secondary schools in North and West Belfast HSST are able to receive a healthy, balanced breakfast each day;
- *Pilot Fresh Fruit in Schools*. Almost 5,000 primary one and two children from across the province receive a portion of fresh fruit free-of-charge daily.

There are several different types of school programme that may be used to prevent tooth decay through the use of fluorides:

- School fluoride rinse scheme;
- School fluoridated milk programmes;
- School supervised tooth-brushing programmes.

All these are of proven effectiveness. There are no fluoridated milk schemes in Northern Ireland but the UK Milk Fluoridation Programme, centred in the North west of England involves more than 16,000 children. Before such a scheme can be set up it is necessary both to have an established school milk distribution system and that the supplying dairy is willing to participate in the fluoridation project. The additional cost of adding fluoride to the milk is very small.

School-based tooth-brushing and rinse programmes are relatively more straightforward than fluoride milk schemes. Many countries have established such programmes and they have been extensively studied and clearly shown to be effective in preventing dental decay [34]. They are most cost-effective when targeted at schools where there are high levels of dental decay. The main disadvantage of this approach are that it can be disruptive to lessons. This type of intervention is greatly aided if there is a willingness to participate within the school. There is currently only one school fluoride rinse scheme in Northern Ireland and it is based in the WHSSB. The 3-2-1 Programme is the largest supervised toothbrushing scheme in Northern Ireland and is based in the EHSSB.

School-based fissure sealant programmes can also be used to bring a proven caries prevention method to those with the greatest risk of developing tooth decay [35]. The cost-effectiveness of this approach depends on the background level of tooth decay in the target population and grade of dental personnel applying the fissure sealant. Although these schemes are relatively common in other countries there is currently only one scheme in Northern Ireland.

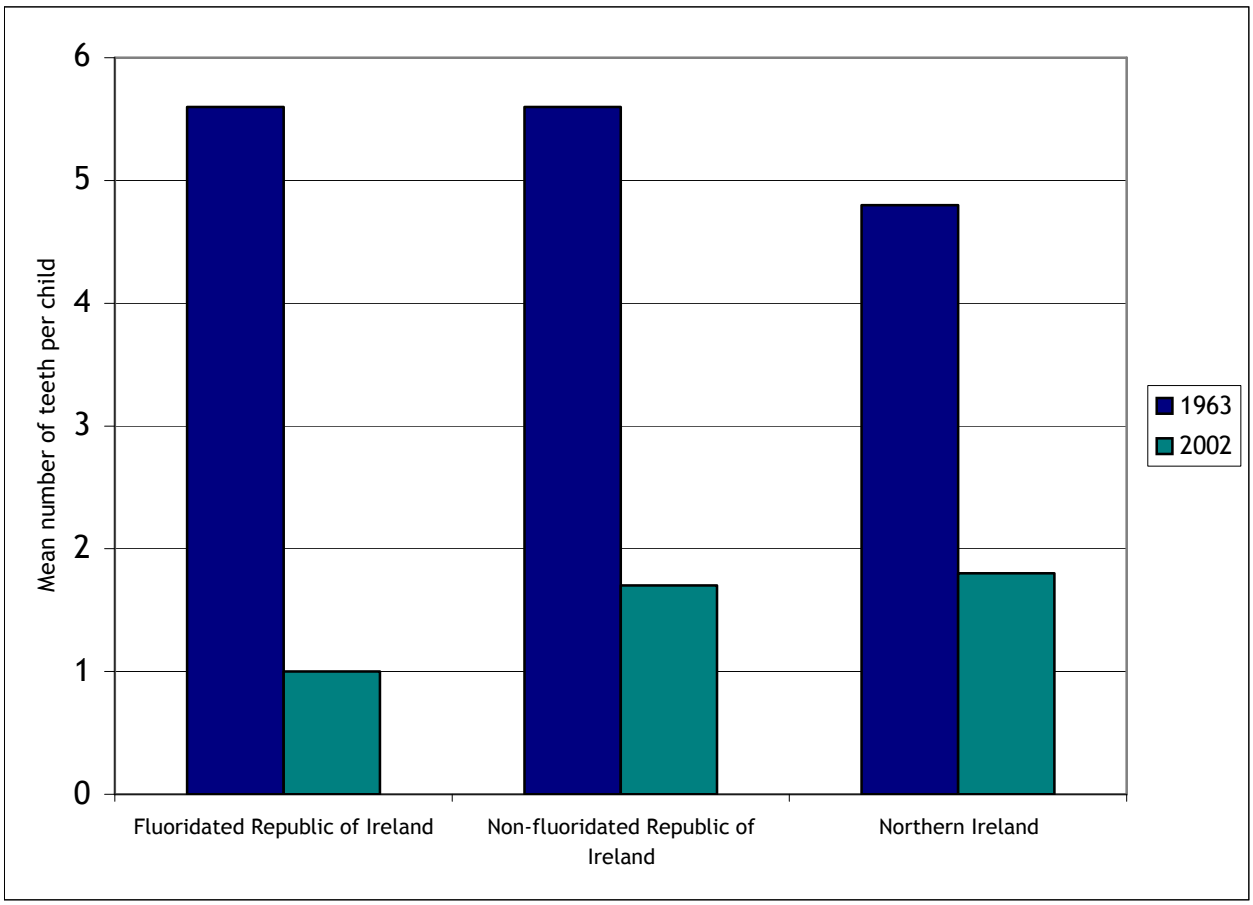
Population interventions

Worldwide water fluoridation is considered by public health experts to be the method of choice to improve population oral health. Its effectiveness and safety is endorsed by all reputable health bodies including the World Health Organisation [36], the US National Institute of Dental and Craniofacial Research [37] and the Royal College of Physicians [38]. The US Centre for Disease Control recently voted water fluoridation one of the ten greatest public health achievements of the 20th century. A systematic review of the effectiveness of water fluoridation in 2000 [39] found that it on, average, resulted in a 14.6% increase in the proportion of children aged 5-15 years free of dental decay.

Water fluoridation has the added benefit that no effort is required on the part of the public. It therefore does not suffer from the uptake bias that often affects health promotion interventions and so does not widen health inequalities [40]. It is also the most cost-effective way to reduce population decay levels costing approximately £0.50 per person, per year [41].

The Republic of Ireland began fluoridating public water supplies in 1964 and now more than 71% of the population receives fluoridated water. Prior to fluoridation commencing in 1964, dental surveys were undertaken in Northern Ireland and the Republic of Ireland. They showed that decay levels were higher in the South of Ireland among 5-year-old children (figure 5). Similar surveys undertaken in 2002 found that, in fluoridated areas decay levels had dropped to almost half those found in Northern Ireland were there is no water fluoridation [28].

Figure 5. Changes in caries severity among 5-year-old children from 1963 to 2002 (note: caries is shown at the cavitation level).



Source: North-South Children's Dental Survey [28]

3.1.6 Recommendations and targets

Recommendation 3.1

Preventing caries in children, particularly among those from disadvantaged backgrounds, should be a key health objective for all Boards and Trusts in Northern Ireland.

Recommendation 3.2

To improve both general and oral health the DHSSPS, Boards and Trusts should work with educational authorities to ensure that all schools, including special schools, are free from vending machines selling sugary snacks and drinks.

Recommendation 3.3

To improve both general and oral health the DHSSPS, Boards and Trusts should work with educational authorities to ensure that all schools, including special schools, have a healthy breaks and meals policy.

Recommendation 3.4

Oral health professionals should build on existing partnership working arrangements with other health professionals, educational bodies and relevant local stakeholders to improve children's diets, particularly those from disadvantaged backgrounds.

Recommendation 3.5
As it is the most effective, cost-effective and equitable way of improving population dental health the DHSSPS will work in partnership with other stakeholders to examine the feasibility of fluoridating Northern Ireland's public water supplies.

Recommendation 3.6
Given that it may take some time to introduce a comprehensive water fluoridation scheme in Northern Ireland, an alternative, evidence-based, regional prevention programme for caries in children should be developed and implemented as soon as possible.

Recommendation 3.7
The new Primary Care Dental Strategy should encourage dentists and DCP's to provide, where appropriate:

- One-on-one dietary advice and teaching of oral hygiene skills;
- Fissure sealants;
- Topical fluoride.

Target 3.1
By 2013 at least 50% of 5 year-old children should be free from obvious dental decay experience (baseline value, 39% in 2003***).

Target 3.2
By 2013 the mean number of teeth with obvious decay experience per child among 5-year-olds (i.e. mean dft) should be less than 2.0 (baseline value, 2.5 in 2003***)

Target 3.3
By 2013 to reduce the gap between the best††† and the worst‡‡‡ school decay scores for 5-year-old children (as measured by school mean dmft) by 20%.

Target 3.4
By 2013 at least 40% of 12 year-old children should be **free** from obvious decay experience (baseline value, 27% in 2003***).

Target 3.5
By 2013 the mean number of teeth with decay experience per child among 12-year-olds (i.e. mean DMFT) should be less than 2.2 (baseline value, 2.7 in 2003**).

Other relevant documents:

- Investing for Health
- Learning to eat well: Nutritional initiatives in Schools. (HPA)
- Eating for Health?: A survey of eating habits among children and young people in Northern Ireland
- Taskforce on Obesity in Children and Young People
- Food and Nutrition Strategy and Action Plan

*** **Source:** Pitts, N and Harker, R. Children's Dental Health in the United Kingdom 2003. National Statistics.

††† **Best** means the school mean dmft score at the 10th percentile.

‡‡‡ **Worst** means the school mean dmft score at the 90th percentile.

3.2 Dental Erosion

Dental erosion occurs when the outer layers of the teeth (enamel and dentine) are dissolved by acids. Unlike dental decay this process does not involve bacteria within plaque. Instead the acids which cause dental erosion come directly from the diet or from vomiting or gastric reflux. Dental erosion weakens teeth and makes them more susceptible to wear. It may also makes teeth acutely sensitive and in advanced cases may result in death of the pulp. Treatment of tooth erosion involves stopping the erosion process, building the tooth back up to its original level and, if the pulp has been damaged, root canal therapy.

Levels of dental erosion are high among young children in the United Kingdom. The 1993 UK Child Dental Health Survey found that almost a quarter of 5 and 6-year-olds exhibited erosion that breached the outer protective layer of the teeth (enamel) [42]. This survey also showed that erosion levels among the same age groups in Northern Ireland are somewhat lower (table 1). Children's permanent teeth seem to be affected less commonly and less severely, with only 2% of 15-year-olds in the UK having dental erosion that extended beyond the outer layer of the tooth (enamel) [42].

Table 1. Proportion of United Kingdom five and six-year-old children with erosion into dentine or pulp on the lingual surfaces of the primary incisors.

Age	England	Scotland	Wales	Northern Ireland	UK
5	23%	34%	22%	12%	24%
6	22%	35%	18%	15%	23%

Source: 1993 UK CDHS [42]

The most important dietary causes of tooth erosion in children are soft drinks [43]. Included in this category are:

- Carbonated, sugar-containing drinks;
- Carbonated, diet drinks;
- Sports drinks;
- Diluted squashes.

Although the figures in table 1 may appear reassuring, a recent food survey found that Northern Ireland families spend more than any other UK country on soft drinks (appendix 2). Furthermore, a survey carried out by the Health Promotion Agency for Northern Ireland in 1999 found that 40% of children aged 12-17 years consumed sugary fizzy drinks or squashes at least once per day [44].

High consumption of soft drinks is associated with low consumption of milk and water. This particularly a problem among girls aged 12-17 years, 5% of whom drink no milk at all [44]. Low consumption of milk is associated with osteoporosis in later life [45] while reduced water intake in children is linked with lower levels of concentration [46]. The National Diet and Nutrition Survey in 2000 found that among girls the average daily intake of carbonated, sugared soft drinks was more than twice as high as the intake of milk or water (table 2) [47].

Table 2. Daily intake of various drinks among UK 4-18 year-old girls.

Carbonated, sugared soft drinks	Milk	Water
152ml	75ml	60ml

Source: UK National Diet and Nutrition Survey, 2000 [47]

Prevention of dental erosion on a population level will depend on reducing the consumption of soft drinks among children. This may be achieved by facilitating schools in the adoption of healthy breaks and meals policies. In addition, increasing the availability of healthier, less erosive drinks may act to displace acid drinks from schools. This will benefit general health as well as oral health.

Recommendation 3.8
Producers of soft drinks should investigate ways of reducing their erosive potential.

Recommendation 3.9
Dentists should be aware of the problem of dental erosion and its causes. They should offer advice, treatment and referral as appropriate.

For changes to the availability of soft drinks within schools see **Recommendation 3.2** and **3.3.**

Other relevant documents:

- Taskforce on Obesity in Children and Young People
- Food and Nutrition Strategy and Action Plan
- Catering for a healthier lifestyle. Department of Education consultation document on school meals

3.3 Dental and Facial Injuries

Dental and facial injuries are a public health problem because they are common, disfiguring, disabling and costly to treat.

3.3.1 Dental Injuries

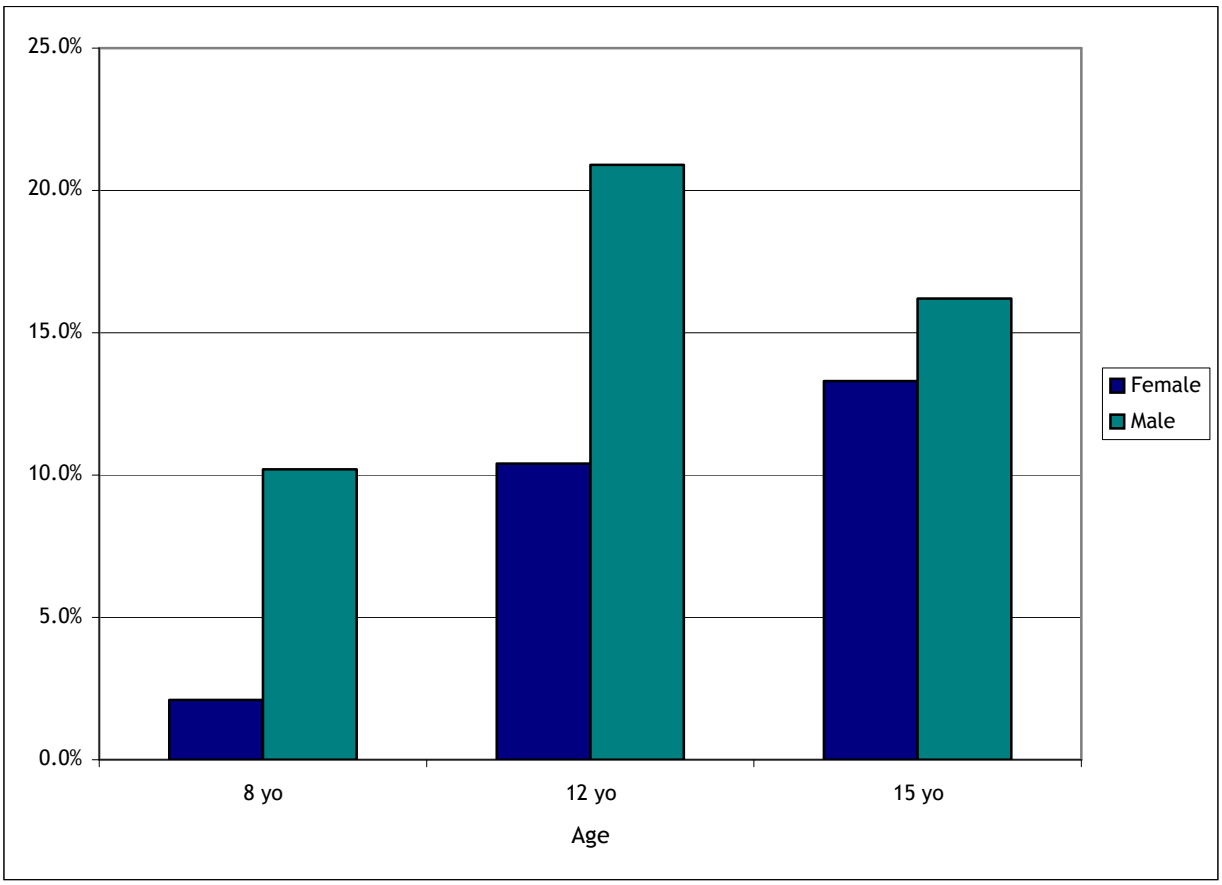
The 2002 North-South Children's Dental Survey found that over 20% of 12-year-old boys and 10% of 12-year-old girls had at least one permanent incisor affected by trauma (figure 6) [28]. The higher prevalence of tooth injuries in boys, which has also been observed in previous surveys [42], is thought to be due to more aggressive forms of play and sports among males.

Children aged 9 to 12 years are the most likely to experience a dental injury [48]. However, as the hard tissues of the tooth are not capable of healing, the prevalence of tooth injury (whether treated or untreated) tends to increase with age (figure 6). There is evidence to suggest that children from deprived background are more likely to suffer dental trauma than those from more affluent backgrounds [49].

Although dental trauma as a whole is relatively common, most injuries tend to be mild. As the severity of the injury increases its prevalence decreases. So while fractures into dentine (chipped tooth) and luxation injuries (tooth loosening) account for 30% and 10% of all tooth trauma respectively, avulsion injuries (tooth knocked out of socket) make up only 2% of dental injuries [50, 51].

The consequences of dental trauma include not only pain and loss of function but also, as the teeth most frequently affected are upper front teeth [52], psychological repercussions. Children who experience moderate to severe tooth injuries have been shown to have reduced self esteem [15].

Figure 6. The proportion Northern Ireland children with at least one permanent incisor affected by trauma.



Source: North-South Children's Dental Survey 2002 [28]

The cost of treating dental trauma per tooth affected is considerably greater than the cost of treating dental decay. In part, this is due to the need to restore not only dental function but also dental aesthetics. Furthermore, as tooth injuries often occur in the young, restorations need to be replaced many times over the lifetime of the patient and each subsequent restoration tends to be more complex than the last. Estimates from Scandinavia place the cost of treating dental trauma at US$3.2m per million population (mid-1990's prices) [53].

In the UK and Ireland many damaged front teeth are surprisingly not treated [28, 49]. This situation appears to be more related to a lack of willingness on the part of children or parents to use available services rather than a lack of access to appropriate dental care.

3.3.2 Prevention of Dental Injuries

According to international epidemiological studies [51, 54] the most common causes of trauma to permanent teeth are:

- Falls (approximately 25%)
- Sports injuries (approximately 20%)
- Recreational bicycle injuries (approximately 16%)

Most injuries take place at home, with school being the second most common location.

Primary prevention (preventing the initial injury) of dental trauma is therefore difficult. Children with very prominent front teeth have been shown to be more likely to experience tooth damage [55] and orthodontic treatment may be used to reduce this

risk. The wearing of mouthguards for contact sports helps to protect against tooth, jaw and concussion injuries but their expense and the fact that only one fifth of dental injuries are related to sporting activity limits their cost-effectiveness [35, 56]. While their use in contact sports is advocated, health service funded mouthguard schemes are not.

Recommendation 3.10
Oral health professionals at all levels should work with national sporting organisations, local sports clubs and sports coaches to ensure that it is a requirement for all participants in contact sports to wear a mouthguard.

The prognosis of severe dental trauma is greatly influenced by the immediate management of the injured tooth. An awareness of how to provide first aid for tooth injuries among teachers, sports coaches, leisure centre staff and parents would significantly improve outcomes in these cases.

Recommendation 3.11
Oral health professionals at al levels should work in partnership with those who teach, train and care for children to improve the immediate management of dental trauma.

3.3.3 Non-accidental Injury

While dentists are in a position to occasionally detect the physical signs of child abuse, many are aware of what to look out for or what action to take if they suspect abuse [57].

Recommendation 3.12
Health Boards should examine the possibility of providing training to highlight the dentists' role in the detection and multidisciplinary management of suspected cases of child physical abuse.

3.3.4 Facial Injuries

The 34% reduction in facial trauma due to road traffic accidents that occurred in the UK from 1977 to 1987 is an outstanding example of effective public health action [58]. However, over the same period, the rise in facial trauma due to assaults was such that the overall incidence of facial injury actually increased [58]. Since then, these trends have continued. It was estimated, in 1998, that a quarter of the 500,000 people who experience facial trauma each year do so as the result of an assault [59].

Many assaults that result in facial injuries are associated with alcohol consumption. Among young men, in particular, injuries due to interpersonal violence tend to occur in and around bars. Among women, the tendency is for them to occur at home, possibly as a result of domestic violence [60].

Like dental trauma, the consequences of facial trauma go beyond the physical injury. Psychological and emotional impacts can persist for many years, lowering self-esteem and limiting social activity.

3.3.5 Prevention of Facial Injuries

It is estimated that more than half of all assaults are associated with alcohol consumption and that 15% of road traffic accident victims have consumed alcohol within four hours of their injury [59].

Recommendation 3.13
Oral health professionals at all levels should work in partnership with schools, local councils and other health professional to ensure that the public are aware of the risks to health caused by excessive alcohol consumption.

Bar glasses are used as weapons in 8% of assaults involving the face [59]. The injuries that result may be particularly disfiguring with 75% predicted to be "noticeable" or "very noticeable" in 6 months time. Three quarters of glasses used in assaults are not broken in advance, but rather shatter on impact with the face [61]. Use of safe glasses that are more resistant to impact and that do not break into sharp shards would therefore reduce both the frequency and the severity of these types of injury.

Recommendation 3.14
The DHSSPS and Health Boards should work with local councils, safety organisations and licensed premises to increase the use of "safe" glasses.

Falls among adults are another common cause of facial injury [62]. Falls occur most frequently among older people and, as the numbers of elderly will rise substantially over the next ten years, are likely to become an increasing cause of injury.

Recommendation 3.15
Oral Health professionals should be aware of the causes of falls among older people and should support local and regional programmes for falls prevention.

Related Documents

- Taskforce on Obesity in Children and Young People
- Strategy to reduce alcohol related harm
- Tackling Violence at Home
- Creating a safer Northern Ireland through partnership: A Community Safety Strategy
- Home Accident Prevention Strategy - Consultation Report

3.4 Dentofacial Irregularities

At age ten, approximately one third of children have a "great" or "very great" need for orthodontic treatment [42]. In the past it was believed that dentofacial irregularities such as severe crowding of the teeth could jeopardise oral health but this is no longer thought to be the case [63]. To the individual, the main consequences of misaligned or malformed teeth are felt in terms of psychological well-being and social embarrassment. These very real restrictions on quality of life are the main indications for health service orthodontic treatment. However, some of the demand for orthodontic treatment is driven by a desire for improved appearance and treatment for this reason is not within the remit of health service dentistry.

Recommendation 3.16
The boundaries of orthodontic treatment for health reasons and orthodontic treatment for purely cosmetic reasons should be clearly defined in the strategies for the GDS and the CDS.

Cleft palate is a defect in the roof of the mouth caused by incomplete development of the palate before birth. Cleft lip, a related condition, is a gap in the upper lip. The incidence of cleft lip or palate in Northern Ireland is around 1 in every 800 live births and this similar to that found in the rest of the UK [64]. The cause of cleft lip and palate is multi-factorial with both genetic and environmental factors involved. At present it is not possible to prevent this condition. Successful treatment and

management of this condition requires the concerted efforts of a highly experienced and specialised multidisciplinary team.

3.5 Children with Disabilities

It is difficult to determine the number of children or adults in Northern Ireland with a disability. There are two main reasons for this:

- A variety of definitions of the term "disability" are in use;
- There is no comprehensive data source for individuals with disabilities.

According to the Health and Social Care Needs and Effectiveness Evaluation 2002, the prevalance of disability in Northern Ireland is higher than that in the rest of the UK [65]. In Great Britain from 1990 to 2000 the prevalence of mild disability (appendix 3a) among 0 to 19-year-olds remained relatively constant at around 18% and, in the same period, the prevalence of severe disability (appendix 3b) for 0 to 16-year-olds was approximately 0.08%. However, the 2001 Northern Ireland census [66] found that there were 18,599 0 to 16-year-olds with a "limiting long-term illness" which equates to 6.4% of this age group.

Regardless of how the baseline figures are defined, it seems likely that the prevalence of disability in Northern Ireland will increase. This will, at least in part, be due to better survival rates for neonates with disabilities and increased life expectancy for adult with disabilities [65].

Within Northern Ireland there is little standardised information on the oral health needs of children with disabilities. However, research carried out in other parts of the United Kingdom [67-69] suggests that:

- Levels of dental disease for disabled children are comparable to the population at large;
- Children with disabilities have poorer oral hygiene levels;
- Levels of unmet need are higher among those with disabilities.

The detection and management of dental disease in children with disabilities can be very challenging. Prevention is therefore of paramount importance. However, due to their disabilities many of these children are dependant upon carers for their oral hygiene, feeding and the identification of oral health problems. It is essential that carers are aware of the importance of diet in maintaining oral health and have the necessary skills to undertake oral hygiene measures for these children. Furthermore, carers should regularly inspect the child's mouth and should be capable of detecting, at an early stage, any changes that may necessitate professional intervention.

Recommendation 3.17

Nursing staff and trained carers of children with disabilities should receive an oral health module that includes:

- Prevention of oral disease through healthy diet and oral hygiene measures;
- Simple oral assessment for early signs of oral disease;
- Information on how to access dental services.

Parents and other carers should be given advice on maintaining oral health.

Recommendation 3.18
The care standards for children's special schools or residential care homes should require that:

- Each child has their oral health assessed by a dentist annually and that each individual's care plan has oral health input;
- When an oral health care need is identified appropriate action is taken;
- There is a policy for preventing oral disease through a healthy diet and oral hygiene measures;
- Arrangements are in place with local dental services to provide dental care when the need arises.

Recommendation 3.19
Trusts should ensure that, where necessary, appropriate transport is available to allow children with mobility problems to access oral care.

The terms "children with disabilities" or "children with special needs" cover a wide variety of conditions whose impact on daily living may range from mild to profound. Similarly, oral health status may vary by the child's disabling condition and the severity of the impairment. The level of independence enjoyed by the child also influences oral health. Children who are, at least to some extent, able to control their diet tend to have more dental decay. In order to develop and implement preventive programmes for this heterogeneous group and to effectively plan services it is necessary to have a full and accurate regional overview of their oral health care needs.

Recommendation 3.20
In order to gain a regional perspective on the issues faced by this group, needs assessments should be carried out to agreed protocols throughout Northern Ireland and reported in a standard form.

A survey in the NHSSB found that most General Dental Practitioners provide treatment for patients with special needs albeit mainly those with mild impairments [(70)]. Most of these practitioners had never received any training in the dental management of patients with disabilities. The bulk of dental care for children with more severe disabilities is delivered through the Community Dental Service. Many Community Trusts carry out annual screenings for oral disease in all children at special schools and residential homes in their area, although this is not a statutory requirement. Children found to have a treatment need may have simple procedures carried out on a domiciliary basis with more advanced work undertaken at the community dental clinic. For those children requiring extensive treatment and/or with profound disabilities that prohibit treatment in the community clinic, treatment under General Anaesthesia[§§§] may be necessary. There are seven centres in Northern Ireland that provide this specialist service. Recently, in some areas, the need for this type of care has exceeded the capacity of the health service to provide it. There now is a requirement for a regional review of dental treatment provision for special needs patients under General Anaesthesia so that the future requirements of the service in relation to manpower, training and facilities can be planned (see **Recommendation 5.2**).

[§§§] On some occasions, treatment under intravenous sedation may be a suitable alternative

Recommendation 3.21

The training of dentists, dental nurses, hygienists and therapists should include practical experience in the management of those with special needs. Appropriate postgraduate training should be available to those who wish to develop their skills in the treatment of the disabled.

Related Documents

- A Review of the Community Dental Services
- Care standards for children's special schools and residential care homes
- Clinical Guidelines & Integrated Care Pathways for the Oral Health Care of People with Learning Disabilities[****]

[****] Produced as a joint initiative with the Development Group for Community Dental Practice of The Royal College of Surgeons of England and funded by the Diana Princess of Wales Memorial Fund

4. Adult Dental Health

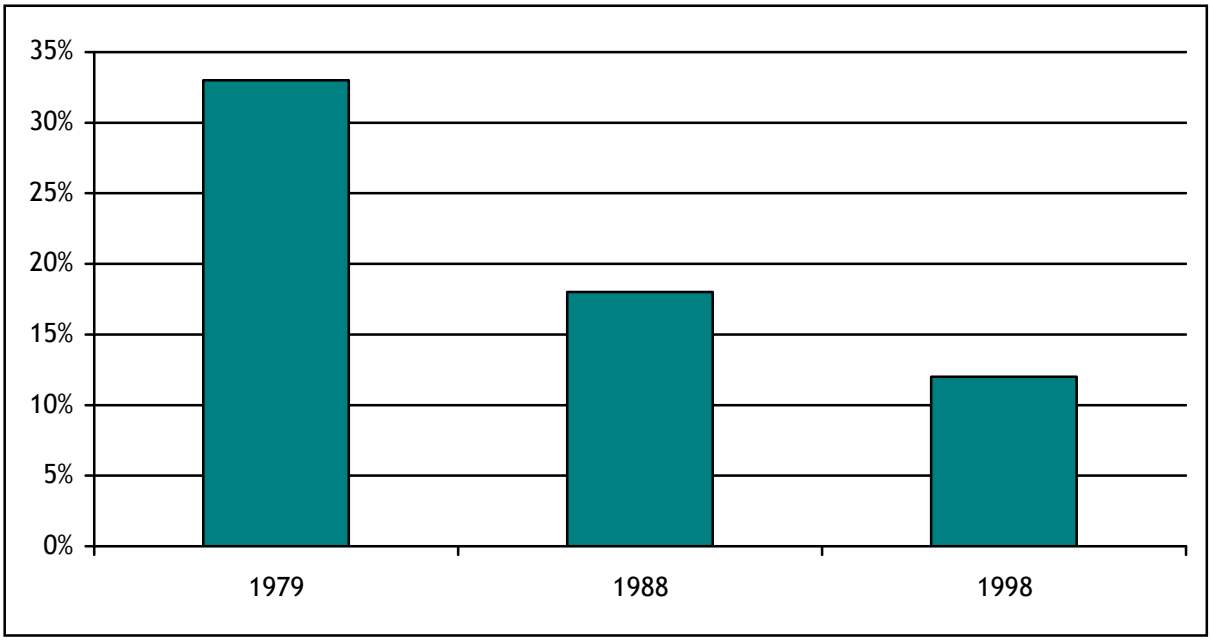
Oral diseases have a significant effect on the everyday life of among adults in Northern Ireland. Those with tooth decay and gum disease may well experience pain, discomfort and limitation of function. There may be feelings of embarrassment over the poor appearance of teeth and in some cases this can make individual's limit or avoid social contact. There is also an impact on working lives. In 1998, 45% of men and 41% of women who work full-time said they usually took time off work to attend a dentist [71].

The oral health of the adult population may be gauged in a number of ways. In broad terms the commonly used measures are; the condition and number of teeth, the condition of the periodontal tissues (gums) and the impact on quality of life to the individual.

4.1 Number and Condition Of Teeth

In 1998 one in eight (12%) adults in Northern Ireland had no natural teeth [71]. While this figure may seem disappointing, it does represent a considerable improvement on previous survey findings (figure 7).

Figure 7. The proportion of NI adults without any natural teeth



There is a strong relationship between relative deprivation and not having teeth. Only 6% of those from the highest social classes (I-IIINM) are without any teeth, compared to 20% of those in the lowest classes (IV and V).

Edentulousness (not having any natural teeth) increases with age.

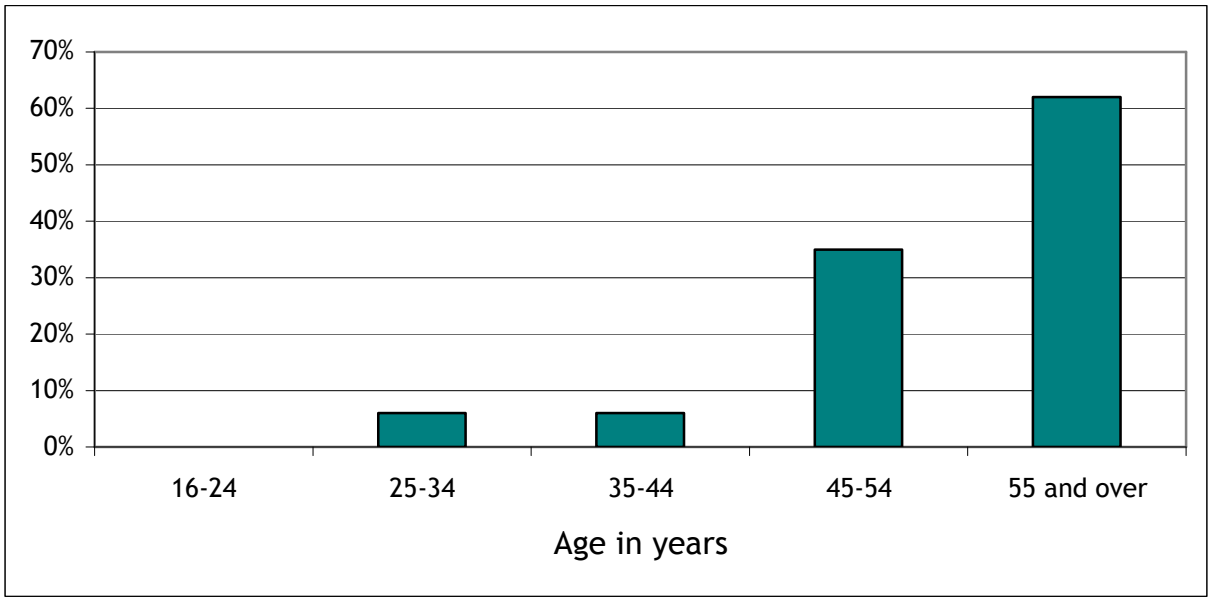
Forty four percent of all 65-74 year olds and 60% of all those 75 years and over have no natural teeth. The trend towards increasing life expectancy means that there will still be significant numbers of edentulous individuals in the Northern Ireland population for many years to come.

The reduction in complete tooth loss means that levels of edentulousness in Northern Ireland are now similar to those in England. There are several reasons for this improvement:

- The introduction of fluoride tooth pastes into NI in the early 1970's;
- Higher value placed on dental health by patients/individuals;
- Movement from an extraction to a restorative philosophy;
- Improved restorative techniques.

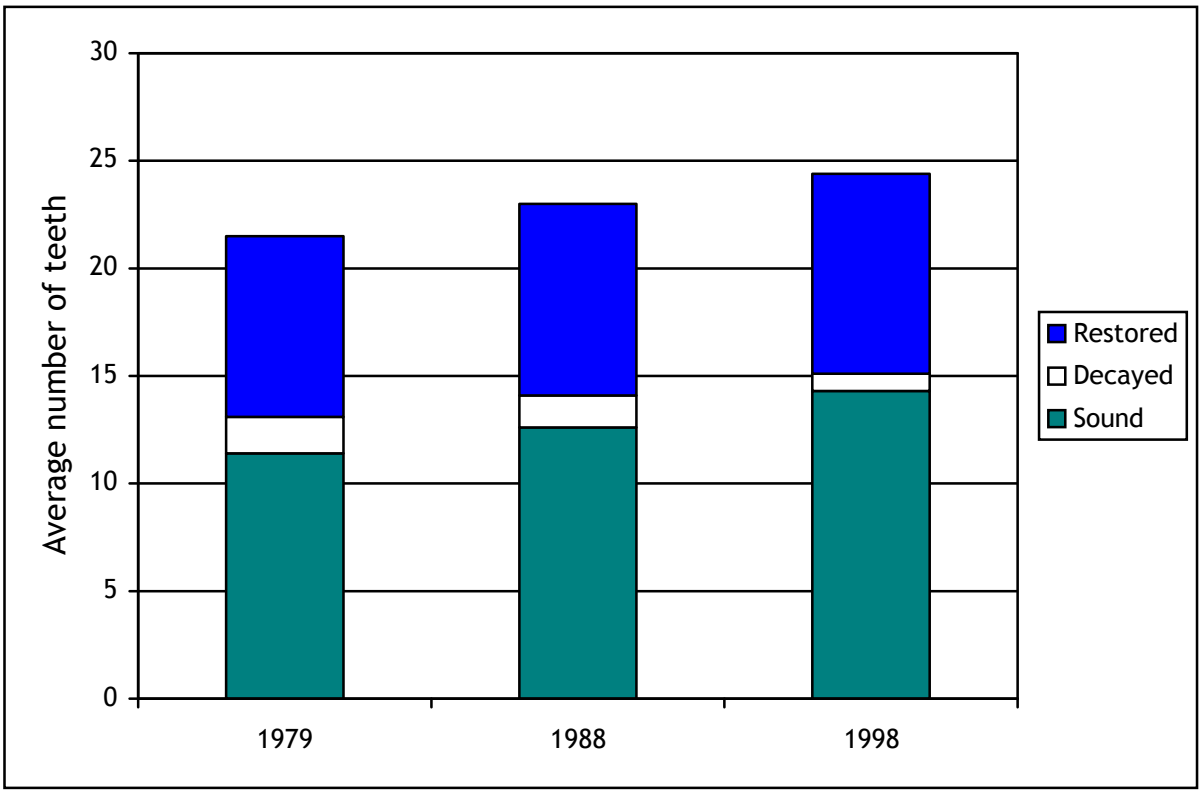
In tandem with the reductions in edentulousness there has also been a corresponding increase in the average number of teeth per person from 21.9 in 1979 to 24.5 in 1998 [71]. Nevertheless, there are many older adults who have fewer than 21 teeth, considered to be the minimum number of natural teeth needed for a functional dentition (figure 8) [71]. As a rule of thumb, when the number of standing teeth drops below 21, people experience difficulty with eating and comfort. Overall in 1998, 19% of Northern Ireland adults who were not edentulous had less than 21 teeth [71]. This is slightly more than the United Kingdom average of 17%. The average number of teeth per person and the proportion of individuals with less that the functional minimum number of teeth are related to socio-economic status. Using either measure, people from socially disadvantaged backgrounds have poorer oral health.

Figure 8. The proportion of dentate adults with less than the minimum number of teeth required for adequate function.



In 1998, forty one percent of adults in Northern Ireland had at least one tooth that was either decayed or needed a filling replaced. Among this group the average number of teeth with tooth decay or an inadequate filling was two [71]. Although the unmet treatment need in adults has decreased over the last 25 years (figure 9), there is still a significant amount of individuals requiring restorative dental treatment. This restorative treatment need is highest in the lowest socio-economic groups.

Figure 9. Changes in the condition of adult teeth 1979-98.



Source: 1998 UK Adult Dental Health Survey [46]

4.1.1 Root Caries

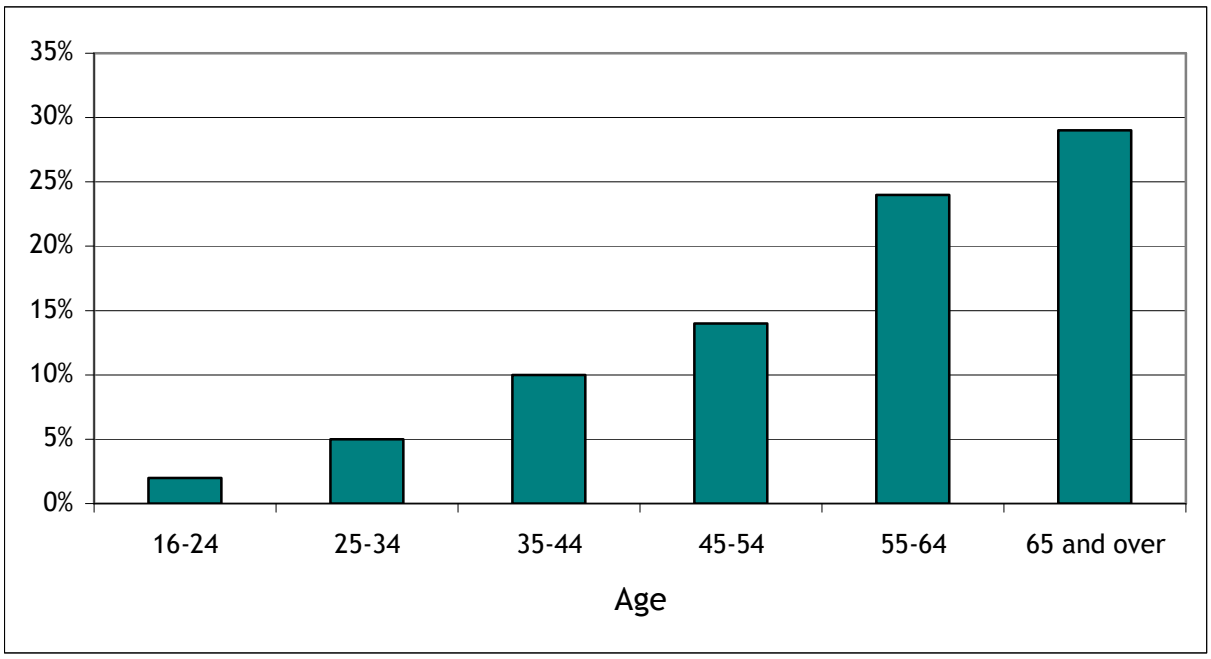
While almost all dental decay in children and young adults occurs on the crown of the tooth, in older adults decay may also arise on the root of the tooth (root caries). Root caries is more common in older adults for the following reasons:

- As people age their gums tend to recede exposing the root of the tooth;
- More elderly people are retaining more teeth later into life;
- Older individuals may have reduced manual dexterity and their ability to remove plaque is therefore diminished;
- A greater proportion of older people have partial dentures. These retain plaque thereby increasing the probability of root caries developing;
- Older people have drier mouths often due to physiological aging and polypharmacy (the taking of multiple medications). Without the protective effect of saliva the risk of developing root caries is increased;
- Some older people find it difficult to manage hard, coarse foods. They may prefer a softer diet and these often have a greater potential to cause decay.

Among those with teeth, aged 65 years and over, 29% have at least one decayed root surface (figure 10) [71]. Within this 29% the average number of teeth with decayed roots is 2.3.

Tooth decay, of both the crown and root of the tooth, is likely to be an increasing problem among the elderly as life expectancy increases and more people retain more teeth into old age.

Figure 10. The proportion of United Kingdom adults with at least one decayed root surface.



Recommendation 4.1
The philosophy of lifelong prevention of dental disease should be adopted by all dentists.

Recommendation 4.2
Older adults have the poorest levels of dental attendance. Innovative approaches should be employed by the DHSSPSNI, Health Boards and General Dental Practitioners to increase dental service utilisation among this group.

Recommendation 4.3
The levels of root caries in older people living in institutions has been shown to be almost twice that of those living in the community [72]. Boards and Trusts should continue to work with residential and nursing home staff to improve levels of oral hygiene and to reduce the cariogenicity of foods provided.

Recommendation 4.4
The awareness among carers of the elderly of the risk factors for the development of tooth decay should be raised. Training should be provided to all carers on how to effectively clean their client's teeth and dentures.

Target 4.1
To reduce the proportion of adults without any natural teeth to 8% or less by 2008 (baseline 12% in 1998).

Target 4.2
To increase the proportion of adults with 21 or more natural teeth to 78% by 2008 (baseline 71% in 1998).

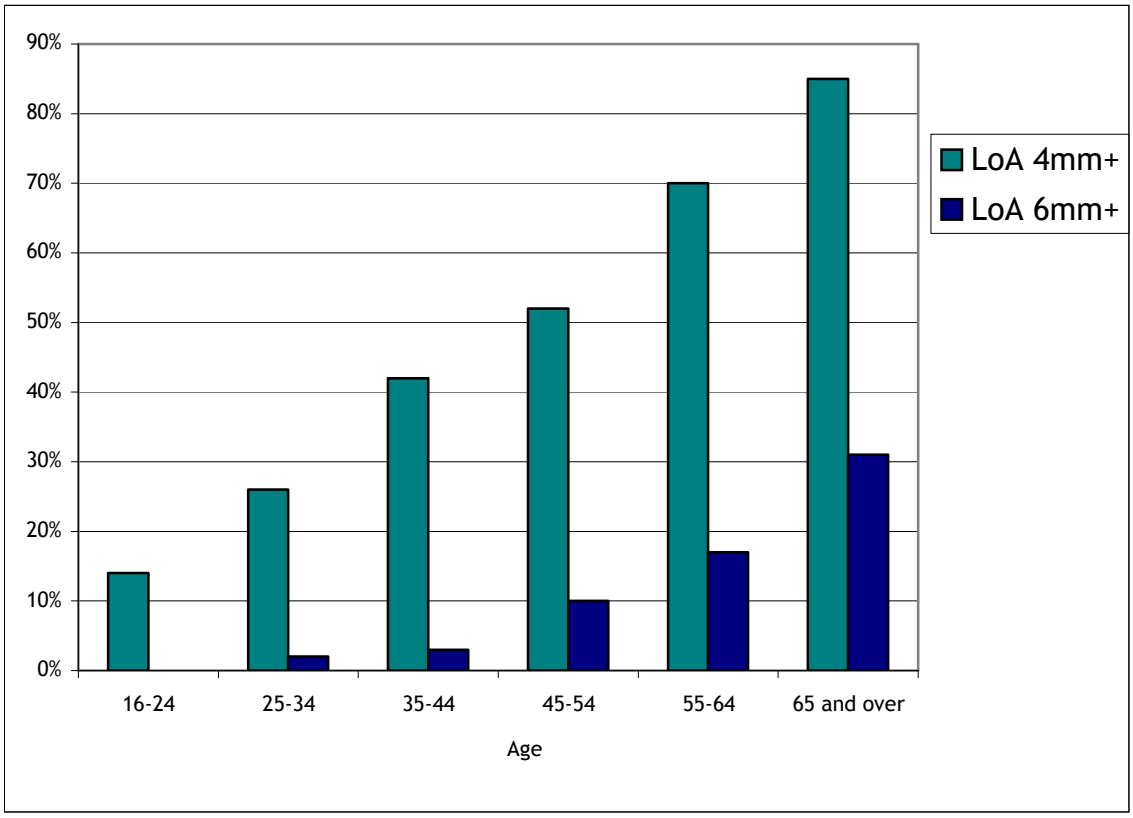
Target 4.3
To reduce the proportion of dentate adults with at least one tooth with active root decay to 10% by 2008 (baseline 12% in 1998).

4.2 Periodontal Disease (Gum Disease)

Periodontal disease covers a group of inflammatory conditions that affect the supporting tissues of the teeth. Gingivitis, where the inflammation is limited to the gums only, is found in most children and adults. It is caused by the bacteria within plaque irritating the gingival tissues and is reversible. When the inflammatory process moves beyond the gums into the bone and attachment fibres supporting the tooth it is called periodontitis and is generally not reversible. This destructive disease is experienced to some extent by the majority of adults worldwide. In severe cases it can lead to premature tooth loss.

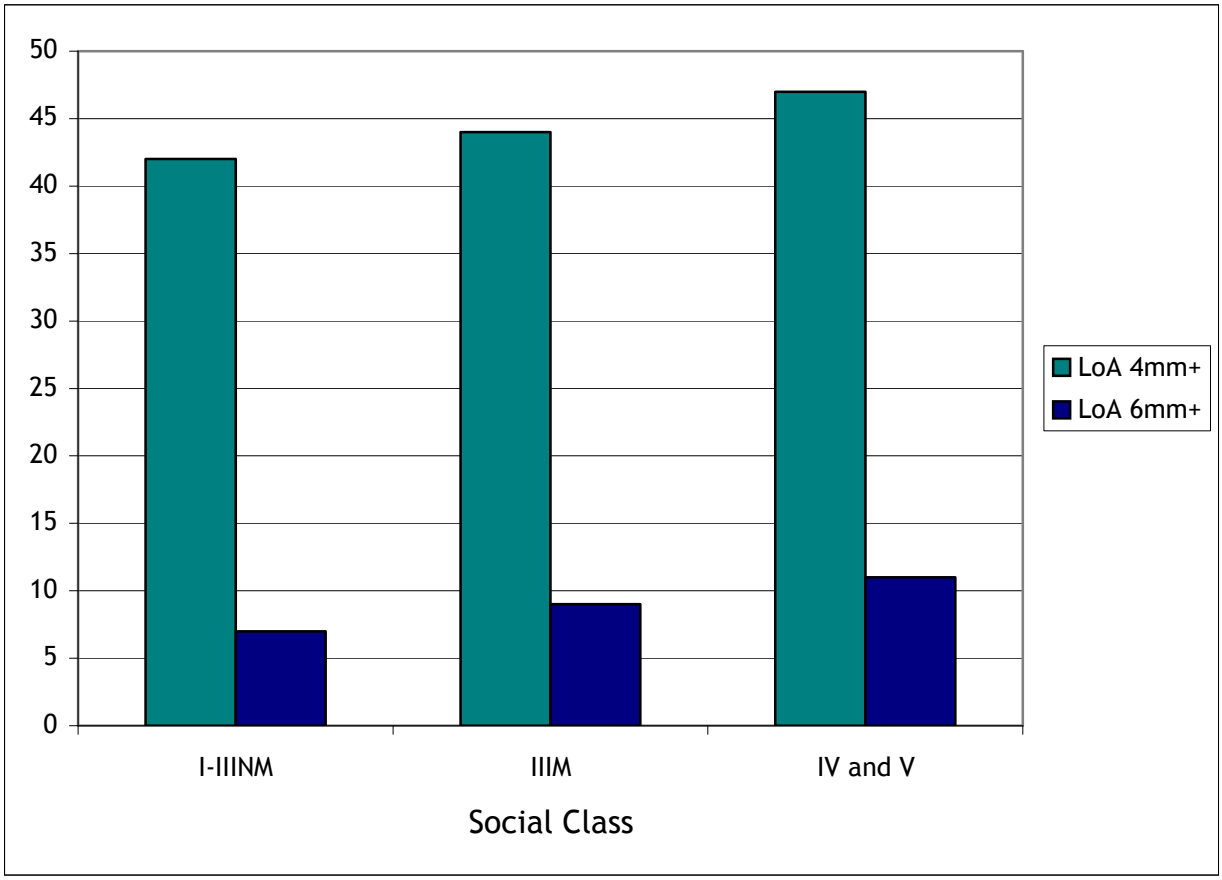
In all adult populations the loss of support to teeth caused by periodontitis increases with age (figure 11) [71]. For the individual, however, this is not inevitable and good oral hygiene and lifestyle practices will reduce the risk of loss of support. Some authors [73] argue that the goal of periodontal care should be the preservation of a functional dentition throughout life and not the removal of all signs of periodontal disease.

Figure 11. The proportion of adults of different age groups with at least one tooth with Loss of Attachment (LoA) of either 4mm or 6mm.



The relationship between destructive periodontal disease and social deprivation is not clear-cut. Large US studies have found a statisically significant positive association between deprivation and loss of periodontal attachment [74b]. However, while the 1998 UK Adult Dental Health Survey showed a discernable trend of increased loss of attachment with increased material disadvantage, this did not reach statistical significance (figure 12) [71].

Figure 12. The proportion of adults of different socio-economic groups with at least one tooth with Loss of Attachment (LoA) of either 4mm or 6mm

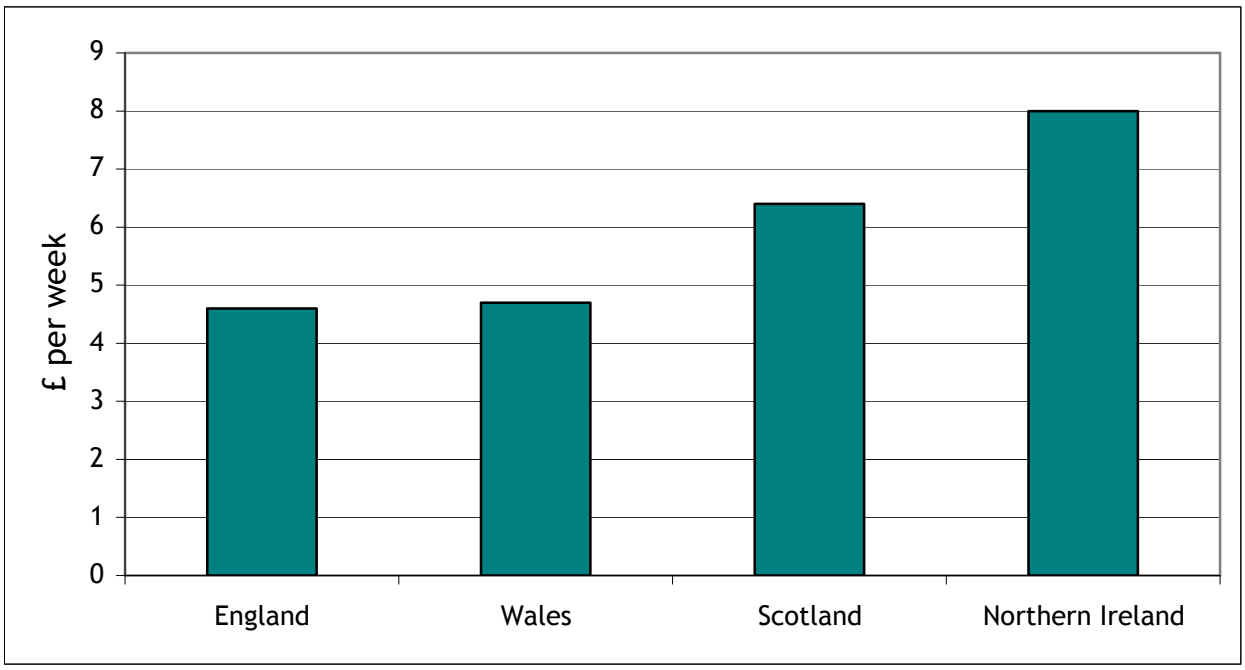


Gingivitis is caused by the accumulation of plaque at the gum margins and is an indicator of inadequate oral hygiene. While gingivitis is widespread, in most cases it does not progress to the more severe forms of destructive periodontal disease. However, because it is not possible to identify those individuals who will go on to develop periodontitis, the cornerstone of prevention must be improved oral hygiene. In Northern Ireland, two thirds of all dentate adults have visible plaque on their teeth [(71)] and as a population we brush our teeth less often than the United Kingdom average [(71)]. The trend towards increasing tooth retention among older individuals means that more teeth are at risk from periodontal disease in the older age groups than there were previously. This fact, coupled with the decreased manual dexterity of the elderly could result in a increased need for periodontal services in this group.

Apart from plaque, the other modifiable risk factor for destructive periodontal disease is smoking. The average family expenditure on cigarettes in Northern Ireland is higher than any other part of the United Kingdom (figure 13) [(31)].

If the goal of a preventive strategy for periodontal disease is to be the preservation of a functional, aesthetically and socially acceptable dentition for the lifetime of the individual, and we accept that it is not possible to accurately identify in advance those individuals who will go on to develop destructive periodontal disease, then a population approach needs to be adopted.

Figure 13. The average weekly spend per household on cigarettes.



Recommendation 4.5

Oral health professionals should ensure that they effectively communicate to patients the importance of good oral hygiene and not smoking in the maintenance of healthy periodontal tissues. The primary dental care system should make it feasible for dentists to spend time conveying these messages to patients on a one-to-one basis.

Recommendation 4.6

Training in brief interventions for smoking cessation should be widely available to primary care oral health professionals and the remuneration system should make it feasible for them to offer this service.

Recommendation 4.7

When children are young the probability of establishing healthy lifetime habits is greatest. Oral hygiene should be integrated into the teaching of general body cleanliness education at both pre-school and primary school. With older children the promotion of oral hygiene as grooming behaviour may be an alternative approach.

Target 4.4

To reduce the proportion of dentate adults with visible plaque present on their teeth from 66% to 50% by 2008.

Target 4.5

To reduce the proportion of dentate adults with attachment loss of 4mm or more on at least one tooth from 39% to 34% by 2008.

Target 4.6

To reduce the proportion of adults who smoke from 27% to 25% by 2006/7 [74a].

4.3 Quality Of Life Measures

The number of teeth present, their condition and the condition of the periodontal tissues are all professionally defined (normative) measure of oral health. No account is taken of factors which affect the individual's quality of life such as oral function and aesthetics. Socio-dental indicators have been developed to reflect the impact that oral diseases affect physical, psychological and social well-being. One commonly used impact measure is the Oral Health Impact Profile (OHIP-14) [(75)].

This index is based on individuals' perceptions of their own oral health and how it has affected their everyday life over the previous year. The OHIP score is obtained from a standardised 14-item questionnaire. This explores individual's experiences in seven domains including pain, functional limitation and psychological disability.

The OHIP data from the 1998 Adult Dental Health Survey shows that socially disadvantaged groups reported a greater number of impacts to their everyday life due to oral health problems when compared to more affluent groups. People with only natural teeth and those who attended a dentist regularly reported fewer impacts to their everyday life.

Target 4.7
By 2008 reduce the mean number of reported problems per adult due to oral conditions from 1.4 to 1.1.

Target 4.8
By 2008 reduce the proportion of adults reporting at least one problem related to oral health from 47% to 40%.

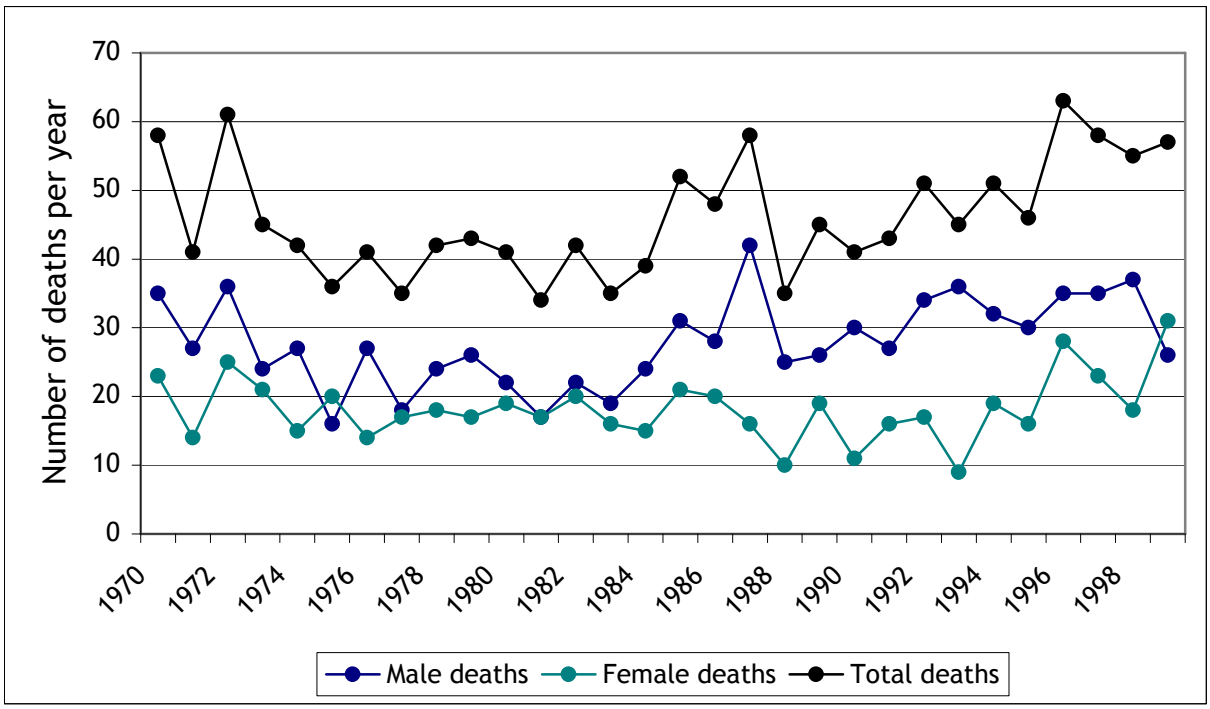
Other relevant documents
• Investing for Health
• Tobacco Action Plan 2003-2008

4.4 Oral Cancer

In Northern Ireland during the year 2000, 122 people, 78 men and 44 women, were diagnosed with cancer of the lip, oral cavity or pharynx (ICD-10 C00-C14). The period 1993 to 2000 saw a significant decrease in the total number of new cases of oral cancer, although these figures mask different underlying trends for males and females (appendix 4a). While the number of incidence cases among males decreased markedly in the 1990's, it has remained relatively constant for females. The same pattern is also found in new cases of lung cancer and reflects the decreasing levels of smoking in men and the constant levels of smoking in women (appendix 4b).

Oral cancer causes around fifty deaths each year in Northern Ireland and, in comparison to other cancers, it is the ninth biggest killer. Due to the relatively small numbers involved, mortality levels in Northern Ireland fluctuate but the trend since 1990 appears to be that numbers of oral cancer deaths are constant in men and increasing in women (figure 14).

Figure 14. Deaths due to oral cancer (ICD-10 C00-C14) among men and women in Northern Ireland 1970 to 1999



Source: International Association of Cancer Registries

Compared to the rest of the British Isles, age standardised mortality rates for males in Northern Ireland are similar to those found in England and Wales, and lower than those of both Scotland and the Republic of Ireland (appendix 4c). For females the small numbers involved make comparison of the data difficult, but Northern Ireland appears to have similar age standardised mortality rates to England and Wales and the Republic of Ireland but lower rates than those of Scotland (appendix 4d).

What the statistics cannot show is that behind every diagnosed case of oral cancer there is stress, anxiety and worry, not just to the patient but also to their family. In addition, there is the physical discomfort of treatment that can last many months and the impact that facial surgery may have on quality of life. Treatment is also costly. Prevention of oral cancer, primary, secondary and tertiary is therefore of great importance.

Oral cancer has well established risk factors (table 3). The epidemiological data show that there is a synergistic effect between alcohol consumption and smoking so that the risk of developing oral cancer is multiplied many times when both behaviours are present in the same individual.

Table 3. Risk factors for oral cancer.

- Smoking tobacco
- Chewing tobacco
- High alcohol consumption
- Presence of potentially malignant lesions

Primary prevention must, therefore, be based upon reducing levels of smoking and alcohol consumption in the population. Of course, smoking and drinking alcohol are risk factors for other cancers and for Northern Ireland's biggest killer – heart disease.

There is therefore a clear-cut opportunity for a Common Risk Factor Approach (CRFA) in dealing with these conditions. Dental practitioners have a role to play in offering smoking cessation advice and alcohol counselling and all health professionals should endeavour to influence local and public policy so that levels of smoking and excessive alcohol consumption are reduced.

There is strong evidence that a diet rich in fruit and vegetables confers a protective effect against many cancers, and it is likely that oral cancer risk could also be reduced improved diet. Again an opportunity exists for a CRFA.

Secondary prevention with oral cancer essentially means screening. Mass screening for oral cancer is not recommended because:

- Prevalence rates are very low;
- When prevalence rates are low many false positives occur. This is distressing to the individual and costly the health system;
- The natural history of oral cancer is not fully understood;
- There is little evidence to support the effectiveness of mass screening in improving outcomes for oral cancer.

However, opportunistic screening is of value. Therefore dentists seeing "at risk" patients for routine dental examinations should carry out a thorough and systematic examination for intra-oral malignant and potentially malignant lesions. Individuals may be considered to be at risk if:

- They are aged over 50 years (eighty-five percent of cases occur in this age group);
- They smoke;
- They are heavy drinkers.

Recommendation 4.8

Dentists Should Opportunistically Screen "At Risk" Patients For Oral Cancer.

Recommendation 4.9

The uptake of dental services by older adults who live independently is low. A concerted effort needs to be made to encourage regular asymptomatic attendance in this group, who by virtue of their age, are at greater risk of developing oral cancer.

Recommendation 4.10

Oral cancer has a positive association with social deprivation. Oral health professionals, working in partnership with other health professionals, educational bodies and relevant local stakeholders should continue to work towards increasing the consumption of fresh fruit and vegetables among all children, but particularly those from disadvantaged backgrounds.

For smoking cessation see **Recommendation 4.6.**

Other relevant documents
• Investing for Health
• Food and Nutrition Strategy and Action Plan
• Catering for Healthy Lifestyles
• Strategy to Reduce Alcohol Related Harm
• Tobacco Action Plan 2003-2008.

4.5 Older People

Although increasing age brings with it a higher probability of tooth loss, more elderly are now retaining more teeth into later life. However, these teeth are at a considerable risk from both caries and periodontal disease. Older people often favour a softer diet because it is easier to manage with less than a full complement of teeth. Softer diets often have greater potential to cause dental decay and this problem may be exacerbated by reduced levels of saliva and the frequent intake of highly sugared medicines. Recently, research has shown that the rate of tooth decay among the elderly on average exceeds that of adolescents [(76)].

The poorer levels of manual dexterity found in older people mean that plaque levels are higher and this increases the risk of periodontal disease. Partial dentures also accumulate plaque and may be difficult for some older people to adequately clean.

The greater risk of oral disease in this group, including oral cancer, make it particularly important that regular oral examinations are carried out. However, the over seventy-fives have the lowest attendance rate of any adult age group. Low dental service utilisation levels mean that opportunities for prevention are limited and that disease processes may be quite advanced at presentation.

The link between oral and general health is particularly obvious in the elderly. Not only do many serious systemic conditions, such as leukaemia have early oral manifestations that may hasten diagnosis but poor oral health is one of the main causes of nutritional deficiency in this group [(77)].

The age profile of the Northern Ireland population is changing. By 2014 there will be 55,000 more adults aged 65 and over than there are now. Many of these individuals will live with relative independence in their own homes. Some, however, will live in residential and nursing homes and will experience multiple health problems. Already the elderly exhibit marked inequalities in wealth and this is likely to worsen in the future.

Currently there is limited recognition of the importance of oral health in relation to the general health and well being of the elderly. Few multidisciplinary assessments have an oral health component and oral health is rarely integrated into care plans. Among carers of the independently living elderly and nursing and residential home staff there is a lack of basic oral health knowledge. Oral hygiene practices are often poor and diets have a high decay causing potential. In addition, many older people experience dry mouths as a result of medication and this increases their vulnerability to tooth and root decay.

Recommendation 4.11
An oral health assessment should form part of the multidisciplinary health assessment given to new residents of nursing and residential homes.

Recommendation 4.12
The Care Standards for residential and nursing homes currently being developed in Northern Ireland should include simple indicators that allow the quality of oral healthcare provided by the home to be determined.

Recommendation 4.13
The new Primary Care Dental Strategy should take account of the projected increase in treatment needs among older adults and consideration should be given to increasing dental service utilisation among this group.

Other relevant documents
• Investing for Health • National Service Framework for Older People • An Oral Health Survey of NHSSB Residents Aged 65 years and over

4.6 Adults with Disabilities

As with children, it is difficult to accurately determine the prevalence of disability among Northern Ireland adults. The recent Review of Disability Information Project [78] found that the Northern Ireland prevalence of disability (including physical, learning or sensory disability and mental illness) among those aged over 16 years ranged from 18% to 28%.

Similar variations exist in learning disability estimates. There are 8,500 individuals with a learning disability known to the health services here [65]. Mencap, however, estimate the actual number of people with a learning disability to be in excess of 33,000 people [79]. Neither source differentiates between adults and children. There are no data on the oral health status of learning disabled adults in Northern Ireland but work carried out in Britain and the Republic of Ireland [80, 81] indicates that the institutionalised learning disabled have:

- Poorer oral hygiene than the population at large;
- More unmet treatment need;
- A lower proportion of decayed teeth restored with fillings and a higher proportion of decayed teeth extracted.

Non-institutionalised adults generally have milder learning disabilities. Those that are known to dental services tend to have less unmet need than the institutionalised and are more likely to have decayed teeth restored than extracted.

There are an estimated 100,000 people in Northern Ireland with a physical or sensory disability and it is likely that this figure will increase [65]. The prevalence of disability rises with age so that currently 60% of those with a disability are aged 60 years and over. Underlying disease levels in this group are similar to the population average, however, levels of unmet treatment need are significantly higher. This is a reflection of the difficulties people with physical or sensory disabilities have historically had in accessing dental care. Recent legislative changes now require dental practices to make reasonable modifications to facilitate access by those with a disability. Furthermore, equality legislation underpins the rights of the disabled to equal standards of oral care.

Recommendation 4.14

Care standards for disabled adults in residential care should ensure that oral health is assessed regularly, that protocols are in place for dental; care to be provided when a need is identified and that there is a policy on the maintenance of oral health.

Recommendation 4.15

Trusts should ensure that, where necessary, appropriate transport is available to allow adults with mobility problems to access oral care.

Recommendation 4.16
Professionally trained carers of adults with disabilities should receive an oral health module that includes:

- Prevention of oral disease through healthy diet and oral hygiene measures;
- Simple oral assessment for early signs of oral disease;
- Information on how to access dental services.

Other carers should be given advice on maintaining oral health.

4.7 Adults with Mental Health Problems

It is estimated that at any one time in Northern Ireland around one fifth of the population are vulnerable to mental illness [82]. The most common disorders are anxiety and depression although schizophrenia, drug/alcohol addiction, eating disorders and dementia are experienced by large numbers of people.

Individuals suffering from psychiatric illnesses may have poor oral hygiene and a diet high in sugars. In addition, the prevalence of cigarette smoking is higher in this group as is dry mouth due to medication. Adults with mental health problems are therefore at increased risk of dental decay, gum disease and mouth cancer.

Among this population group there are additional barriers to accessing dental care. These include a lack of knowledge of what services are available and anxiety associated with dental treatment. The individuals themselves and their carers need to be made aware what dental services are available and how to access them. Dental teams should be aware of how a lack of empathy and understanding on their part can act as a barrier to the provision of dental care to those who suffer from metal illness.

Recommendation 4.17
The care standards for those with a psychiatric illness in residential care should ensure that an oral health assessment forms part of the general health assessment, that each individual's care plan should have oral health input and that each residential care home has a protocol to ensure all residents with an oral health care need have access to appropriate services.

Recommendation 4.18
Nursing staff and professional carers should receive training on simple oral assessment criteria, how to prevent oral disease in those with mental illness and how to access dental services.

Other relevant documents
• Promoting mental health strategy and action plan (2003-2008)

5. Dental Services

5.1 Access To Dental Services

Access to dental care services is essential for the maintenance of oral health. Access means more than services being situated conveniently. Accessible services should have suitable opening times, have good public transport links, have reasonable waiting times, be affordable to users and be free of cultural and social barriers [83].

Compared to the rest of the United Kingdom, Northern Ireland enjoys a very favourable dentist to population ratio (table 4). If dentists' commitment to health service dentistry (as opposed to private dentistry) is considered, then Northern Ireland ranks even further ahead of the other home countries.

Table 4. UK dentist: population ratios

Country	Number of people per Dentist
England	2673
Wales	2860
Scotland	2385
Northern Ireland	2225

Source: DPB (England and Wales), CSA (Northern Ireland), CSA (Scotland)

Unlike General Medical Practitioners and pharmacists, there are no restrictions as to where a General Dental Practitioner may set up a surgery. Dental practices are essentially small businesses and are subject to market forces. If it is not economically viable for a particular area to sustain a practice, for example due to low levels or attendance, then it is unlikely that the practice will survive. For this reason there is at least the potential for the distribution of General Dental Practices to be inequitable or even unequal. The stronger the influence of market forces, i.e. the greater the proportion of dental treatment carried out privately, the more likely the distribution of practices is to be skewed towards the more affluent areas.

There are 280 General Medical and 368 General Dental Practices in Northern Ireland [84]. However, the distribution of medical practices appears to be more equal than the distribution of dental practices (figure 15). The 10% of electoral wards located furthest from a medical practice are on average 8.5 km away. The 10% of electoral wards located furthest from a dental practice are on average 11.5 km away. Furthermore, while an Equality Impact Assessment found no evidence that the 1995 Oral Health Strategy or General Dental Service's policies had an adverse impact on any of the nine equality groups identified under Section 75 of the Northern Ireland Act, there was evidence to suggest that *"in the delivery of the policies some groups may have difficulty with regard to accessing services, information and advice."*

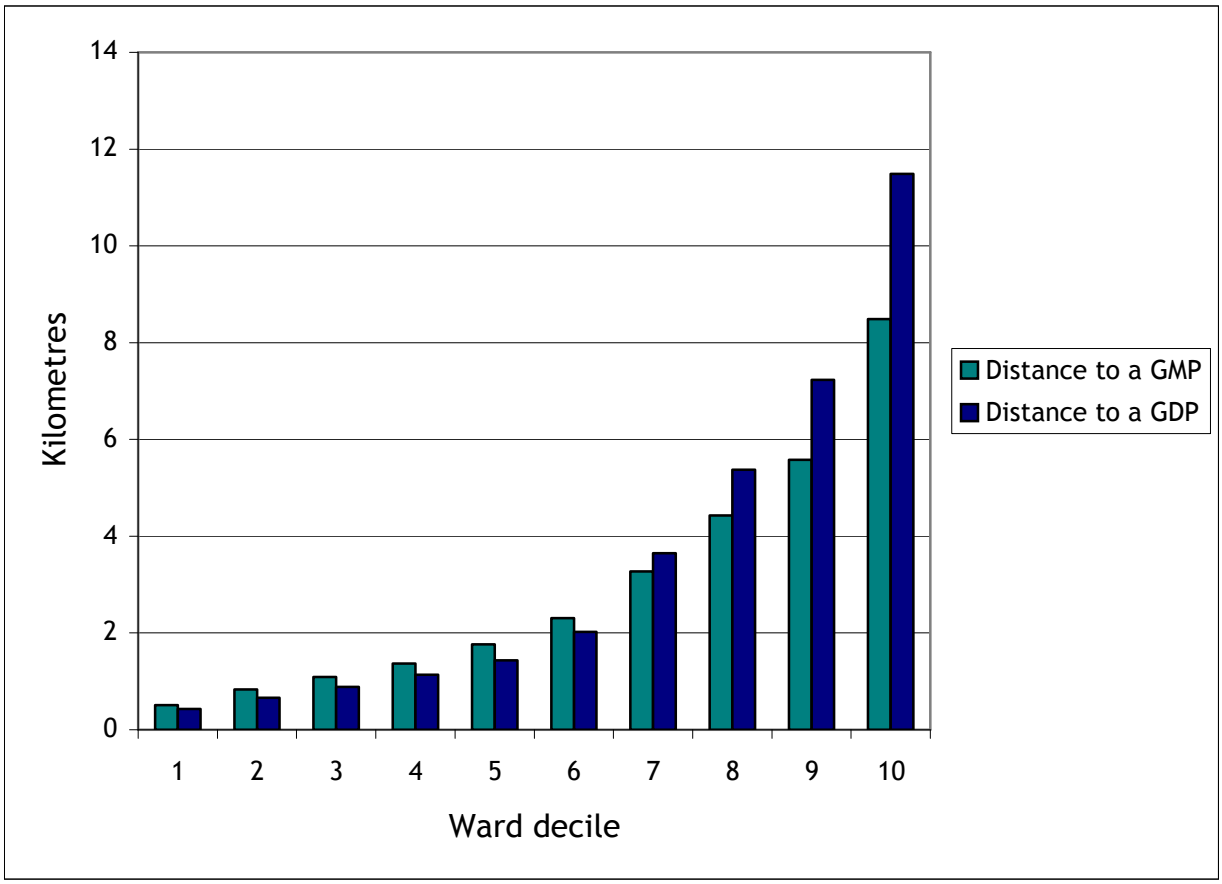
In spite of this access to dental services is currently not perceived as a problem by the Northern Ireland public. A recent telephone survey conducted among a representative sample of the adult population found that 95% of the 1,000 people questioned had never experienced difficulty accessing health service dental care. Similarly, the HPSS Satisfaction Survey [85] showed levels of satisfaction with health

service dentistry to be in excess of 90%.It will be a challenge for any reforms of the GDS and the CDS to maintain these high levels of access and satisfaction.

Recommendation 5.1

In modernising primary care dental services, comprehensive access to appropriate dental care should be safeguarded.

Figure 15. Mean distance to medical and dental practices by electoral ward decile (decile 1 = the 10% of wards with the shortest mean travelling distances to medical or dental practices).



5.1.1 Access for Those with Special Needs

While there does not appear to be an access problem for the vast bulk of the Northern Ireland population, there are sections of our society who do have difficulty accessing the dental care they need. In particular, individuals with special needs have encountered unacceptably long waiting lists for dental treatment under general anaesthesia in some areas. While the number of patients within this group has increased, the specialist services required for their dental care have failed to keep pace. As the proportion of the population with special needs increases this care gap will widen further.

The problem is a complex one that will require cooperation between dentists, anaesthetists and hospital managers to ensure that sufficient and protected theatre sessions are available to deliver the oral health care required by this vulnerable patient group.

Recommendation 5.2

Currently, the need for dental care for special needs patients significantly outstrips supply and it is likely this situation will worsen. The Chief Dental Officer should establish a multidisciplinary working group to examine the issue and develop an action plan to improve services for this group. As it may take some time to develop a

suitable long-term solution to this problem the working group should also investigate remedial measures that can be implemented quickly.

5.1.2 Access for the Socially Excluded

Social exclusion occurs when an individual or community experiences detachment from the rest of society due to, among other factors, poverty, unemployment, disability, lack of education, crime, addiction or ethnicity. Often the socially excluded will have several of these characteristics. Among the socially excluded groups known to experience access difficulties to primary health care are the homeless, travellers and ethnic minorities. Although these groups total more than 30,000 people in Northern Ireland, there is little information available on their oral health care needs or on their usage of dental services [86, 87]. Anecdotal information, however, suggests that both are poor.

Recommendation 5.3

A regional oral health care needs assessment and a simple survey of dental service usage should be carried out for homeless, travellers and ethnic minorities.

Other relevant documents
• Promoting the Social Inclusion of Homeless People
• Dental Care for Homeless People. A BDA document
• Investing for Health
• The Homelessness Strategy. The Northern Ireland Housing Executive

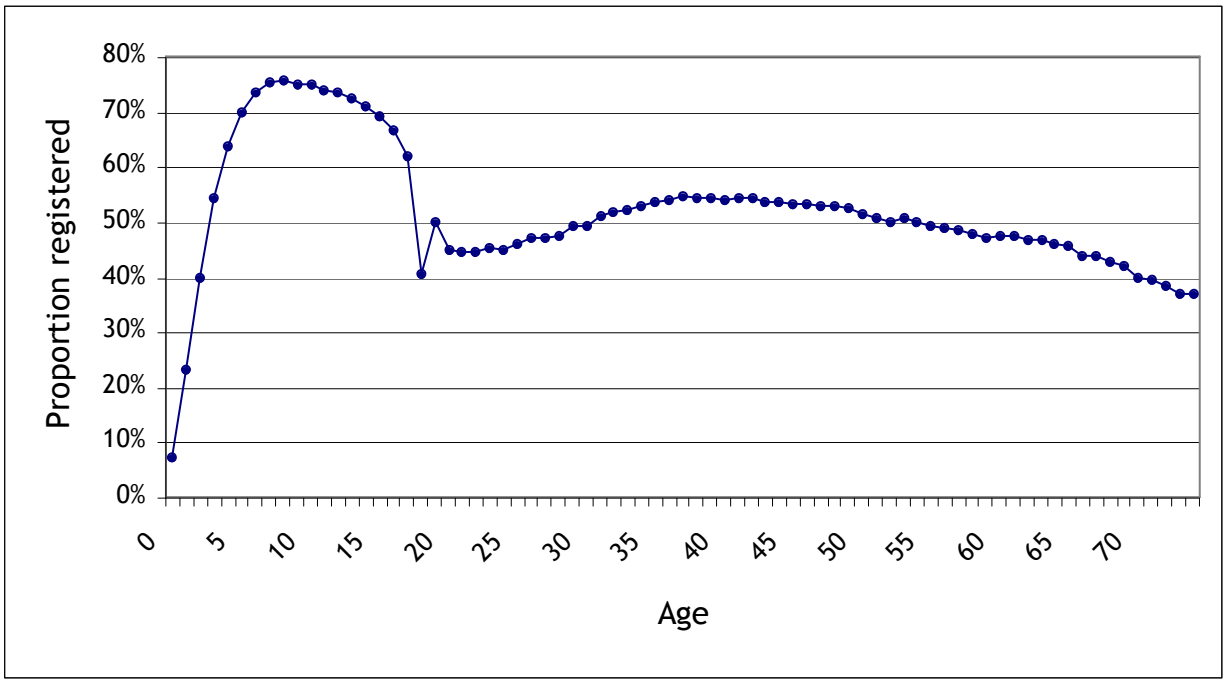
5.2 Uptake Of Dental Services

Like general practice doctors, general practice dentists' income is partly derived from capitation payments (i.e. payments made by the health service to the doctor/dentist for patients who are registered with them for care). However, unlike medical registration, dental registration is time-limited. If a patient fails to attend their General Dental Practitioner within a 15 month period then their registration lapses. The goal of this remuneration method, introduced under the 1990 dentist's contract, was to promote disease prevention over restoration and to encourage continuous dental health maintenance rather than periodic bursts of treatment [88]. The evidence on whether the registration/capitation system actually leads to an increased amount of effective prevention is equivocal [88, 89].

Dental registration data is useful because it can be used as a measure of dental service utilisation. However, dental registration relates only to attendance at a General Dental Practitioner. Information on usage of the Community Dental Services is not captured by these figures.

Within Northern Ireland, registration rates vary by age, social class and geographical area. The peak age for dental registration is 8 years old with a marked trough occurring at age 18 when universal free dental care ceases (figure 16). Service utilisation then increases up to age 40 when it once again begins to drop, this time without recovery.

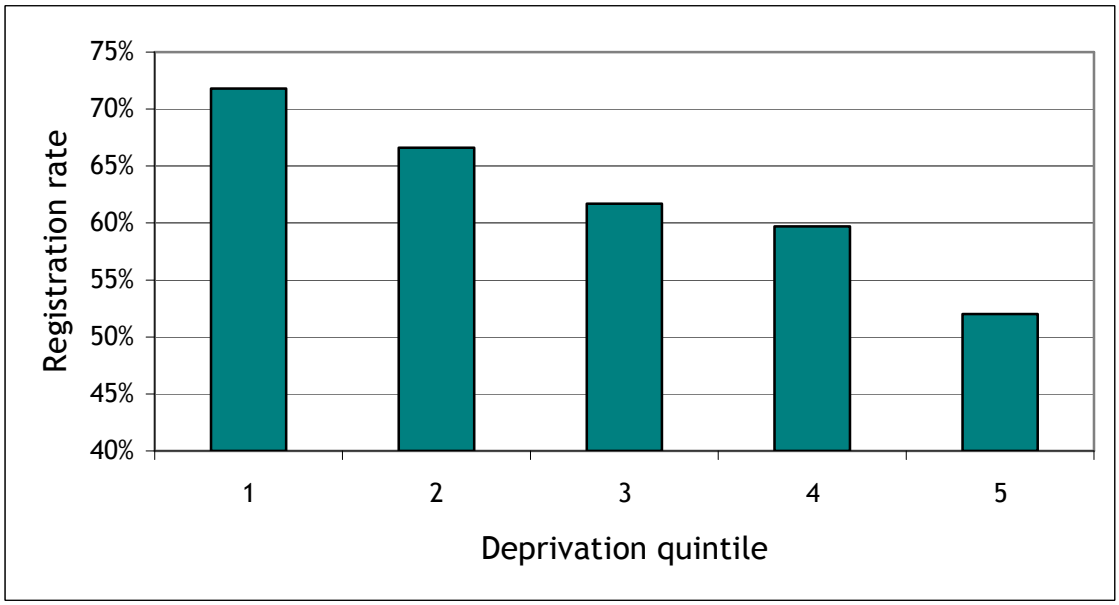
Figure 16. Northern Ireland registration rates for 0 to 74 year olds.



Source: GDP registration rates in February 2002, Central Services Agency.

Affluent individuals are significantly more likely to be registered with a dentist than disadvantaged individuals (figure 17). So while oral health care need is higher among the materially deprived, dental service usage is lower. This paradoxical relationship is apparent in health services generally. One explanation of the phenomenon is the inverse care law which states *"the availability of good medical care tends to vary inversely with the need for it in the population served"* [(90)]. However, a recent telephone survey of the Northern Ireland public found that the most common reason given for not regularly attending a dentist was perceived lack of need. This finding concurs with the results of other researchers who cite the increased value placed upon oral health by the higher social classes [(91)] and their greater knowledge of how to prevent oral disease [(92)] as the main reasons why the affluent exhibit better levels of dental attendance.

Figure 17. Registration rates by deprivation quintile for 3-5 year-old children in Northern Ireland



Source: GDP registration rates in March 2004, Central Services Agency.

Registration rates vary quite widely across Northern Ireland (figure 18). Generally, this is as a result of the relative affluence or deprivation of the local population. However, it can be due to reduced access to health service dentistry and this is one reason the Central Service Agency and the Department of Health, Social Services and Public Safety monitor registration trends.

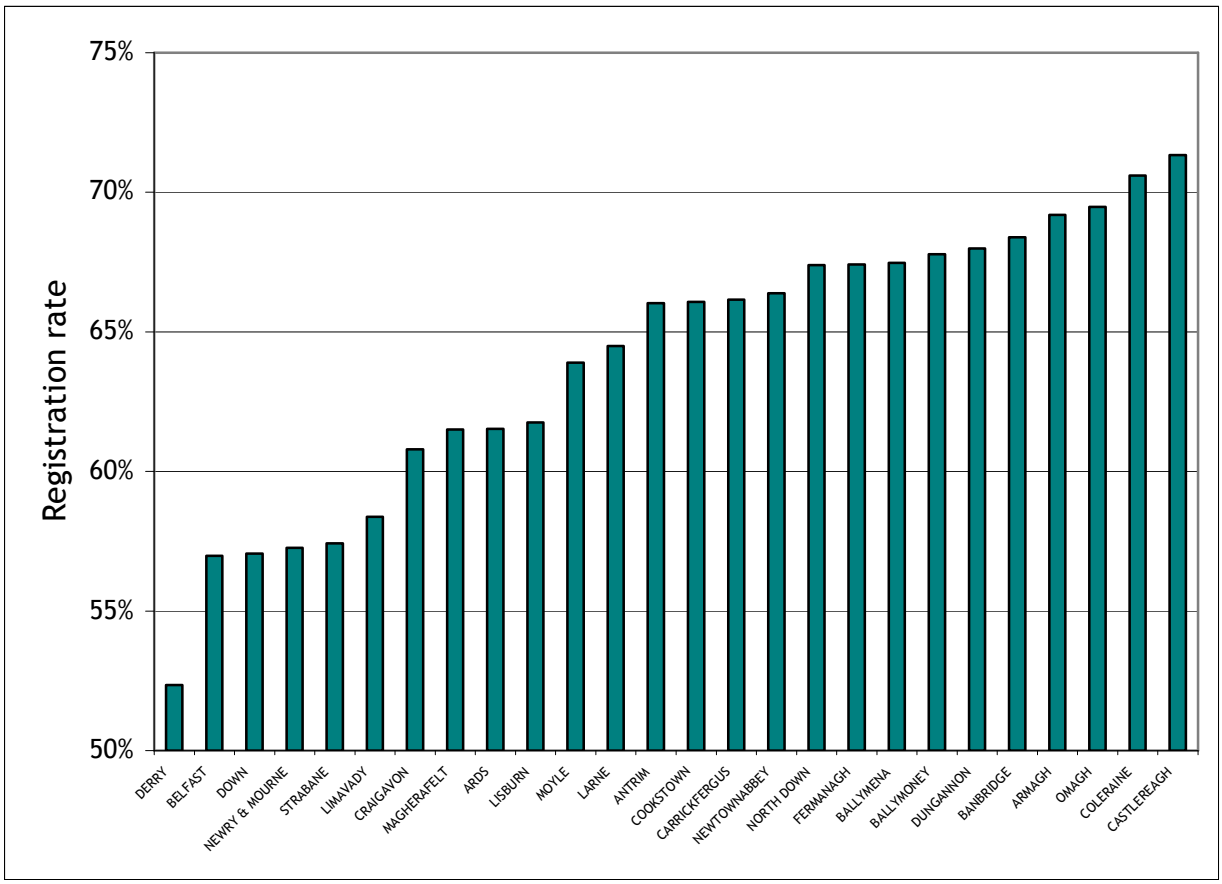
Recommendation 5.4

The DHSSPS, Health Boards and Trusts should work in partnership to try and improve dental service utilisation levels among those groups with historically low levels of dental attendance.

Recommendation 5.5

Access to, and uptake of, dental care should be monitored carefully during any changes to the primary care dental services.

Figure 18: Registration rates for 3-5 year-old children in each of the 26 council areas



6. Implementing The Strategy

The targets contained within the Strategy are demanding, but they are also achievable. In order for Northern Ireland to begin to close the oral health gap that exists between our population and the rest of the United Kingdom these targets need to be challenging.

To succeed in raising our oral health to the required level the strategy recommendations need to be implemented. This will require a concerted effort by all oral health professionals to focus more on preventive methods, to work in partnership with other health professionals to achieve health for all and to strengthen links with others outside the health sector to tackle the underlying determinants of ill health.

To ensure that the recommendations of the Strategy are taken forward the DHSSPS should establish an implementation group which should meet regularly throughout the lifetime of the Strategy. The role of this group will be to ensure that the recommendations are put into practice and to monitor the progress being made towards the attainment of the Strategy targets. The implementation group will complement the Oral Health Promotion Planning group outlined in **Recommendation 2.2**.

Recommendation 6.1

The Chief Dental Officer should set up a Strategy Implementation Group to ensure that the Strategy recommendations are enacted and to monitor progress towards Strategy targets.

Boards and Trusts have a key role to play in achieving the targets set out in the Strategy. They will need to ensure that prevention is effective, evidence-based and value for money. Where possible resources should be shared between organisations and there needs to be development of new, and consolidation of the existing, links between oral health professionals and voluntary and community groups. Partnership working with schools in the development and implementation of oral and general health promotion should be expanded. Efficiency may be maximised through work with other health service staff engaged in health promotion. In order to ensure that the recommendations of the Strategy are executed in a co-ordinated and efficient manner it will be necessary for the implementation group to be aware of how each Board and Trust propose to put the Strategy into practice.

Recommendation 6.2

Each Health Board and Trust should produce an annual action plan and submit this to the Strategy Implementation Group at the beginning of each financial year. The group will consider each action plan in relation to, among other things, opportunities for cross-boundary working, maximising resources through linkages with other non-dental programmes and the likely effectiveness of any proposed initiatives.

It is essential that this Oral Health Strategy is given due consideration in the taking forward of the Review of Community Dental Services and in the development of the new Primary Care Dental Strategy. This is particularly important in relation to any changes to the remuneration system for General Dental Practitioners as this can impact profoundly on both the number and the appropriateness of preventive interventions.

Finally, it is possible that due to potential future changes in the oral health care system or in light of new information received from dental surveys or needs evaluations that this Strategy may need to be updated.

Recommendation 6.3

There should be a mandatory review of the strategy after 5 years. Recommendations and especially targets may need to be revised as new information is received and the Strategy Implementation Group should give this consideration on an on-going basis.

Glossary and Abbreviations

CDS	Community Dental Service
CSA	Central Services Agency
DCP	Dental Care Professional
DHSSPSNI	Department of Health, Social Services and Public Safety for Northern Ireland
EHSSB	Eastern Health and Social Services Board
GDP	General Dental Practitioner (i.e. family dentists)
GDS	General Dental Service
GMP	General Medical Practitioner
HDS	Hospital Dental Service
HSST	Health and Social Services Trust
NHSSB	Northern Health and Social Services Board
SHSSB	Southern Health and Social Services Board
WELB	Western Education and Library Board
WHSSB	Western Health and Social Services Board
WTE	Whole Time Equivalent

References

1. WHO (World Health Organisation) (1986). The Ottawa Charter for Health Promotion. Health Promotion 1. iii-v. Geneva, WHO.

2. WHO (World Health Organisation) (2003). An Atlas of Health in Europe. Copenhagen, WHO.

3. Hobdell MH, Oliveira ER, Bautista R, Myburgh NG, Lalloo R, Narendran S, Johnson NW. Oral diseases and socio-economic status (SES). Br Dent J 2003; 194(2): 91-6.

4. Hillyard P, Kelly G, McLaughlin E, Patsios D, Tomlinson M (2003). Bare Necessities: Poverty and social exclusion in Northern Ireland. Belfast, Democratic Dialogue.

5. Wolfson M, Kaplan G, Lynch J, Ross N, Backlund E. Relation between income inequality and mortality: empirical demonstration. BMJ 1999; 319: 953-5.

6. Kaplan G, Pamuk ER, Lynch J, Cohen RD, Balfour JL. Inequality in income and mortality in the United States: analysis of mortality and potential pathways. BMJ 1996; 312: 999-1003.

7. Acheson D (1998). Independent Inquiry into Inequalities in Health. London, HMSO.

8. DHSSPSNI (2002). Investing for Health. Belfast, DHSSPSNI.

9. DHSSPSNI (2004). A Healthier Future: A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005 – 2025. In press. Belfast, DHSSPSNI.

10. Jones CM. Capitation registration and social deprivation in England. An inverse 'dental' care law? Br Dent J 2001; 190(4): 203-6.

11. Tickle M, Moulding G, Milsom K, Blinkhorn A. Dental caries, contact with dental services and deprivation in young children: their relationship at a small area level. Br Dent J 2000; 189(7): 376-9.

12. DHSSPSNI (2003). A Review of the Community Dental Service: A Consultation Document. Belfast, DHSSPSNI.

    Available at: http://www.dhsspsni.gov.uk/pgroups/dental/docs/Dentist_Service_book.pdf

13. Northern Ireland Cancer Registry.

Available at: http://www.qub.ac.uk/nicr/commoncan.htm

14. Papas AS, Palmer CA, Rounds MC, Russell RM. The effects of denture status on nutrition. Spec Care Dentist 1998; 18(1): 17-25.

15. Cortes MI, Marcenes W, Sheiham A. Impact of traumatic injuries to the permanent teeth on the oral health-related quality of life in 12-14-year-old children. Community Dent Oral Epidemiol 2002; 30(3): 193-8.

16. Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. Pediatr Dent 1999; 21(6): 325-6.

17. Northern Ireland Statistics and Research Agency.

Available at: http://www.nisra.gov.uk/statistics/financeandpersonnel/dmb/datavault/WNI025y.XLS

18. Russell E, Leggate M. Dentists in General and Community Practice: A Scottish Survey. B Dent J 2002; 193: 333-337.

19. Lalonde M (1974). A New Perspective on the Health of Canadians. Ottawa, Health and Welfare Canada.

20. Wanless D (2004). Securing Good Health for the Whole Population: Final Report. London, HM Treasury.

21. Health Development Agency (1997). Effectiveness of oral health promotion. Health promotion effectiveness reviews. Summary bulletin 7. London, Health Development Agency.

Available at: http://www.hda-online.org.uk/html/research/effectivenessreviews/ereview7.html

22. Northern Ireland Statistics and Research Agency (2004).The Registrar General's Quarterly Report for Northern Ireland Numbers 325 to 328. Belfast, NISRA.

23. Locker D, Jokovic A, Kay EJ. Prevention. Part 8: The use of pit and fissure sealants in preventing caries in the permanent dentition of children. Br Dent J 2003; 195(7): 375-8.

24. Hawkins R, Locker D, Noble J, Kay EJ. Prevention. Part 7: professionally applied topical fluorides for caries prevention. Br Dent J. 2003; 195(6): 313-7.

25. Watt RG, McGlone P, Kay EJ. Prevention. Part 2: Dietary advice in the dental surgery. Br Dent J. 2003; 195(1): 27-31.

26. Watt RG, Daly B, Kay EJ. Prevention. Part 1: smoking cessation advice within the general dental practice. Br Dent J 2003; 194(12): 665-8.

27. Pitts NB, Evans DJ, Nugent ZJ. The dental caries experience of 12-year-old children in the United Kingdom. Surveys coordinated by the British Association for the Study of Community Dentistry in 1996/97. Community Dent Health 1998; 15(1): 49-54.

28. Whelton H, Crowley E, O'Mullane D, Cronin M, Kelleher V (2003). Children's Oral Health in Ireland 2002 preliminary results: A North-South Survey coordinated by the Oral Health Services Research Centre, University College Cork. Dublin, Department of Health and Children.

29. Pine C, Macpherson L (2002). A national audit to determine the reasons for the choice of anaesthesia in dental extractions for children across Scotland. Edinburgh, Scottish Executive Health Department.

    Available at: http://www.show.scot.nhs.uk/crag/committees/ceps/reports/99_42ChildrenDentalExtracti.PDF

30. Central Services Agency (2003). GDS financial returns for 02/03.

31. National Statistics (2004). Family Spending. A Report on the 2002-2003 Expenditure and Food Survey. London, TSO.

32. Kuusela S, Honkala E, Kannas L, Tynjala J, Wold B. Oral hygiene habits of 11-year-old schoolchildren in 22 European countries and Canada in 1993/1994. J Dent Res 1997; 76(9): 1602-9.

33. Dignan T, McLaughlin E (2002). New TSN Research: Poverty in Northern Ireland. Belfast, Office of the First Minister and Deputy First Minister.

    Available at: http://www.research.ofmdfmni.gov.uk/povertyfull/exsummary.htm

34. Marinho VC, Higgins JP, Logan S, Sheiham A. Fluoride mouthrinses for preventing dental caries in children and adolescents. Cochrane Database Syst Rev 2003; (3): CD002284.

35. Gooch BF, Truman BI, Griffin SO, Kohn WG, Sulemana I, Gift HC, Horowitz AM, Evans CA Jr. A comparison of selected evidence reviews and recommendations on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. Am J Prev Med 2002; 23(1 Suppl): 55-80.

36. World Health Organisation Expert Committee on Oral Health Status and Fluoride Use (1994). Fluorides and Oral Health. WHO Technical Report Series No. 846. Geneva, World Health Organisation.

37. United States National Institute of Dental and Craniofacial Research (2002). Statement on water fluoridation.

Available at: http://www.nidcr.nih.gov/HealthInformation/OralHealthInformationIndex/Fluoride/WaterFluoridation.htm

38. Royal College of Physicians (1976). Fluoride, Teeth and Health. London, Pitman Medical.

39. NHS Centre for Reviews and Dissemination (2000). A Systematic Review of Public Water Fluoridation. University of York, ISBN 1 900640 16 3.

40. Jones CM, Worthington H. The relationship between water fluoridation and socioeconomic deprivation on tooth decay in 5-year-old children. Br Dent J 1999; 186(8): 397-400.

41. The Guide To Community Preventive Services: Population-Based Measures to Reduce Dental Caries. Economic Evidence Summary Table.

Available at: http://www.thecommunityguide.org/oral/oral-econ-ev-table.pdf

42. O'Brien M. Dental disease among children in the United Kingdom in 1993. OPCS. London: HMSO, 1994.

43. Dugmore CR, Rock WP. The prevalence of tooth erosion in 12-year-old children. Br Dent J 2004; 196(5): 279-82.

44. Health Promotion Agency for Northern Ireland (2001). Eating for health? A survey of eating habits among children and young people in Northern Ireland. Belfast, Health Promotion Agency for Northern Ireland.

45. Lunt M, Masaryk P, Scheidt-Nave C, Nijs J, Poor G, Pols H, Falch JA, Hammermeister G, Reid DM, Benevolenskaya L, Weber K, Cannata J, O'Neill TW, Felsenberg D, Silman AJ, Reeve J. The effects of lifestyle, dietary dairy intake and diabetes on bone density and vertebral deformity prevalence: the EVOS study. Osteoporos Int 2001; 12(8): 688-98.

46. Kleiner, SM. Water: an essential but overlooked nutrient. J Am Diet Assoc 1999; 99(2): 200-6.

47. Food Standards Agency and the Department of Health (2000). National Diet and Nutrition Survey: young people aged 4 to 18 years.Volume 1: Report of the diet and nutrition survey. London, The Stationery Office.

48. Kaba AD, Marechaux SC. A fourteen-year follow-up study of traumatic injuries to the permanent dentition. ASDC Journal of Dentistry for Children 1989; 56: 417-425.

49. Hamilton FA, Hill FJ, Holloway PJ. An investigation of dento-alveolar trauma and its treatment in an adolescent population. Part 1: The prevalence and incidence of injuries and the extent and adequacy of treatment received. Br Dent J 1997; 182(3): 91-5.

50. Garcia-Gody FM. Prevalence and distribution of traumatic injuries to the permanent teeth of Dominican children from private schools. Community Dentistry and Oral Epidemiology 1984; 12: 136-139.

51. Andreasen J.O, Andreasen F, Bakland L, Flores M (2003). Traumatic Dental Injuries: A Manual (Second Edition). Blackwell Munksgaard Publishing.

52. Zerman N, Calvalleri G. Traumatic injuries to permanent incisors. Endodontics and Dental Traumatology 1993; 9: 61-64.

53. Pine C (editor) (1998). Community Oral Health pp96. Oxford, Wright.

54. York AH, Hunter RM, Morton JG, Wells GM, Newton BJ. Dental injuries in 11-13 year-old children. New Zealand Dental Journal 1978; 74: 218-220.

55. Burden DJ. An investigation of the association between overjet size, lip coverage, and traumatic injury to maxillary incisors. Eur J Orthod. 1995; 17(6): 513-7.

56. Crall JJ. Reviews and recommendations to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. Am J Prev Med 2002; 23(1 Suppl): 81-2.

57. Cairns A, Murphy M, Welbury R. An overview and pilot study of the dental practitioner's role in child protection. Child Abuse Review 2004; 13(1):, 65-72.

58. Telfer MR, Jones GM, Shepherd JP. Trends in the aetiology of maxillofacial fractures in the United Kingdom (1977-1987). Br J Oral Maxillofac Surg 1991; 29(4): 250-5.

59. Hutchison IL, Magennis P, Shepherd JP, Brown AE. The BAOMS United Kingdom survey of facial injuries part 1: aetiology and the association with alcohol consumption. British Association of Oral and Maxillofacial Surgeons. Br J Oral Maxillofac Surg 1998; 36(1): 3-13.

60. Magennis P, Shepherd J, Hutchison I, Brown A. Trends in facial injury. BMJ 1998; 316(7128): 325-6.

61. J Shepherd. Preventing injuries from bar glasses. BMJ 1994; 308: 932 - 933.

62. Iida S, Hassfeld S, Reuther T, Schweigert HG, Haag C, Klein J, Muhling J. Maxillofacial fractures resulting from falls. J Craniomaxillofac Surg 2003; 31(5): 278-83.

63. Shaw WC. Dento facial irregularities. In Community Oral Health (editor C.Pine), pp104-111. Oxford 1997, Wright.

64. Gregg T, Boyd D, Richardson A. The incidence of cleft lip and palate in Northern Ireland from 1980-1990. Br J Orthod 1994; 21(4): 387-92.

65. DHSSPSNI (2002). Health and Social Care Needs and Effectiveness Evaluation. Belfast, DHSSPSNI.

Available at: http://www.dhsspsni.gov.uk/show_publications?txtid=13457

66. Northern Ireland Statistics and Research Agency (2003). Northern Ireland Census 2001 Theme Tables. Belfast, Northern Ireland Statistics and Research Agency.

Available at: http://www.nisra.gov.uk/census/Census2001Output/ThemeTables/theme_tables1.html

67. Shaw L, Maclaurin ET, Foster TD. Dental Study of Handicapped Children Attending Special Schools in Birmingham, UK. Community Dental Oral Epidemiology 1986; 14: 24-27.

68. Nunn JH, Murray JJ. The Dental Health of Handicapped Children in Newcastle and Northumberland. Br Dent J 1987; 162: 9-14.

69. Nunn JH, Gordon PH, Carmichael CL. Dental Disease and Current Treatment Needs in a Group of Physically Handicapped Children. Community Dental Health 1993; 10, 389-396.

70. NHSSB (2000). A report on the treatment of special needs patients by General Dental Practitioners in the Northern Health and Social Services Board Area. Ballymena, NHSSB.

71. Office for National Statistics (2000). Adult Dental Health Survey: Oral Health in the United Kingdom 1998. London, The Stationery Office.

72. Steele JG, Walls AW. Strategies to improve the quality of oral health care for frail and dependent older people. Qual Health Care 1997; 6(3): 165-9.

73. Wennstrom JL, Papapanou PN, Grondahl K. A model for decision making regarding periodontal treatment needs. J Clin Periodontol 1990; 17(4): 217-22.

74[a]. DHSSPSNI (2004). Tobacco Action Plan 2003-2008. Belfast, DHSSPSNI.
Available at: http://www.dhsspsni.gov.uk/publications/2003/tobaccoplan.pdf

74[b]. Burt B, Eklund S (1999). Dentistry, Dental Practice and the Community (5th Ed). Philadelphia, WB Saunders Company.

75. Slade GD. Derivation and validation of a short-form oral health impact profile. Community Dent Oral Epidemiol 1997; 25(4): 284-90.

76. Thomson WM. Dental caries experience in older people over time: what can the large cohort studies tell us? Brit Dent J 2004; 196: 89-92.

77. Marshall TA, Warren JJ, Hand JS, Xie XJ, Stumbo PJ. Oral health, nutrient intake and dietary quality in the very old. J Am Dent Assoc 2002; 133(10): 1369-79.

78. MSA-Ferndale Secta Group (2004). Review of Disability Information Project for DFP NISRA. Belfast, Northern Ireland Statistics and Research Agency.
Available at: http://www.nisra.gov.uk/uploads/publications/disability.pdf

79. Mencap (2003). Mencap response to Draft Priorities and Budget 2004-2007.
Available at: http://www.pfgni.gov.uk/responses/mencap.pdf

80. Thornton JB, al-Zahid S, Campbell VA, Marchetti A, Bradley EL Jr. Oral hygiene levels and periodontal disease prevalence among residents with mental retardation at various residential settings. Spec Care Dent 1989; 9: 186-190.

81. Holland TJ, O'Mullane DM. Dental treatment needs in three institutions for the handicapped. Community Dent Oral Epidemiol 1986; 14: 73-75.

82. Northern Ireland Statistics and Research Agency (2002). Health & Social Well-being Survey: 2001. Belfast, Northern Ireland Statistics and Research Agency.

83. Penchansky R, Thomas JW. The concept of access. Definition and relationship to consumer satisfaction. Med Care 1981; 19: 127-140.

84. DHSSPSNI (2004).Towards a Capital Investment Strategy. Final Report – 2004. Belfast, DHSSPSNI: 2004

85. DHSSPSNI (2003). Public Consultation Survey to Inform the DHSSPS Regional Strategy on Health and Social Wellbeing. Belfast, DHSSPSNI.

Available at: http://www.dhsspsni.gov.uk/publications/2003/health_social_wellbeing.pdf

86. Northern Ireland Housing Executive (2004). Annual Report of the Northern Ireland Housing Executive 2002-3. Belfast, Northern Ireland Housing Executive.

Available at:http://www.nihe.gov.uk/publications/reports/AR2003.pdf

87. Northern Ireland Statistics and Research Agency (2003). Northern Ireland Census 2001. Belfast, Northern Ireland Statistics and Research Agency.

Available at: http://www.nisra.gov.uk/census/Excel/KS06DC.xls

88. White D, Anderson RJ. Children's dental health under the capitation scheme. Community Dent Health 1996; 13 Suppl 1: 21-48.

89. Coventry P, Holloway PJ, Lennon MA, Mellor AC, Worthington HV. A trial of a capitation system of payment for the treatment of children in the General Dental Service. Community Dent Health 1989; 6 Suppl 1: 1-63.

90. Tudor-Hart J. The Inverse Care Law. The Lancet. 1971; i: 405-412.

91. Pavi E, Kay EJ, Stephen KW. The effect of social and personal factors on the utilisation of dental services in Glasgow, Scotland. Community Dent Health 1995; 12: 208-15.

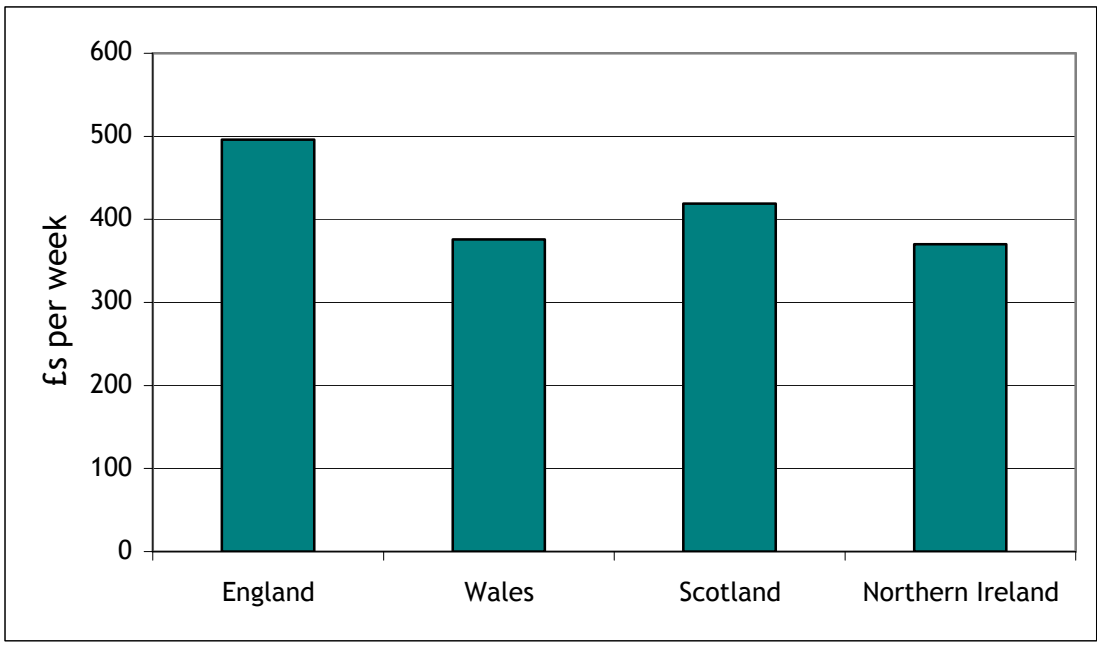
92. Schou L, Wight C, Wohlgemuth B. Deprivation and dental health. The benefits of a child dental health campaign in relation to deprivation as estimated by the uptake of free meals at school. Community Dent Health 1991; 8(2): 147-54.

Appendicies

Appendix 1: Socio-economic indicators

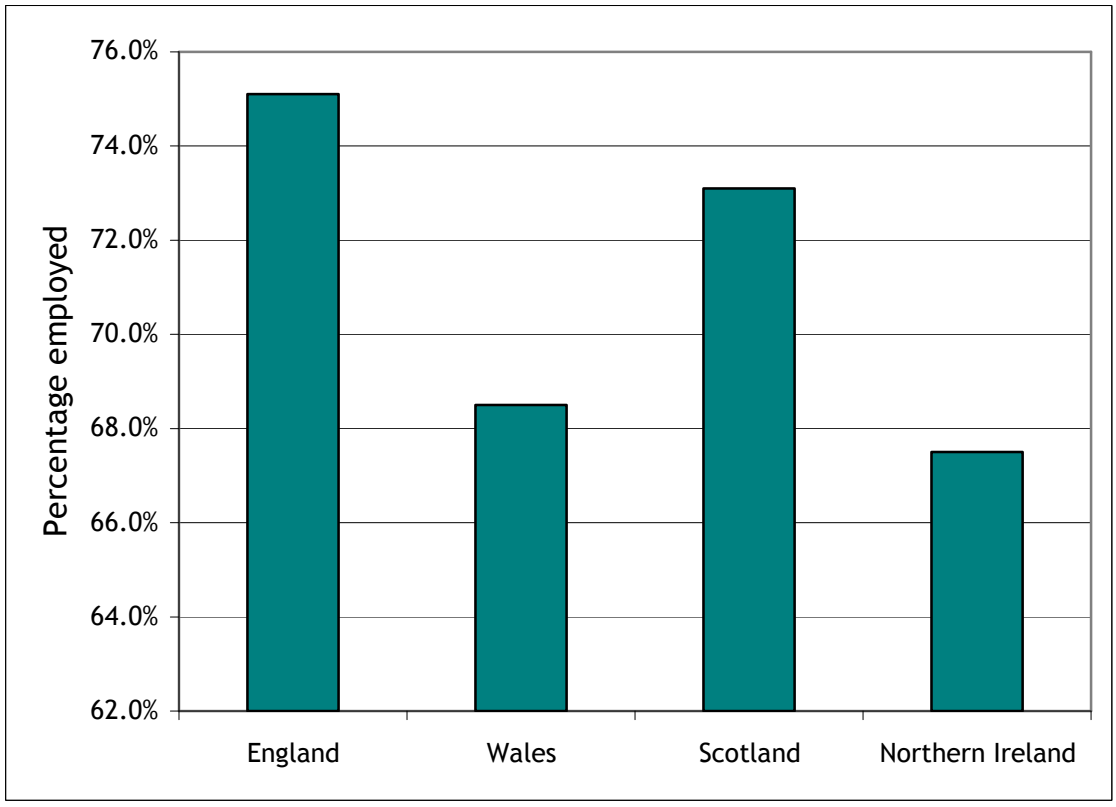
1a

Average weekly household income across the UK over the period 1998-2001



Source: Family Expenditure Survey, Office for National Statistics; Northern Ireland Statistics and Research Agency 1998/1999, 1999/2000, 2000/2001.

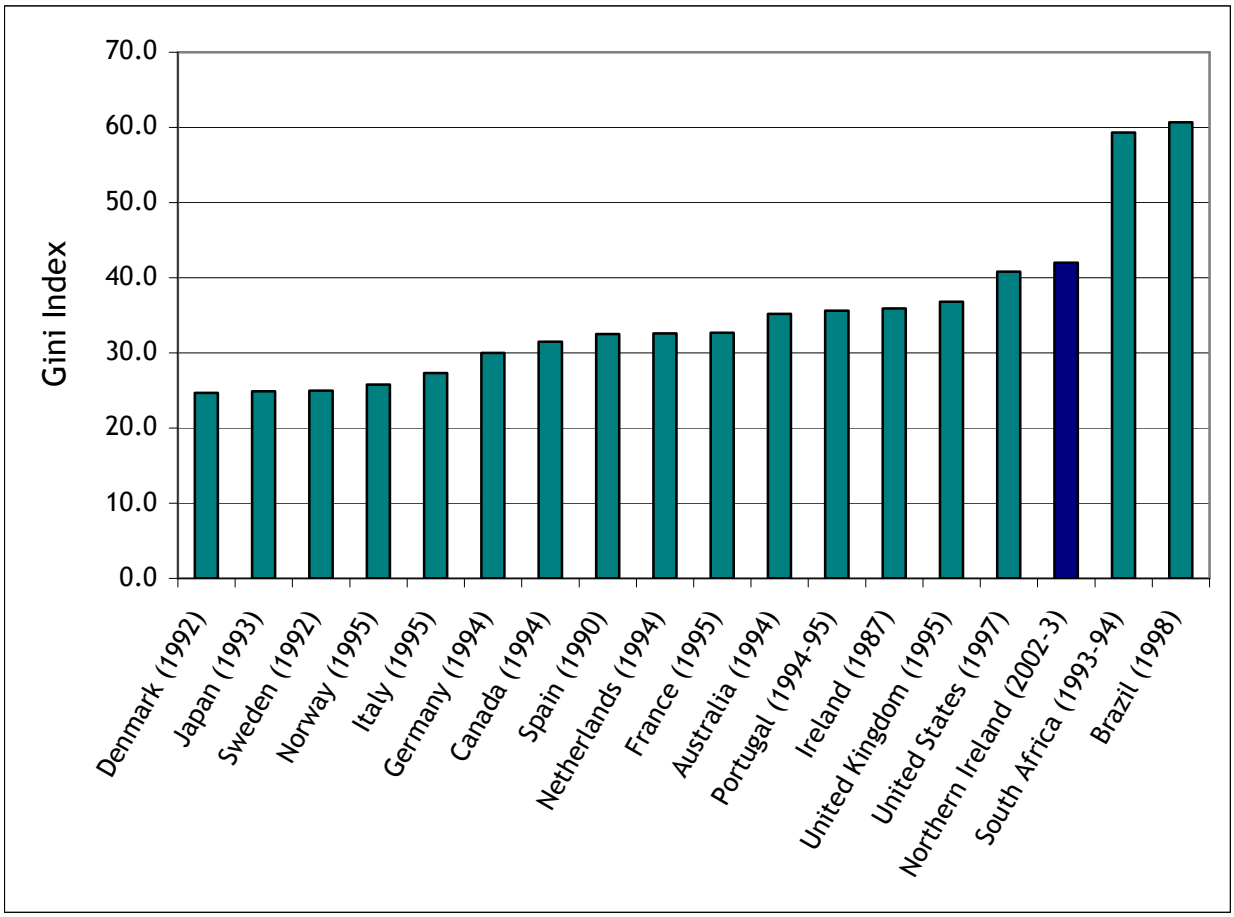
The percentage of the total population employed in Spring 2002 for the four UK countries.



Source: Labour Force Survey, Office for National Statistics

1b

The Gini Index is a measure of deviation from a perfectly equitable distribution. It can be used to represent disparities in income, education and access. The Gini Index may be expressed as a percentage where 0 represents perfect equality in distribution and 100 represents total inequality (i.e. one person has all of the resource). The chart below shows the Gini Index of household income distribution for selected countries.



Sources:

1. Bare Necessities. Poverty and social exclusion in Northern Ireland: Key findings. Paddy Hillyard, Grace Kelly, Eithne McLaughlin, Demi Patsios and Mike Tomlinson. Democratic Dialogue. 2003.

2. The World Factbook. Washington, D.C.: Central Intelligence Agency, 2003; Bartleby.Com, 2003. www.Bartleby.Com/151/

Appendix 2: Family spend

Foodstuff	England	Scotland	Wales	Northern Ireland	UK
Buns, cakes, biscuits etc	2.70	2.50	2.70	3.40	2.70
Chocolate	1.30	1.20	1.30	1.40	1.30
Confectionary products	0.60	0.60	0.60	0.80	0.60
Soft Drinks	1.30	1.30	2.00	2.10	1.40
Fresh vegetables	3.10	2.60	2.30	2.20	3.00
Fresh Fruit	2.40	2.00	2.00	1.90	2.30

Source: Family Spending. A Report on the 2002-2003 Expenditure and Food Survey. National Statistics, 2004.

Appendix 3: Learning disability

3a Distribution of mild disability for the GB population aged 0 to 19 years in 2000 (Where more than one disability is present only the main disabling condition has been included)

Impairment	% of all mild disabilities in 2000
Mental Disorders	4
Learning Difficulties	2
Nervous System Disorders	4
Blindness/Vision Defects	4
Deafness/Ear Defects	6
Heart Disease	3
Lung/Respiratory	6
Asthma	42
Digestive Disorders	4
Urogenitary Disorders	3
Muscoskeletal Problems	5
Skin Conditions	8
Physical Handicap	0
Other conditions	9
All conditions	100

Source: General Household Survey 2000

3b Distribution of severe disability for the GB population aged 0 to 16 years in 2000 (Where more than one disability is present only the main disabling condition has been included)

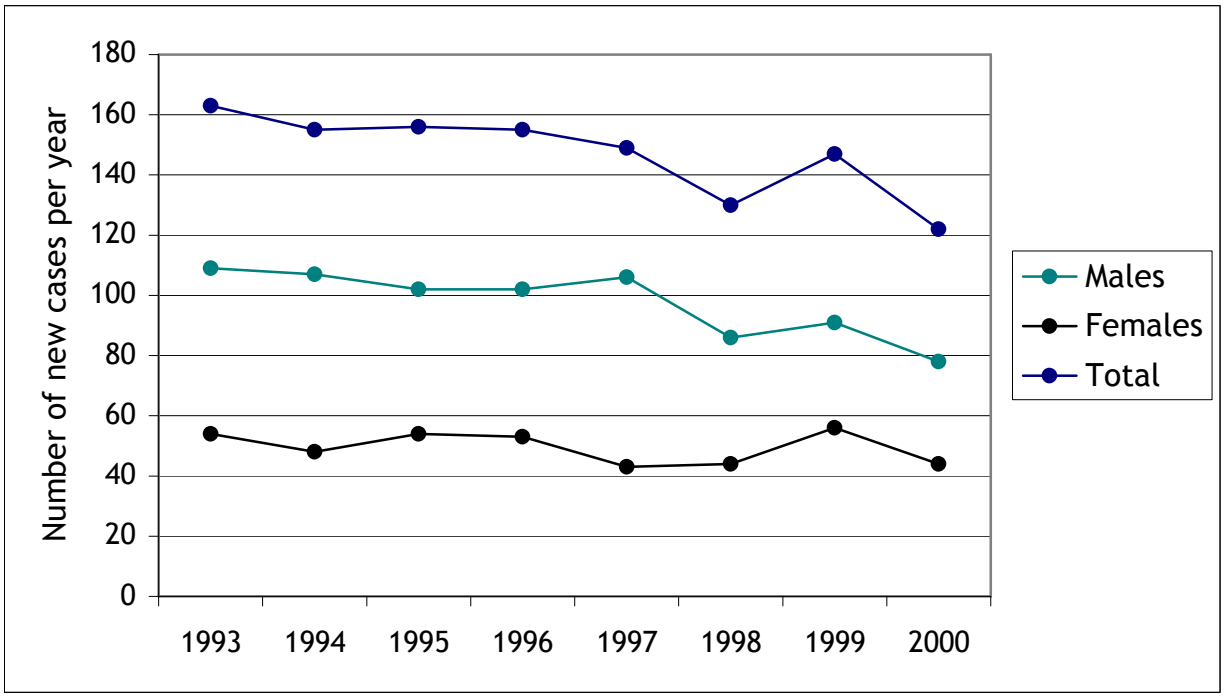
Impairment	% of all severe disabilities in 2000
Asthma	2
Autism, Behavioural Disorders	25
Cancers/Tumours	3
Cerebral Palsy	8
Deafness	3
Down's Syndrome	3
Epilepsy	3
Global Development Delay	4
Mental Handicap	15
Central Nervous System Disorders	2
Other conditions	32
All conditions	100

Source: Unpublished analysis of Family Fund Trust statistics

Appendix 4: Time trends

4a

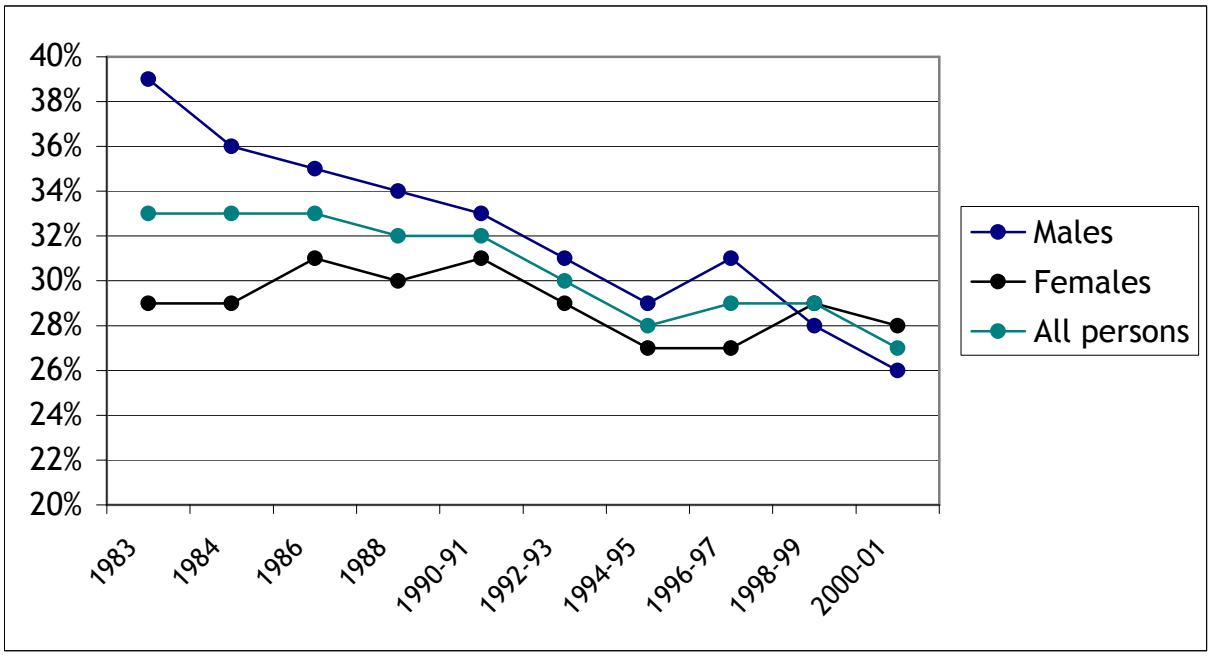
Time trends in incidence cases of oral cancer (ICD-10 C00-C14) among men and women in Northern Ireland 1993 to 2000



Source: Northern Ireland Cancer Registry

4b

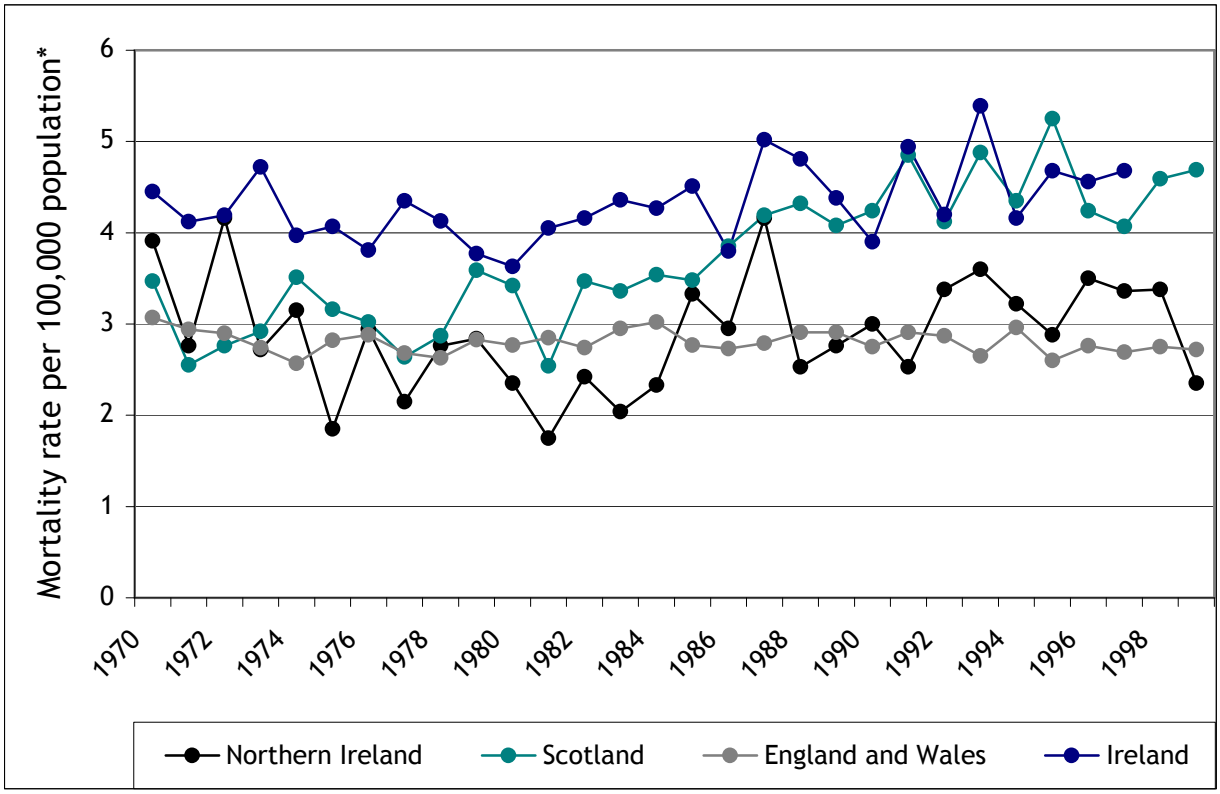
Proportions of cigarette smoking among males and females aged 16 and over.



Source: Continuous Household Survey, NISRA

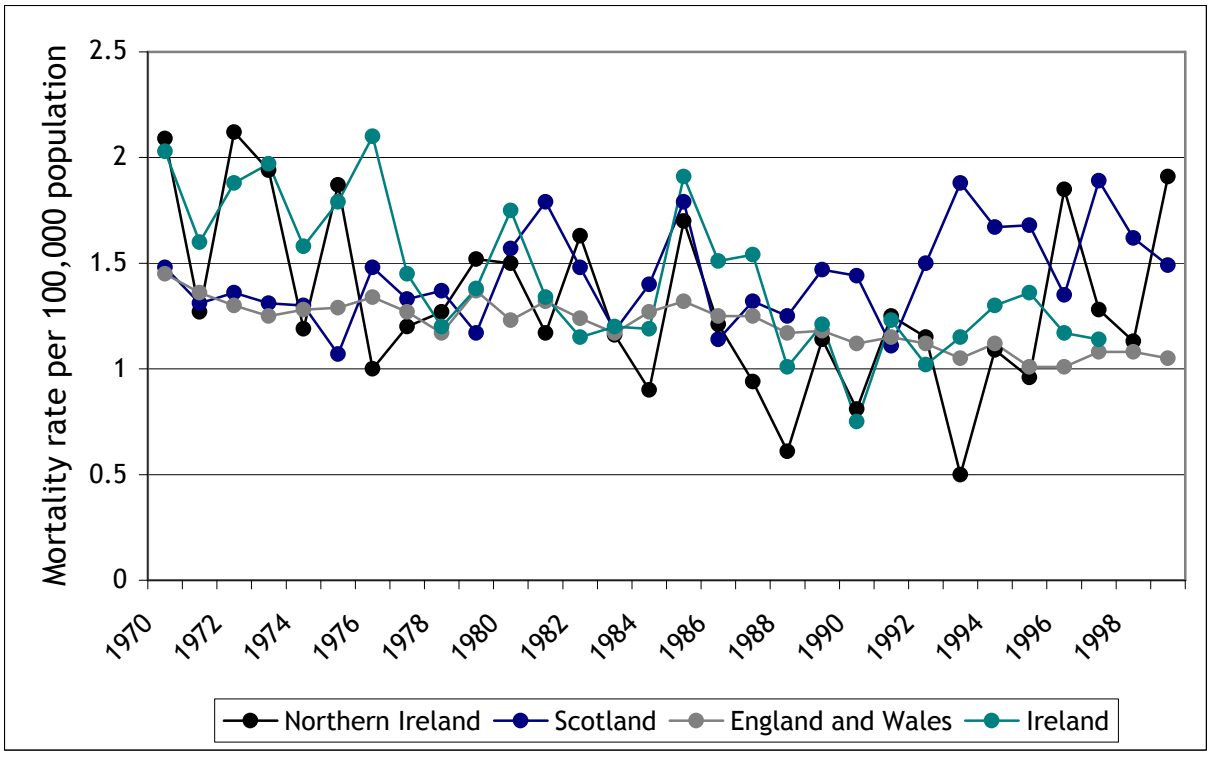
4c

Age standardised mortality rate per 100,000 population* for oral cancer among males from the UK and Ireland.



4d

Age standardised mortality rate per 100,000 population* for oral cancer among females from the UK and Ireland.



*World Age Standardised Rate

Appendix 5: Equality Screening

1. Section 75 of the Northern Ireland Act 1998 requires public authorities, in carrying out their functions relating to Northern Ireland, to have due regard to the need to promote equality of opportunity:

   - between persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation ;
   - between men and women generally;
   - between persons with a disability and persons without; and
   - between persons with dependents and persons without.

2. In addition, without prejudice to the above obligations, public authorities should also, in carrying out their functions relating to Northern Ireland, have regard to the desirability of promoting good relations between persons of different religious belief, political opinion or racial group.

3 In keeping with the above statutory obligations and, in accordance with guidance produced by the Equality Commission for Northern Ireland, the Department of Health, Social Services and Public Safety has carried out an equality screening exercise to determine if this Strategy is likely to create any unintentional adverse impact and if it offers the opportunity to identify how to better promote equality of opportunity and good relations.

4. In terms of the overall aim and objectives of the Strategy, the Department of Health, Social Services and Public Safety is not aware of any evidence to indicate that adverse impact is likely to arise. Indeed, the Strategy requires that Oral health professionals identify and address inequalities in the oral health of our population and makes specific recommendations on access to dental care for elderly and disabled patients.

5. A key theme of the Strategy is to reduce inequalities in oral health/ access to care for a broad range of disadvantaged groups.

6. The Department of Health, Social Services and Public Safety has concluded that a full equality impact assessment of the strategy would not be appropriate.

Appendix 6: Summary of responses to the consultation questionnaires

There follows a summary of the responses received from the questionnaires that were issued with the Oral Health Strategy.

It is divided into the same sectional structure of the questionnaire.

- The first column shows a summary of the relevant recommendation and the number of that recommendation in the Oral Health Strategy.
- The next column shows what percentage of the 77 respondents either *agreed* or *strongly agreed* with the recommendation.
- The last column is a précis of the comments received from the respondents.

Please note:

These comments do not necessarily represent the opinions of the Department of Health, Social Services and Public Safety, its staff or associated stakeholders.

section 2: preventing oral disease

recommendation		concordance	comments
There should be a regional expert group for Oral Health Promotion (OHP) that:			This group should have representation from relevant stakeholders who adopt a regional approach, but with local flexibility
Is formally linked in with general health promotion through the DHSSPS health promotion forum	2.1	89.6%	The links with general health promotion are welcome. Dentistry is often viewed as the poor relation and so oral health promotion should be linked to, but not led by, general health promotion.
At a strategic level plans and coordinates OHP in Northern Ireland;	2.2	88.3%	Everyone should work together. Multidisciplinary work is important to avoid duplication and share skills and expertise. It should allow for local customisation.
Develops regional OHP programmes and appropriate evaluations.	2.3	83.1%	We must take account of local needs. Good Practice ideas should be gathered to form a regional plan.
Each Community Trust should have at least one OHP coordinator.	2.4	85.7%	Each Board area should have a co-ordinator, but at least one promoter/ facilitator in each Trust area.
Preventive interventions should be evidence-based with consideration given to cost-effectiveness.	2.5	83.1%	There is little or no evidence base for preventive interventions; however, the banning of cigarette advertising was effected without an evidence base

section 3: children's oral health

recommendation		concordance	comments
Preventing caries in children, particularly among those from disadvantaged backgrounds, should be a key health objective for all Boards and Trusts in Northern Ireland.	3.1	97.4%	This message should be taken to **parents** as early as possible as Boards and Trusts have little influence over what the General Dental Service does.
The DHSSPS, Boards and Trusts should work with educational authorities to ensure that all schools, including special schools:			This requires support from the Education Sector and Minister(s)
Are free from vending machines selling sugary snacks and drinks	3.2	90.9%	This is unrealistic as the machines are a revenue source for the school.. a viable healthy alternative would be needed
Have a healthy breaks and meals policy.	3.3	97.4%	This would need co-operation from schools to implement as early as possible in school life. It must be managed well to maximise resources and ensure that further inequalities are not created
Oral health professionals should build on existing partnership working arrangements to improve children's diets, particularly those from disadvantaged backgrounds.	3.4	89.6%	Parents, not children need educating. A joined up approach (e.g. with obesity work) is essential
The DHSSPS will work in partnership with other stakeholders to examine the feasibility of fluoridating the public water supplies.	3.5	87.0%	Political support is essential. Lessons have already been learned from water fluoridation elsewhere.
As 3.5 may take some time, an alternative, evidence-based, regional prevention programme for caries in children should be developed and implemented as soon as possible.	3.6	93.5%	Identify funding and staffing to develop existing programmes. Success requires targeting children as young as possible and co-operation from **all** stakeholders

recommendation		concordance	comments
The new Primary Dental Care Strategy should encourage dentists and DCP's to provide diet advice, oral hygiene instruction, fissure sealants and topical fluoride where appropriate.	3.7	93.5%	Most are already doing this, but can only advise those who attend. Registration rates need to be addressed.
Producers of soft drinks should investigate ways of reducing their erosive potential.	3.8	92.2%	Clearer labelling and a culture shift are needed for this to be of value. There is no incentive for soft drinks companies to alter their practices.
Dentists should be aware of the causes of dental erosion and should offer advice, treatment and referral as appropriate.	3.9	93.5%	A lot of them are already doing this, but adequate training and remuneration are needed to help focus efforts on prevention.
Oral health professionals should work with the relevant bodies to ensure that all contact sports participants wear a mouthguard.	3.10	89.6%	This is a good idea, in principle, but patient choice is crucial. The cost is prohibitive compared to the level of sports-related dental trauma.
Oral health professionals should work in partnership with those who teach, train and care for children to improve the immediate management of dental trauma.	3.11	88.3%	Can the oral health promotion group take this on and identify funding to train oral health professionals to educate parents, teachers, carers and staff in sports clubs & leisure centres?
Health Boards should examine the possibility of providing training to highlight the dentists role in the detection and multidisciplinary management of suspected cases of child physical abuse.	3.12	75.3%	This is a very sensitive issue that requires careful training. The dental team needs to be supported, but it is best left to other professionals.
Oral health professionals at all levels should work in partnership with schools, local councils and other health professionals to ensure that the public are aware of the risks to health caused by excessive alcohol consumption.	3.13	74.0%	Another sensitive issue that requires a strategic approach to training, awareness and funding.

recommendation		concordance	comments
The DHSSPS and Health Boards should work with local councils, safety organisations and licensed premises to increase the use of safe glasses.	3.14	66.2%	Excess alcohol consumption is a bigger problem and diverting resources to the promotion of *safe glass* may not be appropriate
Oral Health professionals should be aware of the causes of falls among older people and should support falls prevention programmes.	3.15	50.6%	This needs a multi-disciplinary approach. The dental role is minimal, or non-specific.
The boundaries of orthodontic treatment for health reasons and orthodontic treatment for purely cosmetic reasons should be clearly defined in the strategies for the GDS and the CDS.	3.16	68.8%	Who will decide these boundaries, and using what criteria? They must consider the issues of psychology, patient rights and quality of life.
Nursing staff and trained carers of children with disabilities should receive an oral health module that covers how to prevent oral disease, detecting early signs of oral disease and how to access dental services. Parents and other carers should be given advice on maintaining oral health.	3.17	96.1%	This is ad hoc, at present. All staff should receive initial training and regular updates. Who will provide and fund this training?
The Care Standards for children's special schools and residential care homes should require that: each child has their oral health assessed by a dentist annually; each care plan has oral health input; there is a policy for preventing oral disease; arrangements are in place with local dental services to provide dental care and when a need is identified these arrangements are put into action.	3.18	97.4%	Better to do this six-monthly. This is already being done in parts of the CDS, but a lot of this group live at home and so GDS participation is required. A key person is needed to liaise between the CDS and GDS. Effective implementatio0n relies on proper funding, training and monitoring.
Trusts should ensure that appropriate transport is available to allow children and adults with mobility problems to access oral care.	3.19 4.15	85.7%	Need to define *appropriate* and *mobility problems*. What priority should be given to this recommendation, considering other demands on limited resources?

	recommendation	concordance	comments
Oral health care needs assessments for children with disabilities should be carried out to agreed protocols throughout Northern Ireland and reported in a standard form.	3.20	85.7%	Assessment is a bureaucratic waste of time; just do the treatment without the assessment. Assessments are already carried out in parts of the CDS. It is considered an essential tool for planning future oral health promotion.

section 4: adult oral health

recommendation		concordance	comments
The philosophy of lifelong prevention of dental disease should be adopted by all dentists.	4.1	97.4%	This has already been adopted. This is not a new idea. It is difficult to achieve this cultural shift. The remuneration system needs to accommodate this.
The DHSSPSNI, Health Boards and General Dental Practitioners should employ innovative approaches to increase dental service utilisation among older people. The new Primary Dental Care Strategy should facilitate this goal.	4.2 4.9 4.13	81.8%	Do not limit to elderly. Free check-ups (examinations) for the over 65's. Increased demand on resources implied.
Boards and Trusts should continue to work with residential and nursing home staff to improve oral hygiene practices and reduce the decay causing potential of food so that levels of root caries are reduced.	4.3	93.5%	High staff turnover means continuous training cycle and attendant resource implications. The Department should set standards and monitor implementation.
Training should be provided to carers of the elderly on how to prevent dental decay through dietary and oral hygiene measures.	4.4	97.4%	This should apply to all carers. The turnover of residential care staff means continuous training programme. Who will provide the training, and how will it be resourced? This should be multi-disciplinary and incorporate monitoring.
The Primary Dental Care System should make it feasible for oral health professionals to spend time with patients on one-to-one oral hygiene and smoking cessation advice (brief interventions).	4.5 4.6	88.3%	Appropriate monitoring and an effective verification process is required for General Dental Service success. This issue is addressed elsewhere and GDP's can still only deal with those patients who attend.
Training in brief interventions for smoking cessation should be widely available to primary care oral health professionals.	4.6	85.7%	Some practitioners are already doing this. Appropriate remuneration is needed in the GDS.

recommendation		concordance	comments
Oral hygiene should be integrated into the teaching of general body cleanliness education at both pre-school and primary school. For older children oral hygiene should be promoted as part of grooming behaviour.	4.7	97.4%	This is part of the curriculum in most schools. This may be more the parents' rather than the teachers' remit.
Dentists should opportunistically screen at risk patients for oral cancer.	4.8	85.7%	This practice is already common. **All** patients should be screened, but appropriate (sensitive) training is needed. Registration rates mean that the effectiveness of this scheme would be low.
Using interdisciplinary and inter-sectoral approaches oral health professionals should continue to work towards increasing the consumption of fresh fruit and vegetables among all children, but particularly those from disadvantaged backgrounds.	4.10	90.9%	Any expansion is dependent on a good foundation; i.e. ensuring that existing schemes are cost-effective and that good oral health has already been established. Best implemented in schools, but parent education is also required.
An oral health assessment should form part of the multidisciplinary health assessment given to new residents of nursing and residential homes for the elderly.	4.11	89.6%	Assessments are already conducted by the CDS, but it needs to be continuous and supported by a commensurate approach to treatment. Oral health promotion in this area needs support and monitoring to be effective. Negating personal freedom increases dependency & disability.
The Care Standards for residential and nursing homes for the elderly currently being developed in Northern Ireland should include simple indicators that allow the quality of oral healthcare provided by the home to be determined.	4.12	80.5%	Need to define a *simple indicator*. Training and monitoring is required. It would help raise awareness among nursing home staff.
National care standards for disabled adults in residential care should ensure that oral health is assessed regularly, that protocols are in place for dental care when it is required and that there is a policy on the maintenance of oral health.	4.14	92.2%	Need to define *regularly*. Include day centres and assistance for carers in the scheme to help those who live at home. Monitoring and the participation of Social Services is vital.

recommendation		concordance	comments
The training of dentists, dental nurses, hygienists and therapists should include practical experience in the management of those with special needs. Appropriate postgraduate training should be available to those who wish to develop their skills in the treatment of the disabled.	3.21	94.8%	Especially important for CDS. Consider undergraduates and DCP's too. Need to define *special needs* carefully.
Nursing staff and professional carers should receive training on simple oral assessment criteria, how to prevent oral disease in those with mental illness and how to access dental services.	4.18	92.2%	This should apply to the whole team and not be limited to the mentally ill. It should be part of the basic training. The patient still needs to visit a dental surgery.
Professionally trained carers of adults with disabilities should receive an oral health module that covers how to prevent oral disease, detecting early signs of oral disease and how to access dental services. Other carers should be given advice on maintaining oral health.	4.16	92.2%	Regular training and updates are required to cater for high staff turnover. Extend beyond professional carers. Who will fund and provide training? The patient still needs to visit a dental surgery.
The Care Standards for those with a psychiatric illness in residential care should ensure that an oral health assessment forms part of the general health assessment, that each individuals care plan should have oral health input and that each residential care home has a protocol to ensure all residents with an oral health care need have access to appropriate services.	4.17	89.6%	Assessment is a waste if you are not going to treat all who are assessed. CDS are already involved in assessment, but the process could be formalised. It may be difficult to keep in touch with this group outside of hospital and so monitoring is essential to check that this is implemented. Not all this group live in institutions; need to think wider. There are attendant resource implications.

section 5: dental services

recommendation		concordance	comments
In modernising primary care dental services, comprehensive access to appropriate dental care should be safeguarded.	5.1	92.2%	Success requires adequate remuneration and service structures; e.g. incentives to graduates, etc to provide services in certain areas. Consider the impact on the CDS. To ensure access, the number of treatments must be restricted
The Chief Dental Officer should establish a multidisciplinary working group to examine the shortfall in dental services for special needs patients and develop an action plan to improve services for this group.	5.2	83.1%	The CDS have the lead in this area and should retain it. The increase in this patient base has led to longer waiting lists; service expansion is needed urgently.
As it may take some time to develop a suitable long-term solution to the shortfall in dental services for special needs patients the working group should also investigate remedial measures that can be implemented quickly.	5.2	77.9%	The solution should focus on developing high quality services for the long-term. e.g. recruit specialist dentists with a 600-880 list size for this patient group Learning disabled service provision is being eroded by the increasing demand on the CDS as a *safety net* as services in this area are not adequate.
A regional oral health care needs assessment and a simple survey of dental service usage should be carried out for homeless, travellers and ethnic minorities.	5.3	63.6%	It is difficult to target and monitor contact with this group. Analysis & assessment lead to paralysis instead of an achievable strategy. How much data could be gathered and what would its value be in planning future service provision?
The DHSSPS, Health Boards and Trusts should work in partnership to try to improve dental service utilisation levels among those groups with historically low levels of dental attendance.	5.4	80.5%	Some work is already being done in this area. Improvement in utilisation requires a change of mindset. Do we need a mass media campaign or a multidisciplinary approach by Health Professionals?
Access to, and uptake of, dental care should be monitored carefully during any changes to the primary care dental services.	5.5	88.3%	This will happen anyway. The GDS is a business. Learn lessons form England and Wales Pilot any change before implementation

section 6: implementation of the strategy

recommendation		concordance	comments
The Chief Dental Officer should set up a Strategy Implementation Group to ensure that the Strategy recommendations are enacted and to monitor progress towards Strategy targets.	6.1	74.0%	Why another group to do the work of the CDO? This should be the Boards and Trusts working together. These plans will not change behaviours and habits without a long-term intervention plan.
Each Health Board and Trust should produce an annual action plan and submit this to the Strategy Implementation Group at the beginning of each financial year.	6.2	63.6%	This could be achieved through existing monitoring. Any change / expansion in monitoring has resource implications.
There should be a mandatory review of the strategy after 5 years. Recommendations and especially targets may need to be revised as new information is received and the Strategy Implementation Group should give this consideration on an on-going basis.	6.3	77.9%	5 years is sensible. 5 years is too long. 5 years is too short. There is no benefit in unachievable targets especially without water fluoridation.

Produced by:

Department of Health, Social Services and Public Safety,
Castle Buildings, Belfast BT4 3SQ

Telephone (028) 90 522710
Textphone (028) 90 527668
www.dhsspsni.gov.uk

June 2007