The healthcare system and the provision of oral healthcare in European Union member states. Part 7: Republic of Ireland

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In brief

Highlights that oral healthcare in Ireland is mainly provided by independent privately practising dentists.

In 2010, approximately 43% of adults aged 18 years and over attend the dentist in a 12 month period.

In 2014, out of pocket payments accounted for 83% of total expenditure on dental services.

The Irish oral healthcare system is a hybrid model with a public/private mix of service provision, predominantly organised on the basis of fee-per-item remuneration. The system is structured around three long standing publicly funded schemes: the Public Dental Service (PDS) for all children and adults with special needs and provided by salaried dentists, the Dental Treatment Services Scheme (DTSS) for low income adults, and the Dental Treatment Benefit Scheme (DTBS) for insured persons, the latter two both provided by private independent dental practitioners. Ireland introduced systemic water fluoridation in 1963 and currently 73% of the population has access to fluoridated water. Ireland currently has a dentist density ratio of 6.1 dentists per 10,000 inhabitants and on average, 43% of the population (30% for those aged 70+ years) visit a dentist annually. In 2014, 83% of expenditure on oral healthcare was from out-of-pocket payments by patients, with less than 1% of overall government expenditure on healthcare allotted to oral healthcare. After the economic downturn of 2008 and the severe recession that followed in Ireland, substantial cutbacks in government expenditure resulted in extensive cuts to the public sector supply of dental services and to the extent of cover provided by the publicly funded schemes. The Department of Health has recognised the major post recessionary challenges facing the Irish health system, not least, significantly reduced budgets and capacity deficits, and acknowledges the need for change in Ireland's health service. In 2014, a three-year project commenced at the Department of Health, to develop a new national oral health policy for Ireland.

Introduction

The Republic of Ireland ('Ireland') was predicted to be the fastest growing economy in Europe in 2016,[1] having emerged from the severe economic recession that it entered in 2008. The country's current estimated population is 4.67 million, with an unemployment rate of 7.8% as at June 2016,[2] the lowest level since the end of 2008 and down from a recessionary peak of 15% in 2012. In 2010, the country entered an €85 billion bailout by the European Union (EU), European Central Bank (ECB) and the International Monetary Fund (IMF). The bailout was conditional on major budgetary reform and the imposition of substantial cutbacks in public expenditure. Imposed austerity measures impacted on the provision of healthcare through severe reductions on public health expenditure of circa €1.2 billion.[3] Government expenditure on dental services was a major casualty of the austerity measures, with significant cut-backs to publicly funded dental schemes, resulting in substantial increases in out-of-pocket payments for patients requiring dental care.

This paper covers the following aspects:

- Insurance-based healthcare provision system
- Publicly funded oral healthcare schemes
- Oral health promotion
- Oral healthcare workforce
- Dental education
- Continued professional development
- Costs of oral healthcare
- Payment systems for oral healthcare
- Epidemiology
- Discussion.

Aim

The aim of this paper is to describe the current system for the provision of oral healthcare in the Republic of Ireland.

An insurance-based healthcare provision system

The Department of Health is responsible for planning healthcare for a population of 4.67 million, 67% of whom are 25 years of age and older. The population is projected to

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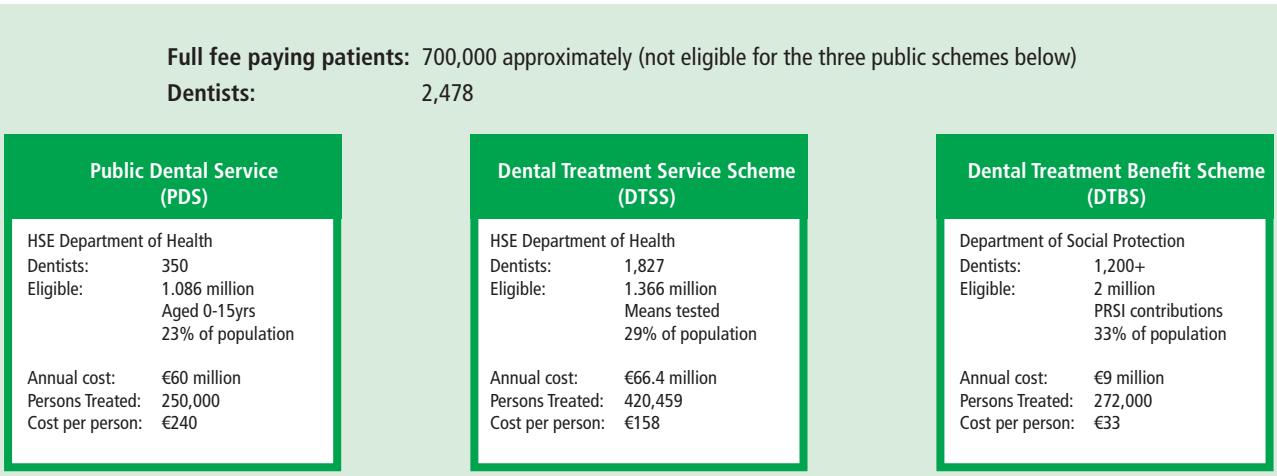
Fig. 1 Summary of Ireland's Dental Delivery System – Orthodontic services, also delivered by salaried dental staff of the HSE, are provided to eligible patients based on the level of clinical need. Oral surgery and maxillofacial surgery is delivered either by secondary or tertiary services. The base budget for orthodontics is currently approximately €16 million per year. This includes some oral surgery and restorative treatment costs and in most cases, oral and maxillofacial surgery. The HSE has provided revenue funding of approximately €5.98 million, €5.80 million and €5.63 million for 2012, 2013 and 2014 respectively to the Dublin Dental University Hospital, in respect of a Service Level Agreement. The HSE provides approximately €2 million to Cork University Dental School and Hospital each year in respect of a Service Level Agreement[18]



rise by over 40% to 6.7 million by 2046 with the proportion aged 65 and over increasing to 1.4 million.[4] The system is administered through the Health Service Executive (HSE) which was established by the Health Act, 2004 and came into official operation on 1 January 2005. The HSE is a single national body providing health and personal social services for everyone living in Ireland, funded from public funds. The Minister for Health has overall responsibility for the HSE in Government. The HSE comprises seven hospital groups and nine community healthcare organisations (CHOs), who provide secondary and tertiary healthcare. The HSE is Ireland's largest employer with over 67,000 direct employees, and another 40,000 in funded healthcare organisations. The HSE's total expenditure for the delivery and contracting of health and personal social services in 2015 was just under €14 billion.[5]

Healthcare in Ireland is provided by a public/private mix. All resident persons are entitled to receive healthcare through the public healthcare system, funded through a combination of general taxation and social insurance. However, persons may be required to pay a subsidised fee for certain public healthcare received. This is dependent on eligibility for medical services through the public health insurance scheme known as the General Medical Services (GMS) scheme or through the social insurance scheme known as Pay Related Social Insurance (PRSI), both described below. However, many citizens seek private medical care and voluntary private health insurance which is a feature of the Irish system, helping to contribute towards the cost of this private care.

At the end of 2014, 1.77 million (38%) of the Irish population were eligible for a general medical services (GMS) card, generally referred to as a 'medical card'.[6] Medical card eligibility, which entitles the holder to certain medical services free of charge, is based on an assessment of means. To qualify, one's weekly income must be below the income threshold. The current income threshold for a single person up to the age of 65 years is currently €184 per week and €201.50 if aged 66 years and over.[7] For the 8.7% of the population aged 70 years and over, the medical card threshold is €500 for a single person, and €900 for a couple married or co-habiting.[7] Any income, savings, investments and property (except for your own home) are taken into account in the means test. Where an individual or household is over the income threshold, the HSE can apply discretion where undue hardship would arise from the costs of the household's particular medical or social circumstances. A GP visit card, which entitles the holder to visit a participating family doctor at zero monetary cost to the patient, is available to all persons aged under six years and over 70 years.

Most employers and employees (over 16 years and under 66 years of age) contribute Pay Related Social Insurance (PRSI) to the national Social Insurance Fund. In general, the payment of social insurance is compulsory. The term 'insurable employment' is used to describe employment that is liable for social insurance contributions. Some people who have unearned income are also liable for PRSI. A wide range of benefits, including health benefits (optical, aural, dental, maternity), jobseeker's allowance, pension etc are available to people who have paid social insurance. Entitlement to these benefits depends on a number of conditions as well as the social insurance contribution requirement. However, many of these benefits were curtailed or withdrawn in response to the financial crisis in 2008.

According to the Department of Health, 2.14 million people, 46% of the population, held private health insurance as at the end of September 2016.[8] Having private cover doesn't preclude persons from entitlements under the public healthcare system. Vhi Healthcare is the largest provider of voluntary private health insurance. It is a statutory body whose board is appointed by the Minister for Health. At the time of writing, other health insurers providing cover include: Laya Healthcare, Aviva Health and GloHealth. There are a small number of 'restricted membership undertakings' that deal only with particular groups of employees such as the Gardai (national police force), prison officers and other select groups.

Table 1 Case studies for scheme coverage and treatment entitlement

Patient	Scheme Eligibility	Items of treatment covered	Price charged by dentist	Dentist Reimbursement (covered treatments)	Paid by patient (out of pocket)
Jeanne 10 years old	Public Dental Service	Screening, preventive treatment, and treatment in respect of defects noted during screening	NA	NA – salaried dentist	€0.00
Karen 19 years old Full-time Student Financially dependent No Medical Card	Not Eligible	NA	*€44.00 – oral examination €61.00 – scale & polish €82.00 – extraction	NA	Full Fee for all items
Gemma 19 years old Full-time Student Financially dependent Medical Card Holder	Dental Treatment Services Scheme	1 x dental examination p.a.	NA for covered item	€ 33.00	€0.00 for covered items Full fee for all other items
		2 x fillings p.a.	NA for covered item	€50.06 – amalgam restoration €51.88 – composite restoration (6 anterior teeth only)	
		Necessary extractions & emergency treatment – if she is considered high risk she can access all pre 2010 treatments	NA for covered item	€39.50 – extraction	
Mark 32 years old Single Employee Income of €2,000/month	Dental Treatment Benefit Scheme	1 x dental examination p.a.	NA for covered item	€ 33.00	€0.00 for covered items Full fee for all other items
David 32 years old Single Self-employed Income of €2,000/month	Not Eligible	NA	*€44.00 – oral examination €61.00 – scale & polish €82.00 – extraction	NA	Full Fee for all items
Paul 32 years old Single Income of €800/month Medical Card Holder	Dental Treatment Services Scheme	1 x dental examination p.a.	NA for covered item	€ 33.00	€0.00 for covered items Full fee for all other items
		2 x fillings p.a.	NA for covered item	€50.06 – amalgam restoration €51.88 – composite restoration (6 anterior teeth only)	
		Necessary extractions & emergency treatment – if he is considered high risk he can access all pre 2010 treatments	NA for covered item	€39.50 – extraction	
Emma 75 years old Single Income of €2,000/month Medical Card Holder	Dental Treatment Services Scheme	1 x dental examination p.a.	NA for covered item	€33.00	€0.00 for covered items Full fee for all other items
		2 x fillings p.a.	NA for covered item	€50.06 – amalgam restoration €51.88 – composite restoration (6 anterior teeth only)	
		Necessary extractions & emergency treatment- if high risk including medical conditions she is eligible for more comprehensive care.	NA for covered item	€39.50 – extraction	
Linda 75 years old Single Income of €3000/month No Medical Card	Not Eligible	N/A	*€44.00 – oral examination €61.00 – scale & polish €82.00 – extraction	N/A	Full Fee for all items

*Note: 2010 prices. Significant regional variation in prices observed. Source: Average National Market Prices from National Consumer Agency Survey 2010.
Survey available at http://www.ccpc.ie/march-2010-doctors-and-dentists-prices-survey

Oral healthcare schemes

The organisation of oral healthcare in the European Union (EU) and European Economic Area (EEA) can be categorised under six broad headings: the Nordic, Bismarkian inspired, Beveridgian, Southern European, Eastern European and Hybrid models.[9] All six models have their roots in the history, cultures, and social aspirations of the countries concerned, and there are often significant variations in the details of each model from country to country. The system of oral healthcare delivery in Ireland has been described as a Hybrid model.[9] Generally in this system, oral health provision is a public/private mix.

Dental services in Ireland are delivered through three publicly funded schemes, described below, in addition to privately funded services where the patient is liable for full fees. Figure 1 summarises the description of the Irish dental delivery system. Table 1 provides a sample of case studies illustrating scheme coverage and treatment entitlement.

Public Dental Service (PDS)

Under the Health Act, 1953, the health authorities were given the responsibility to make available dental treatment and dental appliances to children attending national school and children less than six years of age. Dental treatment and dental appliances were to be made available free of charge, with the exception of replacement appliances in certain circumstances. The Dental Health Action Plan included in the 1994 'Shaping A Healthier Future' health strategy[10] recommended the extension of eligibility for this to scheme to children under the age of 16 years. In 2008 eligibility was expended to all children under 16 years regardless of their attendance at a national school. Approximately 1.1 million children up to the age of 16 and adults with special needs are eligible for treatment under the PDS which currently provides emergency, routine and preventive oral health services. The service operates the Schools Screening Service which provides for routine dental care for children of school-going age, arranged through local national schools. The service is expected to target children at three stages in their development (at age eight years, ten years and 12 years). Children are screened usually in clinics and receive identified primary care within the salaried service. The service for pre-school children is largely an educational one for parents or carers and referral to secondary care. Emergency services (treatment/advice, as appropriate) are also provided for all children up to 16 years of age at any local HSE Dental Clinic. In most areas, all special needs schools for children are screened annually and children are then referred to their local clinic for any necessary treatment. Reports from the Irish Dental Association suggest that 250,000 children are treated annually under the PDS,[11] representing 34% of the population in the 5-15 year age group. Adults with special needs may be assessed in residential or day centres, with follow-up treatment provided in HSE clinics, if this is the most appropriate location for their dental care.

Dental Treatment Services Scheme (DTSS)

Following the Dental Health Action Plan initiative,[12] the DTSS was set up in 1994 in collaboration with the Irish Dental Association (IDA), the membership body for dentists in Ireland. The objective of the DTSS is to improve the oral health of adult medical card holders, that is, the population group entitled to certain medical services free of charge (as previously described), and thereby reduce the inequality between this population group and the population as a whole. The DTSS was introduced on a phased basis as follows:

Initially, persons aged 65 years and over were identified as a priority group for routine dental treatment, and an emergency scheme was introduced for all the eligible population. The treatment strategy also included the development of specialised dental services in orthodontics and oral surgery.

In the 2nd phase, introduced on 1 June 1996, the scheme was expanded to provide routine dental treatment to medical cardholders in the 16-34 year age group, and full dentures were provided to medical cardholders who did not have any natural teeth.

The scheme was further expanded, in the year 2000, to provide routine dental treatment to medical cardholders in the 34-65 year age group. Routine treatment is divided into two general groups, known as 'above the line' treatments and 'below the line' treatments. 'Above the line' procedures, such as oral examinations, prophylaxis, and simple restorations, can be completed without prior approval of the Health Services Executive (HSE). Prior approval is required from the HSE for all 'below the line' procedures, such as replacement of dentures within two years.

DTSS eligible persons are currently entitled to one oral exam per annum, two fillings per annum, any necessary extractions and other treatment as entitled or required. Patients who are considered vulnerable or high risk can also access more comprehensive care. The responsibility for providing a dental treatment service to adult medical card holders under the DTSS is principally delivered by private dentists. Patients may choose any participating contracting dentist from a published panel. Expansive treatments do require prior approval from the principal dental surgeons.

The most recent figure available for the number of those eligible for treatment under the DTSS is 1.37 million (30% of the population).[6] Data from the PCRS suggest that 420,459 persons were treated under the DTSS in 2015,[13] indicating an overall utilisation rate for the scheme of 31%.

Dental Treatment Benefit Scheme (DTBS)

The DTBS provided discounted dental treatment to Pay Related Social Insurance (PRSI) payers, under the jurisdiction of the Department of Social Protection, up until 2009. The grounding legislation for the DTBS was Section 25 of the 1952 Social Welfare Act, which established the Social Insurance Fund. The scheme may be accessed by employees (aged 16 years and over), retired people, and their dependent spouse/partner, if they have sufficient contributions in certain PRSI Classes. A PRSI contribution consists of an employer's and, where payable, an employee's share of PRSI; it is a percentage of an employee's reckonable earnings each week and depends on income and occupation (PRSI class). The amount of contributions required to be eligible for treatment benefits depends on age.

Until 1 January 2010, insured persons under the DTBS who had made sufficient PRSI contributions were entitled to an oral examination and to two scale and polishes annually at zero cost to the patient. A co-payment by the patient (20%) was required for routine treatments with limits on more expansive treatments depending on the claimant's earnings. However, in Budget 2009, the Irish Government announced cuts to the DTBS and from 1 January 2010 eligible adults and their spouses were entitled to just one free oral examination per annum up to December 2016. Following Budget 2017, in addition to an oral examination, patients will also now be entitled to one scale and polish annually. Full fees are payable for all other services. The most recent available data from the Irish Dental Association suggests that there were 2 million eligible persons for the DTBS in 2011, but that only 272,000 (13.6%) patients availed themselves of the free annual oral examination.[14]

Private dental care and treatment

Outside of the three publicly funded dental schemes described above, patients are liable for full fees for dental services. Approximately 700,000 Irish adults (20% of the adult population) are currently not entitled to treatment under the public schemes.[14] At an overall level, the most recent available data suggests that 43% of persons aged 18 years have at least one dental consultation annually.[15] Privately

funded oral healthcare and treatment may be paid for via direct payments from patients to dentists or via grant in aid schemes (private insurance) operated by companies such as Vhi Healthcare and DeCare Dental. Some treatments are eligible for tax relief. The past decade has also seen corporates, such as Smiles Dental with 20 clinics nationwide[16] and Dental Care Ireland with ten clinics,[17] enter the Irish dental market. A number of multinational companies operating in Ireland also employ dental staff.

Typical oral healthcare costs paid by a variety of patients are shown in Table 1.

Oral healthcare workforce

In 2015, there were 2,828 dentists registered with the Dental Council of Ireland (1,512 [53%] male and 1,316 [47%] female). This represents a dentist density ratio of 6.1 dentists per 10,000 inhabitants.

Since 2005, the number of registered dentists has increased by 21.5%, from 2,327 to 2,828. Numbers declined during the recession years between 2011-2013, but are now on the increase. There are currently 2,478 private dentists registered in Ireland, of whom 1,827 (74%) are registered to provide services in the DTSS.[6] Additionally, there are approximately 400 salaried dentists employed by the HSE providing services to those up to the age of 16 years, and special needs groups in the PDS.[11] Of the salaried dentists, 184 have a DTSS contract number and could potentially provide treatment in the DTSS, although there is no evidence that this is the case. Table 2 provides a breakdown of the oral healthcare workforce. As at 31 December 2015 661 dentists with an Irish qualification were registered with the United Kingdom's General Dental Council. Historically, in some years, up to 50% of new dental graduates from the Republic of Ireland have moved to the UK to work. The percentage has fluctuated, depending on employment opportunities and the financial climate in the two countries.

The concept of team dentistry has developed in Ireland over the last 20 years. There are now 487 dental hygienists and more recently orthodontic therapists and clinical dental technicians have been trained and employed.

Table 2 Register of Dentists and Auxiliary Dental Workers, Ireland, 2015

Dentists	Dental Nurses	Dental Hygienists	Clinical Dental Technicians	Orthodontic Therapists
2,828	772	487	31	16

Source: Dental Council of Ireland
This represents the number registered with the Dental Council. Registration is on a voluntary basis and many choose not to register.

Table 3 provides a breakdown of the 2,828 dentists registered in 2015 by nationality of qualification.

Clinical dental technicians (CDTs) are dental healthcare professionals, registered with the Dental Council, who provide complete dentures and partial dentures directly to patients when the patient's oral health is established through a recent visit(s) to a dentist. A CDT is permitted to carry out work on persons of 18 years and over provided such dental work does not include any work on natural teeth or on living tissue. CDTs must refer patients to a dentist for treatment that is outside their scope of practice or if there is a concern about a patient's oral health. CDTs can also treat eligible patients with medical cards under the DTSS, if they have a contract with the HSE to so do.

Currently, only two dental specialties are recognised by the government in Ireland: oral surgery and orthodontics. In 2015 there were 56 specialist oral surgeons and 153 orthodontists registered with the Irish Dental Council.

Dental education

Dental education is offered by two dental schools, one at Dublin Dental University Hospital (DDUH) at Trinity College Dublin (TCD) and the other at Cork University Dental School and Hospital at University College Cork (UCC). TCD offers undergraduate programmes in dental science, dental technology, clinical dental technology, dental hygiene, orthodontic therapy and dental nursing. It also offers postgraduate training in orthodontics, oral surgery, paediatric dentistry, prosthodontics, periodontology and special care dentistry. UCC offers undergraduate programmes in dental surgery, dental hygiene, and dental nursing with postgraduate programmes in clinical dentistry and public dental health. In total, circa 80 undergraduate places are offered by the two dental schools each year for Bachelor of Dentistry programmes.

In December 2012, a reciprocal agreement was signed between the Commission on Dental Accreditation of Canada (CDAC) and the Dental Council of Ireland. Under this agreement, the CDAC and the Dental Council of Ireland agree that each party recognises the accreditation standards and policies of the other party as being substantially equivalent to its own. Dental graduates from Irish dental schools can therefore now move to Canada and practise dentistry (once they have completed the State Board examinations), without the necessity to complete an additional two years in a dental institution in Canada. Canadian graduates can also now work in Ireland. There are 12 dental programmes covered under this agreement, ten in Canada and two in Ireland. Students who graduate from these programmes after 5 December 2012 can benefit from its provisions. The agreement is for an initial period of five years and is subject to ongoing review over this period.

Continued professional development

The dental profession in Ireland is regulated by the Dental Council of Ireland, a statutory body. Only dentists listed on the Irish Register of Dentists can legally practise dentistry in Ireland. The Dental Council's remit is to promote high standards of professional education and professional conduct among dentists and other oral health care workers. The concept of mandatory CPD is supported by the Dental Council but this will require a change in the current legislation for it to

Table 3 Nationality of qualification of the 2,828 dentists registered in Ireland in 2015

Ireland	UK	Hungary	Poland	Romania	Germany	Other EU	Non EU
1,982 (70%)	330 (11.7%)	105 (3.7%)	78 (2.8%)	48 (1.7%)	43 (1.5%)	103 (3.6%)	139 (4.9%)

Source: Dental Council of Ireland

become mandatory. However, it is anticipated that participation in dental CPD activities will become mandatory when the current review of the Dental Act is completed.[20] In the meantime the Dental Council's Code pertaining to Professional Behaviour and Dental Ethics states that all dentists have an obligation to maintain and update their knowledge and skills through CPD and thus the Dental Council has established a voluntary CPD scheme. In anticipation of the legislation change, a pilot study has been conducted at University College Cork. The study will determine the self-assessed (CPD) needs of dental practitioners and identify how each discipline can best be served by a dental CPD programme. It will set findings in the context of the available literature and contribute to the development of CPD programmes.[20]

Costs of oral healthcare

In 2013, Ireland's expenditure on healthcare as a percentage of total government expenditure was 13%, two percentage points below the EU28 average.[21] The current estimate for total national expenditure on health in 2014 is €19.1 billion, representing 10.1% of gross domestic product (GDP) and 11.7% of gross national income (GNI).[22] The exchequer funded 69% or €13.3 billion of this expenditure and household out-of-pocket payments and voluntary health insurance funding comprised the majority of the remaining €5.8 billion.[22] Of the €19.1 billion expenditure on health, just €605 million (3.2%), was accounted to the provision of dental services. Of the €605 million total expenditure on dental services, €500 million (82.6%) was out-of-pocket payments by patients.[22]

Payment systems for oral healthcare

The type of remuneration or payment system can influence the amount and type of service provided.[23] In Ireland's hybrid system of dental delivery, dentists are remunerated in three ways: salaried, fee-per-item, and fee-per-item with co-payment.

1. PDS dentists are remunerated on a fixed salary basis by the HSE, Department of Health. Exchequer expenditure on emergency, routine and preventive oral health services under the PDS in 2014 was in the region of €60 million excluding any capital costs.[18]
2. Independent dentists in their own practice registered to provide services in the DTSS are remunerated fee-per-item of service by the HSE, Department of Health. Coverage is provided at zero monetary cost to low income adults. In 2015, payments to dentists for treatments provided to this group amounted to €66.4 million.[13]
3. Independent dentists, in their own practice, registered to provide services in the DTBS are remunerated, through a fee-per-item of service, by the Department of Social Protection. Until cutbacks to the scheme in 2009, a co-payment by the patient (20%) was required for routine treatments [except oral examination and scale and polish] with limits on more expensive treatments. In 2012, payments to dentists for the single oral examination entitlement of persons qualifying for the scheme, provided on a fee-per-item basis without co-payment, was €9 million.[24] Additionally, private dentists providing dental services from their own practice, directly to patients, are paid on a fee-per-item basis by patients. As already stated, this out-of-pocket expenditure (€500 million in 2014) by patients accounted for 82.6% of total expenditure on dental services in 2014.[22] To assist with the cost of private dental care, dental insurance is available in Ireland through both specialist dental insurers and general health insurers. Additionally, some general health insurance policies provide reimbursement of certain dental expenses typically subject to an excess and or monetary cap.

Oral health promotion

The Dental Health Foundation (DHF) Ireland emerged from within organised dentistry in 1977 and is an independent body part funded by the HSE and The Department of Health. Its mission is to promote oral health in Ireland, by providing effective resources and interventions and by influencing public policy to ultimately improve the public's oral health related quality of life. The Foundation works on a partnership basis with State bodies, the oral healthcare profession, consumer groups, the oral healthcare industry, the community, and education sectors. Its Strategic Plan 2015-2017[19] sets out a number of goals and a practical integrated programme of work for effective oral health promotion.

Epidemiology

Epidemiological studies have been undertaken in the Republic of Ireland on adults, children and also on children and adolescence with special needs.

Children

The most recent National Survey of Children's Oral Health in Ireland (Northern Ireland and the Republic of Ireland) took place in 2001 and 2002.[25] The protocol for the survey was developed by the project team in the Oral Health Services Research Centre (OHSRC), University College Cork, following widespread consultation with relevant parties. The main findings from the survey for the Republic of Ireland include:

- Dental caries levels are lower among children with fluoridated domestic water supplies than they are among those with no domestic water fluoridation
- The factors associated with variation in decay levels amongst 15-year-old adolescents were fluoridation status, parents' occupational status, frequency of tooth brushing, method of rinsing after tooth brushing and frequency of snacking
- The level of oral hygiene was judged to be unsatisfactory in the majority of children
- The percentage of 15-year-olds who were under orthodontic treatment or had completed treatment rose from 14% in 1984 to 23% in 2002
- Dependants of medical card holders were less likely to have had orthodontic treatment than those without medical cards (17% *v* 26%)
- Amongst 15-year-olds, 22% had trauma to their anterior teeth, a large proportion due to sports injuries. A high proportion of this trauma to anterior teeth remains untreated
- One in five 12-year-old children, and one in three 15-year-old adolescents, had tooth wear exposing dentine on at least one anterior permanent tooth
- 46% of parents were 'very satisfied' and 37% were 'satisfied' with the dental service provided to their children, 4% of parents were either 'dissatisfied' or 'very dissatisfied' with the service.

Whilst the survey illustrated that decay levels in children have fallen significantly between 1984 and 2002, the authors did caution against complacency as dental caries continues to be a very common disease, reporting that by age 15, 73% of adolescents with fluoridated water supplies in the Republic of Ireland already have caries in their permanent teeth.[25] The most recent reported average number of Decayed Missing Filled Teeth (DMFT) scores at age 12 years for Ireland is 1.1.[26] The Fluoride and Caring for Children's Teeth (FAACT) cohort study is currently being undertaken. This will

assess the differences between fluoridated and non-fluoridated areas as well as providing an insight into the current status of children's oral health in Ireland.[27]

Children and adolescents with special needs

A survey of the oral health and need for dental treatment for children and adolescents with special needs was undertaken in Ireland in 2003.[28] The main findings from the survey included:

- On average caries levels were similar to those among the general population but there was variation according to type of disability
- The moderate intellectual disability grouping had the lowest levels of dental caries, while the mild intellectual disability category had the highest
- There tended to be less untreated disease compared with the general population. However, permanent teeth were more frequently extracted than filled for those children with a mild or moderate intellectual disability, compared to the general population
- Tooth loss among those with disability was a greater cause of concern than for the general population because of their diminished capacity to tolerate or maintain replacement teeth
- Children with special needs had fewer fissure sealants on their teeth. Just over 30% of 5-year-olds and 58% of 12- and of 15-year-olds attending special needs schools required some kind of treatment for dental caries; the most common types of treatment required were fissure sealants and fillings
- The levels of untreated trauma and treatment need for trauma were for the most part higher among children with special needs than in the general population.

Adults

The most recent National Survey of Adult Oral Health (NSAOH) in Ireland took place in 2000/02.[29] The main findings of NSAOH 2000/02 include:

- The percentage of adults who have lost all their natural teeth has declined dramatically since the first survey in 1979
- 41% of those aged 65+ were edentulous in 2002, 46% females, 35% males
- Substantial reduction in the number of extracted teeth particularly amongst non-medical card holders
- For those aged 65+, 46% of medical card holders were edentulous, 29% for non-medical cardholders
- For those dentate subjects aged 65+, the mean number of natural teeth present was 11.6 for non-medical cardholders and 7.2 for medical cardholders. 16.7% met the WHO target of 20 natural teeth present
- For those aged 65+, 6% of those who were edentulous had no dentures, with 48% wearing dentures that were ill fitting or too old
- There was evidence that medical cardholders, older adults, those having mild to moderate systemic diseases, and those who smoked tobacco had higher levels of periodontitis and the poorest oral heath related quality of life
- The increased retention of natural teeth has led to a higher burden of periodontitis with 50% of those aged 65+ found to have shallow and deep pocketing. The NSAOH states that this may be attributable to the relatively low utilisation of dental services by this age group and highlights that dental hygienists could provide the treatment needed for periodontal conditions and diseases, perhaps justifying the decision in 1996 to legalise the training and deployment of dental hygienists.

The survey highlights a considerable improvement in the level of oral health amongst adults since the previous study in 1989/90. The improvements reflect considerable investment in the provision of oral health for adults during this period. However, the investment in oral health was severely constrained during the financial crisis, post 2008. The Irish Longitudinal Study on Aging (TILDA) now incorporates oral health assessment which should provide greater insight into adult's oral health.

Adults with intellectual disability

A survey of the oral health and need for dental treatment for adults with intellectual disability in Ireland was undertaken in 2003.[30] The main findings from the survey include:

- Treatment of decayed teeth by extraction and loss of all natural teeth is more common among adults with an intellectual disability that in adults from the general population
- Sixty-one percent of adults with an intellectual disability in full time residential care aged 55+ years have no natural teeth compared to 41% of adults aged 65+ years in the general population
- The majority of the adults with an intellectual disability who are missing all their own natural teeth do not wear dentures and have been assessed by the dentists as not being suitable for dentures
- Twenty percent of the 35–54 year old age group were found to have mucosal lesions.

This study highlighted the need for the expansion of both primary and secondary dental services for adults with an intellectual disability in residential care in Ireland. In addition, training of care staff in oral health care for adults with an intellectual disability and oral health promotion programmes for units was urgently required.

Discussion

The Irish healthcare system can be characterised as having been in a process of constant review over the past 20 years, with the implementation of a number of staged initiatives since the late 1990s. This process included major structural changes during the period of economic growth that Ireland enjoyed up to 2007, and further changes, affecting both the organisation and orientation of the healthcare system, following the cutbacks in government expenditure, resulting from the economic downturn in 2008 and the severe recession that followed. Under the demands of fiscal austerity, the Irish economy contracted severely and the healthcare system experienced significant strain with unprecedented cuts in public spending. The national health budget was cut, user charges were introduced and/or increased, and eligibility was removed for many aspects of statutory health coverage.

Since 2010, limited resources have imposed restrictions on the public sector supply of dental services in Ireland. Cover provided by the three publicly funded schemes has reduced substantially, increasing the cost burden for patients. With a reduction in entitlements, expenditure on the DTSS fell sharply from €86.8 million in 2009 to €52.2 million in 2011, although the number of people entitled to treatment rose over the same period.[6] The Irish Dental Association reports that the number of oral examinations under the DTBS scheme fell by over 30% between 2008 and 2011.[14] The Irish Dental Association highlighted the pressure on the PDS, with growing waiting lists and evidence of increased levels of untreated dental disease in patients.[11] Furthermore, dental fees increased rapidly in the period 2005-2011, highlighting potential issues with affordability and equitable access to dental care.[31] Increased dental fees and

the growth in the level of out-of-pocket expenditure may have contributed to 'dental tourism', with patients from Ireland accounting for 20% of patients arriving in Budapest for dental care.[32] In a wider European context, the economic burden of curative oral care, €79 billion in 2012 with the potential to rise to €93 billion by 2020, the challenges of demographic change, and inequitable access to oral healthcare have also been raised as challenges for both citizens and policymakers.[33]

Future Health – A Strategic Framework for Reform of the Health Service 2012-2015 published by the Department of Health in 2012 acknowledged that the need for change in Ireland's health service is unquestionable. It highlighted that the system faces major challenges including significantly reducing budgets, capacity deficits, and an ageing population, thus requiring large-scale change that delivers fundamental reform.[34] In 2014, the Department of Health began a three-year project to develop a new national oral health policy under the leadership of the Chief Dental Officer. This was 20 years after the last such plan, the Dental Health Action Plan, 1994.[12] The 2014 oral health policy development project has three key aspects: (i) a needs assessment to inform how new services should be provided; (ii) a review of oral health care resources; and (iii) consultation with stakeholders, including the public, on new ways of delivering oral health services. An independent panel with expertise in oral health services development and research is assisting the Department of Health in both an advisory capacity and oversight capacity. An Academic Reference Group has also been established to support future policy and to inform its evidence base. This policy development work is ongoing at the time of writing.

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