End the decay

The cost of poor dental health and what should be done about it

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Brotherhood of St Laurence

Working for an Australia free of poverty

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Contents

List of tables

List of figures

List of boxes

Abbreviations

AIHW	Australian Institute of Health and Welfare
ARCPOH	Australian Research Centre for Population Oral Health, University of Adelaide
NHHN	National Health and Hospitals Network
NHHRC	National Health and Hospitals Reform Commission

Glossary

Edentulism	loss of all natural teeth
Periodontal pockets	gaps between teeth and gums
Pulpitis	inflammation of the pulp within teeth

1 Introduction

Dental health has been largely excluded from the Australian Government's health scheme Medicare. The result of this is significant suffering by those who cannot afford the cost of private dental care. The problem is concentrated among low-income and marginalised groups who identify the financial cost as the primary reason for not seeking help with dental problems.

The neglect of oral services is not a consequence of the exorbitant cost of dental care to the nation. Dental care presently constitutes about 6% of national health spending and comprehensive reform could be effected with the addition of less than 2 percentage points to this.

Nor can failure to treat oral health, like other types of health problems, be attributed to public opposition to reform or the cost of change. A recent Newspoll survey of 1207 people, undertaken for *The Weekend Australian* newspaper of 5–7 August 2011, found that 75% were 'somewhat' or 'strongly' in favour of a Medicare-type dental scheme that would add three-quarters of 1% to income tax. Support was across all income and age groups and from individuals of all political persuasions.

The present report has been commissioned by the Brotherhood of St Laurence, which has for some time been concerned that the costs of poor dental health are largely borne by the most disadvantaged in our community. In some cases, this means people are living with painful and possibly unsightly dental issues that can cause or exacerbate other illnesses and reduce the capacity to obtain and retain employment. Poor dental health and the inability to afford treatment undermine people's ability to participate in the social and economic life of the nation.

After the 2010 election, the Australian Government and the Greens party have agreed, as a matter of priority, to focus on implementing a new dental scheme that will better meet the needs of the most disadvantaged Australians. This report was commissioned to help inform the policy development process. Specifically, it seeks to provide an overview of the economic costs of poor oral health and an assessment of who is bearing these costs. Finally, it outlines some options for reforming the dental health system to provide more affordable and accessible care for disadvantaged groups within the community.

This report is not a comprehensive literature review. More detailed analysis and discussion of the issues and proposals for reform may be found in the references, especially the work by the Brotherhood of St Laurence (Bond 2010a, 2010b); and in the research from Adelaide University's AIHW Dental Statistics Unit and Australian Research Centre for Population Oral Health (ARCPOH) by Spencer (2001), Spencer and Harford (2007, 2008), Harford et al. (2011), ARCPOH (2009), as well as by Econtech (2007) for the seniors organisation COTA; the submissions to and reports of the National Health and Hospitals Reform Commission (NHHRC 2009a, 2009b); the evidence-based resources developed by the Victorian Government in Rogers (2011); and the historical overview by Duckett and Willcox (2011).

2 The burden of dental disease

Rogers (2011, p. 1) has summarised the available statistics and concludes that:

- the main oral conditions are tooth decay, gum disease, oral cancer and oral trauma; that tooth decay is Australia's most prevalent health problem
- edentulism (loss of all natural teeth) is the third-most prevalent health problem
- gum disease is the fifth-most prevalent health problem
- tooth decay has more than five times the prevalence of asthma among children.

These oral conditions create a 'burden' as a result of their direct effect on people's quality of life and the indirect impact on the economy. Evidence for the former may be obtained from the studies conducted using the disability adjusted life year (DALY) methodology introduced by the World Health Organization to compare the burden of different diseases. Evidence with respect to the economic impact is less readily available.

2.1 Direct burden upon individuals

Quality of life is affected by dental disease in a number of different ways as shown in Box 1. These effects are difficult to measure and to compare with the suffering and loss from other causes of disease. The DALY was introduced by the World Health Organization in an attempt to make such broad comparisons (Murray & Lopez 1996). The DALY combines estimates of the years of life lost due to premature death with estimates of the lost quality of life that occurs as a result of the disease. For example, 1,000 DALYs might be lost from the premature death in motor accidents of healthy people who would have, altogether, lived another 1,000 years. Alternatively, 1,000 DALYs might be lost from 4,000 people suffering from a disease that reduced their quality of life by 25% for a year.

Box 1 The effect of poor dental health on the quality of life

- Loss of teeth impairs eating, leading to reduced nutritional status and diet-related ill health, particularly for children and older people.
- A quarter of Australians report that they avoid eating some foods as a consequence of the pain and discomfort caused by their poor dental health. Nearly one-third found it uncomfortable to eat in general.
- Oral disease creates pain, suffering, disfigurement and disability.
- Just under one-quarter of Australian adults report feeling self-conscious or embarrassed because of oral health problems.
- Poor oral health is linked to other health conditions such as cardiovascular disease, stroke, peripheral vascular disease, pre-term birth and low birth weight, hepatitis C, otitis media, pancreatic and oral cancers and in some cases death.

Source: Rogers (2011)

Table 1 compares the DALY loss from oral diseases with selected other problems. The (most recent) estimates indicate that oral conditions were responsible for the loss of 24,507 DALYs. This is smaller than for many major diseases but is as large as the burden arising from hepatitis, melanoma, leukaemia and schizophrenia.

When only quality of life is considered, the impact of oral conditions is estimated to be greater over a 12-month period than the effect of all infectious diseases combined or of either breast cancer or lung cancer. The impact is 46%, 56% and 34% of the effect upon quality of life of ischemic heart disease, stroke and asthma respectively (Begg, Vos et al. 2007).

As Table 2 shows, the total loss was predominantly a result of dental caries (12,008 DALYs), pulpitis (6,497 DALYs) and edentulism (5,264 DALYs). The burden occurred across all age groups but particularly those aged 25–64.

Table 1 Oral and selected causes of disability adjusted life years (DALYs), Australia 2003

Cause	DALYs
Oral conditions	24,507
HIV/AIDS	6,660
Hepatitis	19,889
Melanoma	20,236
Leukaemia	19,956
Mental disorders: heroin or polydrug dependence	16,839
Schizophrenia	27,502
Multiple sclerosis	5,252

Source: Extracted from Begg et al. (2007, Table 3, p. 221)

Table 2 Disability adjusted life years for oral conditions by age, gender and cause, Australia 2003

Cause	Persons	Age 0–14	Age 15–24	Age 25–64	Age 65–74	Age 75+
Dental caries	12,088	1,296	1,549	7,679	802	761
Periodontal disease	581	10	39	467	49	16
Edentulism	5,264	5	19	3,447	1,362	431
Pulpitis	6,497	867	557	4,230	442	403
Other	77			26		50
Total oral conditions	**24,507**	**2,178**	**2,164**	**15,849**	**2,655**	**1,661**

Source: Extracted from Begg et al. (2007, Table 3, p. 221)

2.2 The indirect burden on the economy

The cost of poor dental health includes:

- *direct costs* arising from:
  - dental care by dental health workers
  - dental care by other health workers
  - treatment of other oral health-induced illnesses
- *indirect costs (lost productivity)* arising from:
  - lost time from the workforce and from education for dental treatment
  - lost time because of illness attributable to oral ill health.

The distinctions are important. The cost of treatment by dental health workers is offset by the benefit of avoided morbidity. Treatment by other health workers, such as doctors and hospital staff, is often a higher-cost alternative, which could be reduced with adequate dental care.

The cost of oral health-induced illness is largely avoidable and, in a proper assessment of policy reform options, should be subtracted from the net cost of the treatment that led to its prevention. Similarly, indirect costs arising from morbidity could be avoided or at least reduced. In sum, in an ideal system some preventive health treatment costs should be increased because they would generate offsetting benefits. Others should largely disappear because of these expenditures.

Apart from the first category—the $6.7 billion expenditure on recognised dental services in 2008–09 (AIHW 2010)—good data on these costs do not exist. Some of the estimates of their order of magnitude are included in Box 2. The estimates are fragmented. They refer to different types of cost and their significance varies. The largest category—the indirect cost of work loss—is an amalgam of (largely) unavoidable absenteeism by individuals receiving beneficial treatment and work loss arising from avoidable morbidity.

The costs fall upon different groups. Some of it is shared across the community in the form of lower tax revenues, more support services and lower productivity (and therefore lower wages). Because of the very low social insurance against the direct costs, most of these fall upon those with dental disease.

Rogers (2011, p. 1) has also noted that dental admissions are the largest category of acute preventable hospital admissions and that oral health problems are the second-most expensive disease group in Australia, with direct treatment costs of over $6 billion annually, and additional care costs exceeding a further $1 billion.

The indirect economic costs of poor dental health would be in large part avoided with better access to dental services, and therefore these costs should be subtracted from the direct costs of an expanded dental scheme. The incomplete data compiled in Box 2 suggests an avoidable cost of $412 million for those over 65 years of age (Econtech 2007), $223 million in avoidable hospital costs (NHHRC 2009b estimate of numbers and Commonwealth of Australia 2010 estimate of average cost per hospital admission of $4,471) plus avoidable productivity losses of $660 million estimated from work days lost by those in the workforce (Gift et al.). Even allowing for some overlap between these categories, economic savings in the order of $1,295 million would pay for at least two-thirds of the additional costs of the extended dental scheme discussed later in this

document. Others (Leeder & Russell 2007) have estimated that the total direct costs and lost productivity could be as high as $2 billion. Further, increased access to dentists would relieve pressure on GP services by removing 7–10% of the current use of their services. Pressure on hospitals and hospital waiting lists would be improved as admissions fell by 50,000 (NHHRC 2009b).

Box 2 Estimates of the economic cost of poor dental health

Direct costs of dental services

Expenditure on dental services in 2008–09: $6.72 billion (AIHW 2010)

Direct cost: induced illness

Indirect costs to Australians over 65 years include periodontal-related coronary heart disease, stroke, peripheral vascular disease and pancreatic cancer.

… $412 million per annum (Econtech Pty Ltd 2007)

Direct cost: other health workers

Direct cost of GP services for dental problems (7–10% of total GP services)

… $245–$350 million (Leeder & Russell 2007)

Hospital treatment of dental problems (surgery plus dental extractions)

… $100 million (Leeder & Russell 2007)

Total GP plus pharmacy plus hospital costs

… $500 million (Leeder & Russell 2007)

Hospital treatment of ambulatory dental problems (especially dental caries) in 2004–05

… $9.5 million (Victorian Government September 2007)

Avoidable hospital admissions, 2004–05 from preventable dental conditions

… 50,000 persons (National Health and Hospitals Reform Commission (NHHRC) 2009b)

Or $223 million per annum (using estimate of average cost per admission in 2008–09 as $4,471 (Commonwealth of Australia 2010))

Indirect cost

600,000 days lost from school, 1.1 million days lost from work (Spencer & Lewis 1988)

1 million lost days of work per annum (Leeder & Russell 2007)

US estimate of 148 lost work hours per 100 employed persons (Gift, Reisine et al. 1992)

Extrapolating this to the 2011 Australian workforce of 11.45 million, with an average full-time weekly wage of $1,340, implies a productivity cost of $660 million.

Direct and indirect costs

Total direct costs and lost productivity in Australia: $2 billion (Leeder & Russell 2007)

Direct treatment costs of over $6 billion annually and additional care costs exceeding a further $1 billion (Rogers 2011)

3 Distribution of dental disease

Dental disease is distributed unevenly in Australia. Table 3 summarises results from 2004–06 studies. It indicates that untreated decay is strongly associated with lower income, with those living in rural areas, with Indigenous Australians, concession cardholders and those with no private insurance. Earlier studies indicate that low socioeconomic status (SES) Australians relying on public dental services have very poor dental health (Tables 4 and 5).

Table 3 Distribution of untreated decay, by population group, 2004–06

	% untreated		% untreated
Income		**Place of living**	
<$20,000	39.8	Urban	24.8
$20,000–$40,000	27.5	Rural	31.7
$40,000–$60,000	29.5	**Concession card**	
$60,000–$80,000	21.8	Cardholder	35.3
$80,000+	17.3	Non-cardholder	25.4
Indigenous status		**Private dental insurance**	
Indigenous	49.3	Uninsured	31.1
Non-Indigenous	25.3	Insured	19.7

Source: ARCPOH (2009) from the 2004–06 National Survey of Adult Oral Health

Table 4 Prevalence of selected dental conditions, public versus all patients

	Public	Australian population
Less than 21 teeth	35.3	11.4
Dental decay	46.5	25.5
Periodontal pockets	27.5	19.8

Source: AIHW (2008)

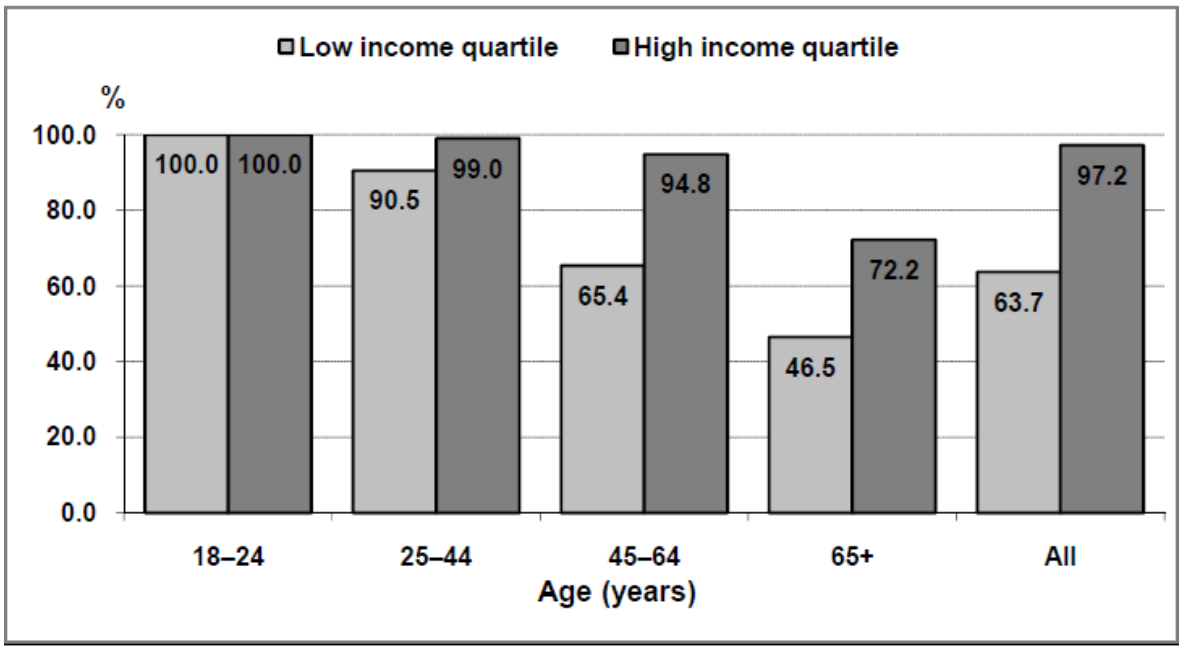
Table 5 Child oral health, lowest versus highest socioeconomic areas

Group	Comparison
All children	70% more decay
Age 5–6 years (WA)	22% more decay
Age 5–6 years (NT)	139% more decay

Source: Ha (2011, pp. 4–5)

The most recent AIHW survey of self-reported dental illness (2009) indicates that income and age remain important predictors of oral health. Figure 1 shows that 95.2% of those in the top income quartile had 21 teeth or more. In contrast, among those in the bottom quartile the figure was 63%, falling to 46.5% for those aged 65 or above.

Figure 1 Percentage of dentate adults with 21+ teeth, low and high income quartiles, 2008



Source: ARCPOH (2009, p. 21)

4 Access to dental services

In broad terms, access to dental services in Australia is inversely related to need.

Between 1994 and 2008, check-ups for all Australians rose from 46% to 55% of total dental visits, indicating better access. However, the improvement was not uniform. People on low incomes, those who live in rural areas and those without dental insurance did not have the same gains in access (as indicated by use) as higher income earners, urban dwellers and those with dental insurance (Harford, Ellershaw et al. 2011).

4.1 Access by income group

Table 6 reports some available data on access to dental care by income group. In 2002, the percentage who had visited a dentist in the previous two years was 83.3% for the top quartile of income earners compared with 62.5% for the lowest quartile (a gap of 20%). By 2008, the percentages were 84.9% and 66.2% (a gap of 18.7%). The National 10-year Dental Plan introduced in 2002 had little impact on inequalities (ARCPOH 2009).

Table 6 Access to dental care by income group

	Income group (%)		Percentage points
	Low	High	Difference
Dental visit in last two years			
2002	62.5	83.3	20.8
2008	66.2	84.9	18.7
Edentulous adults			
2002	24.1	1.4	22.7
2008	17.3	0.3	17.0
Less serious visits*			
2002	77.5	86.8	9.3
2008	75.3	89.3	14.0

* Visit not requiring an extraction
Source: ARCPOH (2009, pp. 17–19)

The prevalence of edentulous adults (i.e. those with no natural teeth) follows a similar pattern. In 2002 the gap between top and bottom income quartiles was 22.7% (1.4% and 24.1%) and in 2008 the gap was 17.0% (0.3% and 17.3%). However, while the prevalence of edentulous adults in the higher income quartile has fallen to virtually zero (0.3%), the percentage of edentulous adults in the lower quartile is still 17.3%. For those aged over 65 it is 30.9%.

The percentage of persons who had visited a dentist in the last year for less serious problems (defined as a visit that did not involve an extraction) increased for the higher income quartile from

86.8% in 2002 to 89.3% in 2008. However, it declined for the lower income group (from 77.5% to 75.3%), so the gap between the two groups increased from 9.3% in 2002 to 14% in 2008.

The percentage of dentate adults (with at least 21 teeth) and was 69.3% in the bottom income group compared with 96.3% in the top group in 2008 (a gap of 27%), and 63.5% compared with 97.2% in 2008 (a gap of 33.5%).

The profile of dental practice summarised in Table 7 reinforces the conclusions from Table 6. Poor access is related to income and financial resources. The table indicates relatively little change over time, apart from the deterioration in access for cardholders and the uninsured, as indicated by the increased percentage who avoided or delayed visits.

Table 7 Profile of dental practice 1994, 2008

Use of service	1994	2008	Change
Received a filling			
Cardholder	45.7	45.7	ns
Non-cardholder	48.8	42.9	ns
Attended private dentist			
Insured	95.7	96.1	ns
Uninsured	81.4	77.7	–3.7
Avoided/delayed visit			
Cardholder	37.4	46.7	+9.3
Non-cardholder	22.7	30.2	+7.5
Insured	17.4	22.9	+5.5
Uninsured	31.2	45.9	+14.7

Note: ns = not significant
Source: ARCPOH (2009)

4.2 Access by age group

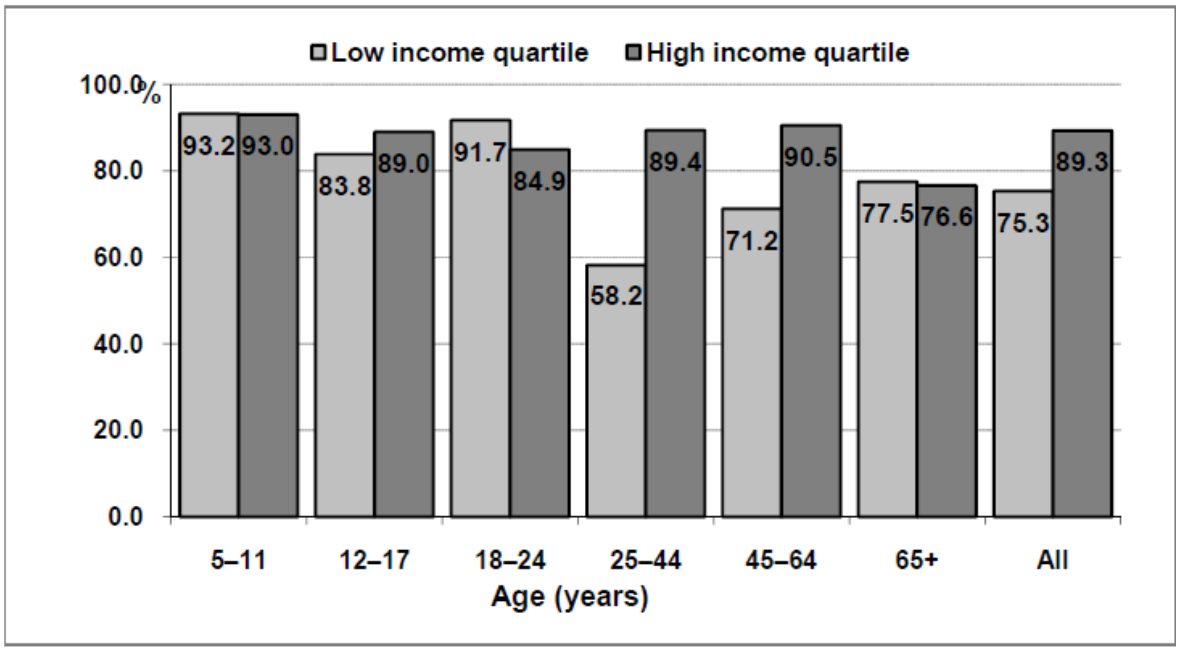
Data on check-up visits also reveal contrasts in access, particularly for those above 25 years (Figure 2). For example, in the 25–45 years age group, the percentages were 62.9% and 22.5% for the top and bottom income quartiles, a gap of 40.4%. For the age cohort 45–64 the percentages were 66.3% and 30.6% respectively, a gap of 35.7%.

As Figure 2 shows, 89.3% of the top income earners had visited a dentist in the previous 12 months.[1] For the lowest income group the figure was 75.3%, and fell to 58.2% for those aged 25–45. The interaction between age, income and access is also shown in Figure 3, which indicates that among the top income group more than 60% of each age-group visit a dentist for a check-up.

[1] The data do not include visits for extractions but these are a relatively uncommon procedure.

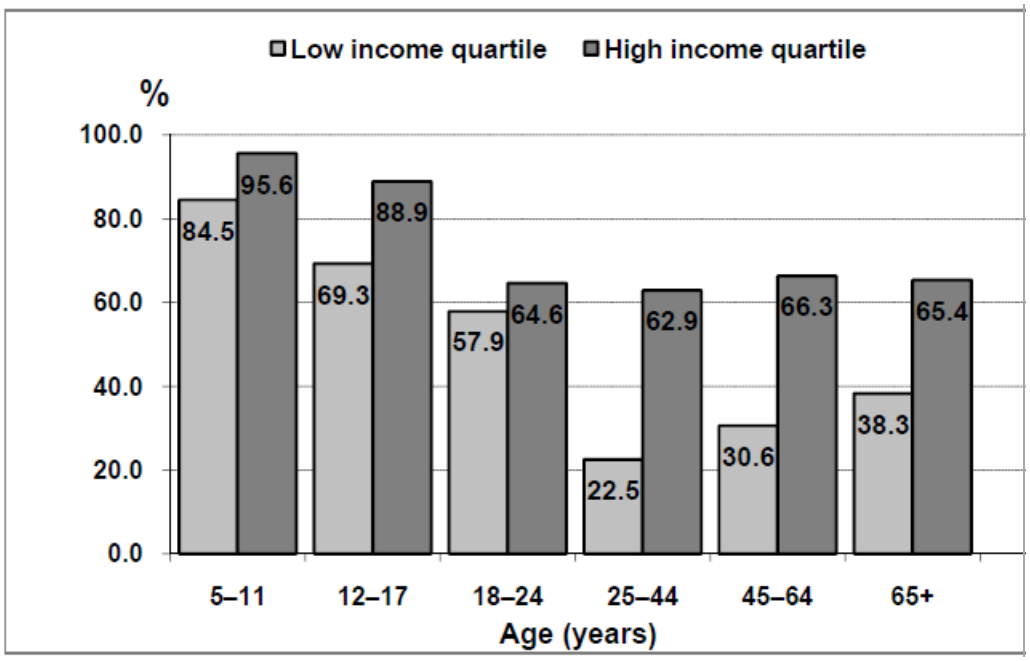
For those on low incomes the figure is smaller for each age category, falling to 22.5% for those between 25 and 45.

Figure 2 Dentate persons who visited in last year who did not have an extraction, low and high income quartiles, 2008



Source: ARCPOH (2009, p. 19)

Figure 3 Percentage of dentate persons who usually visit for check-ups, low and high income quartiles, 2008



Source: ARCPOH (2009, p. 18)

4.3 Access to public dental services

Ideally, dedicated public dental centres would assist those disadvantaged Australians with dental ill health. However, as with the more publicised issue of waiting lists for public hospital services, public dental services are under pressure, which has result in queuing (Hopkins 2007). In 2007, there were 650,000 Australians on waiting lists, with many queuing for more than a year (Parliament of Australia 2007, p. 99).

Using more recent data, Bond (2010b, p. 11) notes that:

> The waiting list for public treatment can be lengthy: the Victorian 2009–10 benchmark was 22 months or almost two years (DHS 2009) ... However, based on 2009 figures, 23 centres exceeded the benchmark. In metropolitan Melbourne, the longest waiting time was 41 months at Rosebud, and 52 months at Ballarat in rural Victoria. The wait for dentures was also lengthy. Both St Albans in metropolitan Melbourne and Wangaratta in rural Victoria had waiting times of 41 months (VOHA 2010).

4.4 Treatment costs

The lack of effective access to care has resulted in a backlog of complex problems and disease. As noted by Bond (2010b, p. v) in evaluating the Brotherhood of St Laurence's Teeth First trial:

> Of the 28 [participating disadvantaged people] surveyed, the most common conditions were rotting or dying teeth, untreated cavities and chipped or broken teeth, with many participants requiring dentures.

Much of the need is very basic and inexpensive so that if treatment is provided early, more expensive disease and treatment, including the need for dentures, is preventable.

The cost of improved access to dental care would initially be inflated by the backlog of existing ill health. Subsequently, the cost of care for disadvantaged Australians should fall, but its long-term level relative to other Australians is hard to determine because of the unknown effect of confounding factors such as the level of transportation, mental and social problems that impact upon access and preventive care.

5 The importance of cost

5.1 Overall impact

Cost is seen as a major reason for the lack of access to dental services. Some of the evidence is summarised in Table 8.

Table 8 Cost as a barrier to dental care access

	1994	2008	Change
Delayed/avoided visit			
Total	27.1	34.3	+7.2
Males	20.7	30.8	+10.1
Females	30.3	37.7	+7.4
Gap between groups			
Patients 'with a problem'	32.5	50.2	+17.7
• Non-cardholder versus cardholder	14.3	19.4	+5.1
• Insured versus uninsured	6.6	11.0	+5.6
Patients for whom 'cost a burden'			
Insured versus uninsured	10.9	18.3	7.4

Source: Harford, Ellershaw & Spencer (2011), Table 5.2

It should be noted that the results are self-reported and hence may be subject to bias. There is, however, no other comparable research available.

The proportion of adults who reported that they had avoided or delayed dental care due to cost increased from 27.1% in 1994 to 34.3% in 2008. It was higher for females, concession cardholders, uninsured persons and those who usually visited a dentist only for a problem, and increased between 1994 and 2008 for cardholders, the uninsured and those who usually visited for a problem.

The Newspoll survey over the weekend of 5–7 August 2011 reported by Adam Cresswell, health editor for *The Weekend Australian* newspaper, reinforced the evidence that cost is an important deterrent to access. It found that more than one-third of the 1,207 adults surveyed said they had postponed or avoided seeing a dentist in the past year to save money (Cresswell 2011).

Those who usually only visited for a problem (as distinct from a check-up) had a higher prevalence of avoiding or delaying dental care due to cost: this prevalence increased from 32.5% in 1994 to 50.2% in 2008. By contrast, the prevalence of avoiding or delaying dental care remained largely unchanged in the group who usually visited for a check-up. This resulted in an increase in the gap between the two groups (Harford, Ellershaw et al. 2011).

5.2 Cost and inequality

Harford, Ellershaw et al. (2011, p. 54), summarising the findings of the National Dental Surveys between 1994 and 2008, found that:

- concession cardholders were more likely to report that cost had prevented them from receiving recommended dental treatment than non-cardholders. In most years, there was a two-fold difference between the groups. The gap between the two groups grew from 14.3% in 1994 to 19.4% in 2008
- uninsured persons were more likely than insured persons to report that cost had prevented recommended treatment; the gap between the two groups increased from 6.0% in 1994 to 11.0% in 2008
- uninsured persons had a higher prevalence than insured persons of reporting that dental visits were a large financial burden, although the difference was significant only in 2002, 2005 and 2008; the prevalence increased from 10.9% in 1994 to 18.3% in 2008 in uninsured persons but remained relatively unchanged in the insured group
- cardholders, the uninsured and those who usually visit for a problem were more likely to report that cost had prevented recommended treatment.

5.3 Government spending and inequality

In 2008–09 over half of Commonwealth (non-Department of Veteran Affairs) dental health 'spending' was in the form of premium rebates to those with private health insurance ($426 million). This disproportionately benefits wealthier households. Targeted state dental spending ($625 million) covered 9.3% of total dental costs (AIHW 2010).

6 Discrimination against Australians needing dental care

The private costs that create a barrier to access are generally referred to as ‘out-of-pocket’ spending. In percentage terms, they are greater for dental care than for any other major category of health spending. In 2008–09, while dental services accounted for 6.0% of total health expenditures, they imposed 21.7% of personal out-of-pocket costs (AIHW 2010). In the same year, individuals paid 61.5% of dental bills (Table 9).

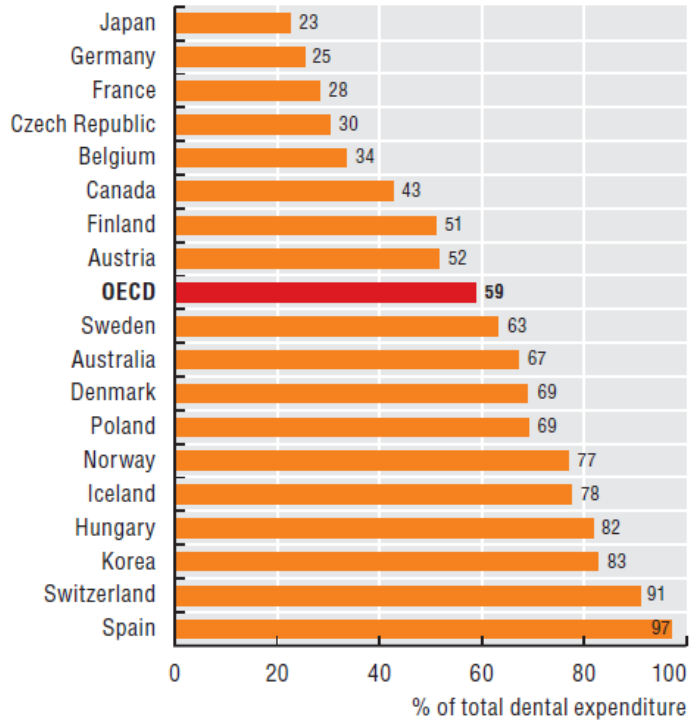
Table 9 Out-of-pocket spending as a percentage of health costs

Health category	1990–91	2008–09
Dental	57.0	61.5
Medical	11.6	12.1
Hospital	3.1	3.2
Pharmaceutical	53.3	48.5
Total health	16.1	16.7

Source: AIHW (2010)

The corresponding figures for hospital, medical and pharmaceutical out-of-pocket costs were 3.2%, 12.1% and 48.5%. Since 1990–91 dental out-of-pocket expenses have risen, not fallen. These co-payments are high by international standards (Figure 4).

Figure 4 Out-of-pocket dental expenditure, 2006



Source: OECD (2009, p. 153)

The chief reason for the high out-of-pocket payments is the low contribution from government. In 2008–09 government accounted for 22.9% of dental expenditure (up from 9.5% in 1990–91). The remaining 15.5% was paid by private health insurance. The government contribution to dental expenditure is significantly lower than for other major areas of health expenditure (Table 10).

The reason for the low government contribution is historical and not attributable to the burden of expenditure arising from the dental sector. Table 11 indicates that in 2009 it represented 6% of total health expenditure and 3.7% out-of-pocket spending. If the government share of the dental spending rose to its average share for the entire health sector (69.7%) then, all else being equal, government spending would rise by $3,145 million or 4%. Dental out-of-pocket payments would fall to $993 million.

Table 10 Government share of the health bill, 2008–09

Dental	22.8
Medical	78.1
Hospital	81.5
Pharmaceutical	51.4
Total health	70.0

Source: AIHW (2010)

Table 11 Out-of-pocket and total dental expenditure compared with total health spending

	% of total health spending		$ m
	1990–91	2009	2008
Out-of-pocket dental	2.8	3.7	4,129
Total dental	5.0	6.0	6,715
Total health	100	100	112,799

Source: AIHW (2010)

7 Universal dental insurance

A universal dental scheme like Medicare formed part of the discussion papers commissioned for the NHHRC (2009a, 2009b). The same author had earlier proposed a similar scheme (Spencer 2001, 2010). However, no policy action has been taken. A new Advisory Council on Dental Health, established by the Commission on 5 September 2011, provides a major opportunity to reduce the burden of dental ill health brought together in this report. The sections below provide a basis for thinking more about how a universal scheme could work in the Australian context.

7.1 Barriers to change

There are no significant economic barriers to reform of dental care funding in the long term. In the short term there is a supply-side constraint.

At present, individuals pay 61.5% of dental bills. Reducing this to zero would increase demand. The best estimate of the order of magnitude of the response to changing out-of-pocket payments is the random control trial conducted in the United States by the RAND Corporation (Newhouse 1993). This indicated that reducing an individual's out-of-pocket payments from 95% to zero would increase demand by 46%. With capped fees and a reduction in bills from 61.5% to zero for the entire population, this implies an increase in demand of approximately 30%. With an across-the-board co-payment of 15%, demand would increase by about 24%.[2]

An alternative approach to this calculation is to model demand and assume that groups in the population increase service use to the same level as for higher income earners. Using this approach, PricewaterhouseCoopers estimated that service use would rise between 11.5% and 17% (Armstrong & Campbell 2008).

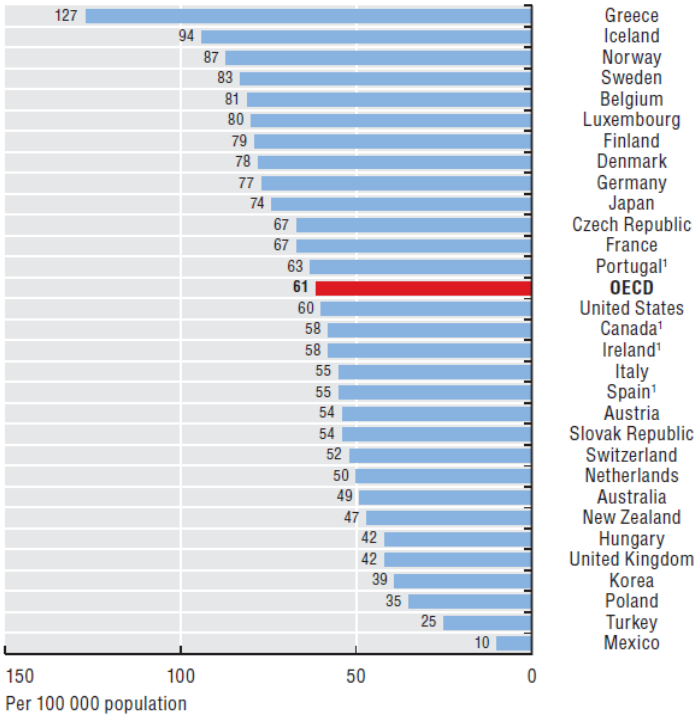
The orders of magnitude of both these estimates are very similar, particularly as the latter, lower figure, is based upon service use by individuals with significantly less dental insurance than assumed in the former estimate.

This figure of estimated increased demand would be greater if dental fees were uncontrolled or if out-of-pocket payments were eliminated for those with a low income. The important issue for economic feasibility is the magnitude of the resulting burden. A 24% increase in dental expenditure is equivalent to a 1.4% increase in total health expenditures, 0.13% of GDP or less than half of the typical increase in GDP each year. In terms of the economic and suffering burden, this is trivial.

The more serious short-term constraint is the limited supply of dentists and the need to introduce reform in a way that does not inflate dental fees. Australia is not well supplied with dental practitioners compared with other OECD countries (Figure 5) and despite increased training places, future shortages are expected (Spencer 2008).

[2] In 2008–09 total health expenditure was $115 billion, of which $6.7 billion comprised total dental costs (AIHW 2010). Based upon results from the RAND health insurance experiment (Newhouse 1993) we have assumed that a universal scheme with a 15% co-payment would increase demand by about 24% or $1.61 billion. The total cost of a universal dental scheme would therefore be in the order of $8.3 billion ($6.7 billion total current dental costs plus 24% increase in demand $1.61 billion). This is equivalent to about 1.4% of present health expenditures.

Figure 5 Dentists per 100,000 population, 2007



Source: OECD (2009, p. 83)

As noted by the AIHW (2011, p. 2), in relation to the overall oral health workforce:

> Overall, the number of oral health practitioners per 100,000 population is expected to increase by 52%, from 10.8 oral health practitioners per 100,000 population to 16.2 by 2025.
>
> Despite this substantial anticipated growth, the ratio of dentists to oral health practitioners is expected to remain relatively stable. This is due to an anticipated similar proportionate increase in the number of dentist graduates over the same period.

Also, as noted by Duckett and Willcox (2011, p. 175):

> … given that the poor have most of the burden (and that the community is ageing), the shortage will impact further.

This shortfall implies that an increase in services for those currently under serviced would divert services from others, which would be politically difficult. The longer term solution therefore requires an expansion in the supply of dentists (or dental assistants) coordinated with measures to direct the increased capacity to those needs.

7.2 Some issues

In general terms, dental policy reform may target those in greatest need or be part of a broader universal scheme. In principle, a targeted scheme may cost less, but only by leaving some group or groups with less access to care, so that the national saving is achieved by their below-average use of services.

Targeted schemes cost less to the government, which means that taxes will be lower and there will be less transfer from wealthy taxpayers to disadvantaged low-income earners. However, in exchange for the (lower) tax burden of the targeted scheme there would be no explicit benefit for the majority of Australians and this may increase, not decrease, the political problem of funding the program over the longer term. Additional problems with a targeted scheme include:

- identification of those to be targeted—severe dental problems are experienced by a wider group than health care cardholders, implying the need for a new and administratively costly means for establishing eligibility for care
- efficient and visibly equitable revenue raising—the proposal by the NHHRC to increase the Medicare levy is administratively costless; other new taxes may (or may not) impose significant administrative costs
- the risk of a degenerating two-tier system of care—identification of one group for separate funding and treatment is likely to lead to an inferior service, which becomes an obvious target for future budget 'savings'.

Possibly for these reasons the broad suggestions of the NHHRC imply a non-discriminatory, universal scheme.

A second general issue is whether a national dental scheme should be based upon public or private insurance or some mix of these. The NHHRC leaned towards the last, mixed option. This encounters several difficulties:

- If all Australians retained the right to public care irrespective of their private insurance (as with Medicare), private insurers would have a powerful incentive to channel members into the public sector. Measures to block or offset this would be imperfect, cumbersome and costly.
- In the short run, an expanded dental scheme will be constrained by the supply of dental services. This creates competition for these services and the least well off are generally the losers in such a competition. The focus of fragmented, private schemes will be upon the achievement of their own goals and the goals of their paying customers at the expense, if necessary, of the broader social objective. In the short run, private funds therefore would potentially generate inequity and additional costs.
- The claimed efficiencies of competition between private insurers have never been convincingly demonstrated for private health insurance generally and are even more problematic in the small dental sub-sector. Cost savings would be needed to offset increased administrative and marketing expenses. Significant economies could only be achieved by reducing access to services or by restricting the reimbursement of dentists. As an expansion, not contraction, of dental services is required, these measures are likely to be counterproductive.

The chief challenges to a new, expanded scheme—public or private—arise from the aggregate constraint posed by the fixed supply of dental health workers. The challenges include:

- prevention of an *unwanted* inflation of dental fees, which would erode insurance cover
- rationing services equitably when demand exceeds supply
- 'stretching' the supply of services to minimise the short-run gap between supply and demand while dental schools increase the long-run capacity of the dental service.

The first problem might be largely overcome in a universal public scheme as has occurred in the Canadian public medical services. Dentists would be allowed to opt in or opt out of the scheme, with their patients receiving full cover (opt in) or reduced cover (opt out). Alternatively, as in the United Kingdom, dentists could contract a predetermined number of days in the public service where they would receive standard reimbursement without the option of an inflationary extra payment determined by the market (Warburton 2010). On non-contract days dentists would be unconstrained. Both proposals—and any scheme that guarantees predictable out-of-pocket expenses—require the acceptance of a schedule of fees. As with GP bulk billing, market pressures to achieve this could be reinforced through public information concerning the availability of dentists who had opted into the scheme. The fee schedule would need to represent competitive fees. Attempts to reduce the government cost by reducing the schedule fee would probably be counterproductive.

Rationing of dental services might be inevitable in the short run but must be non-discriminatory. Suggestions for achieving this have been made by Spencer (2010) and PricewaterhouseCoopers (Armstrong & Campbell 2008). Defined, basic and least time-consuming services could be in the basic universal package. Following guidelines, contracted dentists might triage patients requiring advanced treatment, which might be provided initially at accredited clinics. With an increasing supply of services, the basic package might be expanded and the guidelines relaxed.

In the short run the supply of dental health workers is fixed, but the number of services they provide is flexible. In 2003 dentists worked an average of 38.4 hours per week leaving scope for an expansion in supply. An attractive overtime rate above the normal fee schedule could apply to encourage dentist to work extra hours. This could go some way to addressing the current shortage of dentists in the short term.

The increase above a threshold number of hours could, reasonably, attract an ‘overtime rate’. If this was, for example, 25% above the normal fee schedule and the full 24% extension of work hours needed to meet increased demand was achieved, then fees would increase by an average of 5%. Administratively, the overtime bonus could be based upon the number of ‘standard services’ delivered and not upon self-reported working hours. This might shorten contact time but this would also help bridge the gap between supply and demand. Such a bonus scheme could be temporary and phased out as the supply of new dental personnel rose.

7.3 Options for discussion

The objectives, constraints and options outlined above suggest a number of principles that might be incorporated in a universal dental scheme which would be suitable for Australia.

Eligibility

- *Universal membership*: Universality increases the acceptability of the increased taxation needed to cover costs. It reduces administrative complexity and the potential for cost shifting and complex measures designed to meet narrow interests (‘gaming’).
- *Service delivery*: Basic dental services might be delivered by all private dentists who opted into the scheme. ‘Advanced’ (complex and costly) services might be restricted to either accredited private or public clinics including the Medicare Locals, which are currently being established (NHHN 2011). The division into basic and advanced services would assist with cost control and rationing.

Supply and remuneration

- *Voluntarism*: All private dentists might be invited to contract into the public scheme. The nomination of regular hours or days would ensure that public patients were not simply a 'top up' when private demand fell.
- *Private practice*: In non-contract hours private practice might continue, as at present, without additional regulation or constraint, with unsubsidised private fees covered by private health insurance.
- *Fee schedule*: During the contract period the negotiated fee schedule might apply with the option of a maximum co-payment (for example, 15%), which individual dentists could add to the negotiated fee. Health cardholders might then attract 115% of the schedule fee.
- *Level of fees*: The schedule should reflect current market rates. Attempts to 'economise' at the expense of dentists would jeopardise the supply of dental services.
- *Overtime fees*: Beyond the contract hours (or service volume), dentists might receive higher fees (for example, a 25% loading) as compensation for the extension to their working week. This measure might be phased out over time.
- *Cadetships*: To increase supply in the longer term, dental students might be offered scholarships involving a commitment to working three years in the public service. This would offer graduates the opportunity to work with some of the most complex and interesting cases, just as interns and registrars work in hospitals on graduation from medicine. Importantly, to avoid the perception (and reality) of an inferior public service, the scheme should not be dependent upon this measure and the public fee schedule should be at a level sufficient to maintain the supply of experienced dentists.

Cost control and rationing

- *Fees control*: Prohibition of billing above the negotiated co-payment in the public sector could dampen the breakout of fees, which generally occurs when demand exceeds supply.
- *Rationing of advanced services*: Advanced services might be accessible only upon referral from participating public dentists, at schedule fees and for stated conditions. Delivery of these services by accredited providers would only be reimbursed from public funds if the services were certified as meeting these criteria. With the likelihood of excess demand, the patients might be triaged, as for hospital waiting lists, with the most urgent cases receiving priority.
- *Private services*: Patients facing excessive queues for lower priority care would have the option of a private service as presently occurs in the hospital sector.

8 Conclusion

No case has been made for excluding the mouth from the national health scheme. Evidence suggests that non-discriminatory treatment of oral health would have significant benefits and at a cost that Australians would be willing to accept.

Universal dental care for the entire population with an average 15% co-payment would add about 24% to present costs. This is equivalent to about 1.4% of present health expenditures, 0.13% of GDP or less than half of the current trend increase in the GDP over a 12-month period.

All Australians would obtain some benefit but particularly the 25% who presently receive substandard access and care for financial reasons. Most importantly, such changes to the provision of dental care would disproportionately assist the most disadvantaged groups of the community where suffering is presently concentrated.

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