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**Narrowing the inequality gap in oral
health and dental care in Australia**

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INTRODUCTION

Oral health is becoming increasingly polarised in Australia. Social gradients in oral health were first described in the early 1990s. Lower income Australians did not enjoy as good oral health as their better off fellow citizens. Recent descriptions of the oral health of disadvantaged Australians reveal a further deterioration of oral health. While past descriptions of the social gradient have emphasised clinical outcomes, these have been joined in recent years by self-reported outcomes, self-rating of oral health and social impacts. These new measures of oral health carry particular importance because they reflect what we understand oral health to be: the opportunity to eat, speak and socialise without discomfort or embarrassment, and without active disease in the mouth which affects overall well-being (UK Department of Health, 1994). The social gradients in these measures of oral health are also strong and clear. Poorer Australians have poorer oral health, leaving them with a range of consequences for their everyday lives.

The polarisation does not end with oral health outcomes. It continues through the process of seeking dental care. Such dental care should be able to moderate the underlying experience of disease, and effectively intervene to restore form and function of the teeth and surrounding structures. Access to dental care, reflecting the use of dental services and the nature of the care received, is not equally available to all Australians. Similar problems are not treated similarly. Higher income Australians enjoy ready access to dental care of the best quality. A large segment of middle social position Australians have acceptable access to dental services and are able to purchase adequate basic dental care. However, a sizeable minority of middle and lower income Australians are deprived of access to acceptable dental care, either because of the inadequacies of the torn and tattered safety net of public dental services (Jones, 1998) or their inability to purchase an adequate scope of private dental care.

This situation has existed for many years. What draws greater attention to it today is the evidence of the chasm between rich and poor in oral

health and access to dental care widening and the apparent acceptance of it and lack of will to bring about change. National programs to reduce the inequalities in oral health and dental care overall and that lead to improved oral health and better dental care have been notably absent. Worse still, the last five or so years have seen the implementation of policy that has widened the gap, at best unintentionally and at worst intentionally, between the dental 'haves' and the 'have nots'. Policy has favoured the rich and penalised the poor. A change in policy is required that will bridge the chasm and produce a fairer more equitable environment in which people strive for better oral health and fewer consequences of oral disease, aided by a supportive dental care system.

The purpose of this paper is to:

- describe recent changes in oral health that both establish the continued problem of oral disease in the Australian population and indicate, at least among lower and middle income Australians, that aspects of oral health are deteriorating further;
- describe the social gradient in self-reported and self-rated oral health;
- describe the social gradient in life impacts of oral disease;
- describe recent changes in access to dental care including the widening chasm between the affluent, health card holders, and health card holders who visit public dental services;
- describe expenditure on dental services, direct public subsidy of public dental services and indirect public subsidy for private dental care, and how these vary by household income;
- discuss the impact of poor oral health on general health and well-being and the support for a greater inter-relatedness of oral and general health; and
- discuss policy directions to be pursued so as to reduce social inequalities in oral health and access to dental care.

THE ORAL HEALTH OF AUSTRALIANS

Descriptions of the oral health of Australians at the end of the 20th century gave emphasis to the great improvement in decay experience among children and adolescents (Spencer et al, 1994). This improvement was so marked that Australian children enjoyed amongst the best levels of oral health of comparable countries in the OECD (Spencer, 2001a). However, no other indicator of oral health was so positive. While improvements in tooth retention as a result of reductions in the prevalence of edentulism (loss of all natural teeth) and the number of missing teeth (teeth that have been extracted because of oral disease) among adults with some natural teeth have been marked, Australian adults still languish among countries with the worst levels of tooth loss.

Descriptions of the oral health of the average Australian child or adult can also mislead in their generalisation to the whole population. For instance, the Australian Health Ministers Advisory Conference report Oral health of Australians; national planning for oral health improvement identified a number of instances of poorer oral health than might first be recognised:

- high levels of dental decay are still experienced by a minority of children and adolescents;
- the transition from childhood to adulthood is accompanied for some by an increase in the prevalence of decay and accumulation of numbers of teeth with decay experience;
- lower income, middle-aged adults have had only a small decrease in this accumulated decay experience; and
- the increase in tooth retention which is potentially more marked among the disadvantaged adults is associated with an increased burden of disease carried forward from their younger life, and the increased number of teeth at risk of further decay, gum disease and other oral disorders (Australian Health Ministers Conference, 2001).

The problem of oral disease has not disappeared. Some in the population still experience high levels of oral diseases and disorders.

Children's oral health

Australian children enjoyed three decades of improvement in oral health, from the mid 1960s to mid 1990s (Spencer et al, 1994). By 1996 the prevalence of decay experience in the deciduous teeth of Australian 6 year old children was 39 per cent and on average each child had only 1.4 deciduous (baby) teeth with decay experience. At the same time, the prevalence of decay experience in the permanent teeth of 12 year old children was 38.2 per cent and, on average, each child had only 0.90 permanent teeth with decay experience. A minority of children had most of the decay experienced (Armfield et al, 1999). For instance, among 12 year olds, about 12 per cent of children had 66 per cent of all teeth with decay experience. Higher levels of decay experience were found among those children in lower social position families, with less of their lifetime lived in a fluoridated area and with less frequent preventive dental behaviours (Slade et al, 1995). A social gradient existed (AIHW, 1992), but this may have been somewhat attenuated by dental care received from the school dental services (Allister et al, 1995).

Since the mid 1990s, decay experience in both the deciduous and permanent teeth of Australian children in all States and Territories has increased (Armfield et al, 2003). As an example, Table 1 shows that the percentage of 6 year old Australian children with no deciduous tooth decay experience decreased from 61.0 to 56.6 per cent and the mean number of deciduous teeth with decay experience, the dmft score, increased from 1.45 to 1.65 teeth across 1996 to 2000 (Armfield et al, 2003; 2004). There has been a deterioration of child oral health expressed by these and other measures since 1996 (Armfield and Spencer, 2004a).

Table 1. Caries experience of Australian children, 1990 to 2000

Year	6 year olds	
	dmft	% dmft = 0
1990	2.06	50.0
1991	2.00	52.1
1992	1.95	52.9
1993	1.90	53.2
1994	1.79	53.4
1995	1.73	55.3
1996	1.45	61.0
1997	1.50	60.2
1998	1.51	59.4
1999	1.51	59.1
2000	1.65	56.6

*Source: Child Dental Health Survey
(Armfield et al, 2003; 2004)*

The Child Dental Health Survey monitored the oral health of 80,000 plus children across all States and Territories using the school dental services each year.

What are the possible explanations for this deterioration in child oral health? Three types of explanation are possible:

- it is an artefact of the data collection;
- there has been an increase in exposure to decay risk factors; and
- there has been a decrease in exposure to decay protective factors.

The artefact explanation rests on changes in data collection. The consistency of the deterioration and its presence in all jurisdictions suggests artefact is an unlikely explanation.

The predominant risk factors for decay are related to dental plaque accumulation or dietary patterns. Both risk factors could play a potential role in changes in decay experience over time. National

nutritional surveys in Australia document the trend to increased soft drink consumption, a potential contributor to increased decay risk (McLennon and Podger, 1998). However, the period over which this change has been documented precedes the actual period of decay increase leaving no clear evidence to support this proposition.

A decrease in exposure to decay protective factors is equally plausible and supported by empirical evidence. There are a number of potential protective factors that may have changed:

- exposure to fluoride from water supplies;
- exposure to discretionary fluorides; and
- a decrease in oral health promotion activities within the school dental services (e.g., an increase in the cariogenicity of school tuckshop offerings and increased vending machine activity, or a decrease in individual and group dental education activities).

There is evidence that any one or more of these factors may have contributed to an increase in decay experience among children. While the percentage of the Australian population covered by water fluoridation has increased slightly in the late 1990s, there has been also a dramatic increase in bottled water consumption and a steady penetration of home water filters, some of which do remove fluoride, into Australian households. General concerns over water conservation and quality are also leading to a new emphasis on household capture and consumption of tank water. Armfield and Spencer (2004b) have documented higher deciduous decay experience among children using non-tap water in fluoridated areas. There is also circumstantial evidence that exposure to discretionary fluorides (ie fluoride in infant formula powder, drops or tablets; and the early commencement of tooth brushing with a standard fluoride containing toothpaste) has also diminished.

Support for a decrease in fluoride protective factors comes from preliminary research that has indicated a sharp reduction in dental fluorosis in children in Western Australia (Riordan, 2002). A decrease in the prevalence of dental fluorosis is entirely consistent with a

reduction in exposure to discretionary fluorides in early life. Whether this reduction could be accompanied by an increase in decay experience is plausible, but yet unanswered.

The more dramatic changes in decay experience from 1996 onwards clearly call for a renewed emphasis on child population oral health. Australia's history of child oral health has shown the remarkable gains that can be made when there is a concentrated collective effort of researchers, governments and dental care providers. The gains made must be protected by a renewed collective effort.

Child oral health is the base upon which adult oral health develops. While many adults readily identify their childhood as the time in which their decay experience developed, there seems less recognition that decay experience is chronic and accumulating across the life-course. As children make the transition into adolescence, then young adulthood, it would appear that there is a reasonably steady accumulation of people experiencing decay and numbers of teeth with decay experience (Spencer, 2001b).

Adults' oral health

The levels of decay experience in young adults are greatly reduced from their post World War 2 high. However, the number of teeth with decay experience is considerably higher than in their childhood and adolescence. Young adults in their mid 20s have just under 5 teeth with decay experience, and add a further tooth with each 3 to 4 years of life. By the time these young adults are in their late 30s they might expect to have just under 10 teeth with decay experience. This number of teeth with decay experience is an improvement on the historical high of 18 teeth with decay experience in 35 to 44 year olds in 1973 in Sydney and surrounds (Arnljot et al, 1985) and in 1987–88 across Australia in the National Oral Health Survey of Australia (Barnard, 1993).

However, it approximates to just less than 1 in every 2 teeth having decay experience (32 natural teeth minus the 4 wisdom teeth and possible further teeth removed for orthodontic treatment). This is hardly a disappearing disease in Australia. Disappointingly, the level of caries experience among 35 to 44 year olds places Australia toward the bottom of the ranking of oral health among comparable OECD countries (Spencer, 2001a).

Recent evidence indicates that, far from moving forward, the oral health of at least a sizeable minority of adults may be deteriorating. The Adult Dental Programs Survey monitors the oral health of eligible adults who use the public dental services in Australia (Brennan et al, 1997). Table 2 presents a summary of the decay experience changes between 1995–96 and 2001–02 by age group of adults. The mean number of teeth with decay experience in health card holding adults using public dental services increased, decayed but untreated teeth increased, missing teeth (teeth extracted because of disease) increased and filled teeth decreased. These trends were evident in most age groups, but appear to be more marked in younger adults.

Table 2. Caries experience by year and age of patients attending public dental services in Australia

Age	Decayed		Missing		Filled		dmft	
	1995 –96	2001 –02	1995 –96	2001 –02	1995 –96	2001 –02	1995 –96	2001 –02
18–24	3.07	4.61	0.68	0.67	3.68	2.47	7.44	7.75
25–44	2.65	4.14	2.80	3.68	6.73	5.46	12.18	13.27
45–64	1.48	1.89	7.04	7.22	7.51	7.31	16.03	16.41
65+	1.07	1.36	9.84	9.69	6.54	9.79	17.45	17.84
All	1.97	2.65	5.50	6.35	6.62	6.20	14.09	15.02

*Source: Adult Dental Programs Survey (Brennan and Spencer, 2004)
The Adult Dental Programs Survey monitored the oral health of 2,696 and 1,958 adults visiting public dental services across Australia in 1995–96 and 2001–02 respectively.*

This is hardly comforting to the one-third of the adult population who are eligible for public dental care. Yet, these adults are at least receiving some dental care, otherwise data on their deteriorating oral health would not have been captured. Other, doubly disadvantaged groups exist within the adult population in poor oral health, but with less likelihood of receiving dental care: Indigenous people; those with special needs; older adults with functional limitations; and so on. Such groups not only share a financial disadvantage, but also face other risks for oral diseases and barriers to dental care.

Australian Indigenous people once enjoyed an oral health advantage over their contemporaries in the Australian community. Diets that were low in refined carbohydrate and the use of traditional tooth-cleaning approaches saw adult Indigenous people with little decay experience and very low levels of tooth loss. The toll of dispossession, deprivation and discrimination has seen the diets of Indigenous people deteriorate and systemic diseases such as diabetes render them susceptible to a high prevalence of advanced gum disease, the consequence of which for oral health is high levels of edentulism and tooth loss (Harford, Spencer and Roberts-Thomson, 2003).

Special needs dentistry emerged as a theme in the early 1990s. While it is in part a response to the new groups of patients with blood-borne viral infections, some of which have early and severe oral manifestations, there have long been groups of people with special dental needs. These include people with physical and intellectual disabilities. The de-institutionalisation of many people has increased the degree of difficulty of providing appropriate dental care, preventive and treatment services. Dental services do not seem to have been part of the normalisation of support services for those living with ageing parents or in community housing. Carer education and support for carers in assessment and provision of basic oral hygiene care is rudimentary. When those living in hostels, the incarcerated, the homebound and the socially disadvantaged are added to those with special dental needs, the size of this group of doubly disadvantaged people, with greater needs but reduced access to dental care, grows.

As a result of overwhelming demand for public dental services from financially disadvantaged eligible adults, far less emphasis has been placed on those with special dental needs than might otherwise be expected.

Institutionalised neglect has also been a hallmark of oral health among older adults, especially those with functional limitations. Australia's appalling history of a pandemic of edentulism (extraction of all natural teeth) among women in the decade immediately after World War 2 and men a decade later (Sanders et al, 2004) led to among the highest rates of tooth loss among comparable OECD countries. This failure of oral health, however, provided the edentulous with some protection from future oral disease. Older and dependant adults (ie those in residential care or community dwelling only with the assistance of family or local support) could not develop decay or gum disease because they had none of these body parts left at risk. A change in community expectations, provider preferences and effective interventions (Davis, 1981), however, put an end to the pandemic by the 1960s. Adults entering older age now do so with at least some natural teeth and gum tissues, with a trail of past disease and destruction. Old problems reoccur and new problems develop, leaving older adults with the highest incidence of decay and advanced gum disease of any age group (Chalmers et al, 2004). The burden of oral disease and treatment need shows signs of a compression of illness into the last years of life, at the very stage of financial impoverishment, physical immobility, social isolation and functional dependence. The outcome is some of the most derelict oral health presentations that can be encountered.

The limited 'improvements' in oral health are not signposts of a disappearing problem of oral disease. Decay experience in children and adolescents has bottomed out and has shown six years of increases. Less substantial gains in oral health are evident in young and middle-aged adults. Instead there seems to be a steady accumulation of decay and gum disease across the life-course. A number of population groups

have excessive levels of oral disease presenting a smorgasbord of public health problems beyond those of the financially disadvantaged.

These trends in oral health are important in dispelling the myth that oral health problems are largely solved and that further investments in oral health are not warranted. This myth seems to be alive and well among decision-makers. They see Australian's oral health in terms of their own middle or upper income, advantaged position. It is a myopic view and one that denies the reality of the polarisation of oral health which has left many at great disadvantage.

Polarisation of oral health

One of the criticisms of both of the data sets for child oral health and adult oral health referred to earlier is that they are not representative of the entire population. The data on the oral health of children are drawn from examinations of school children enrolled in the school dental services around Australia. Approximately half of the primary school age population is enrolled (AIHW DSRU, 2000). The data on the oral health of adults are drawn from examinations of adults visiting the public dental services for care. Only a third of the adult population is eligible for such care. Further, a minority (approximately 30 per cent) of those eligible actually obtain their dental care from the hard-pressed public dental services. Therefore, it is reasonable to question the representativeness of the data.

This is especially so if it seems at odds with one's own experiences. However, this provides no succour to those who wish to deny the problem. Instead, it supports the polarisation of the burden of disease, with middle and upper income Australians experiencing better oral health than lower income and disadvantaged Australians.

What little information is available indicates that other population groups, such as army recruits, were demonstrating improved oral health over the same period as the deterioration among school dental service children, and adults using the public dental services (Hopcroft and

Morgan, 2003a; 2003b). Therefore, it seems at least possible that while the population as a whole, and certainly some sub-groups, may have experienced modest continued improvements in oral health, for others oral health has deteriorated.

For lower income population groups the oral health of their children and their own oral health is getting worse. Unrepresentative these data may be, but they indicate an inequality of oral health using standard clinical indicators. It is highly desirable to strengthen this evidence with better population survey data, but the availability of such data is some two years off. Fortunately, the limited data on clinical indicators are joined by a number of other indicators of oral health, whose representativeness is open to much less question and which describe even more strongly inequalities in oral health.

SOCIAL INEQUALITY IN ORAL HEALTH

The social epidemiology of oral health first had a focus on children. Across the late 1970s and 1980s, as decay experience in the child population decreased, it was frequently recognised that pockets of children were left behind. A pattern of social characteristics associated with more decay experience emerged: low socio-economic status (based on parental education, occupation or income), recent migration to Australia and location in rural or working class areas (Wright and Spencer, 1980; Spencer et al, 1989). Individually these characteristics showed only modest strength of association, but collectively they were linked to substantial social differences.

However, two developments diminished the poignancy of social inequalities in oral health among children. First, water fluoridation which began in many large residential areas in the beginning of the 1970s both led to an improvement in oral health (40 per cent less decay experience in fluoridated versus non-fluoridated areas from 1977 to 1986 (NHMRC, 1991)) and to a narrowing of the social gradient in decay experience. Water fluoridation as a population strategy for decay prevention benefited those most at risk (Slade et al, 1996). Second, the

school dental service, with its school-based, dental therapist staffed, preventively oriented dental care progressively increased its coverage of the child population in most States and Territories and in some extended that coverage to high school students. Analysis of an historical cohort of adolescents in the South Australian school dental service showed that children entered the service at age 6 years with a greater social differential in decay experience in the deciduous teeth than they showed seven years later at age 13 years in their permanent teeth (Allister et al, 1995). An accompanying finding was that those who had higher decay experience during their first course of care with the school dental service received more preventive dental services (Spencer et al, 1995). This targeting of those with higher decay experience with more intense dental care, including preventive services, has become institutionalised in programs of risk identification and management in the school dental services (Polster and Spencer, 2001). The outcome appears to be an attenuation of the social gradient in decay experience. While social inequality in children's decay experience still exists (AIHW, 1992; Gaughwin et al, 1999), it is relatively limited.

Recently, more emphasis has been given to the social inequalities in oral health of adults. This has helped describe an age-related pattern to social inequality that is similar to general health. Inequalities are limited among children, but steadily accumulate across young adult years to reach their maximum among middle-aged adults. The socially disadvantaged experience ill-health earlier and more severely than their better-off counterparts. Moving progressively into older age, more and more older adults eventually experience similar ill-health, again narrowing the social inequality, across the last decade or two of life.

The evidence on social inequality in oral health across the adult years is somewhat limited. Some evidence exists from ad hoc epidemiological studies of narrow age groups or limited regions. Most of the more representative evidence available is focused on self-reported oral health from social surveys. Self-reported oral health measures vary from quasi-clinical measures, for instance tooth loss or number of missing teeth, to

perceived oral health, for instance global ratings of oral health on an ordinal scale of excellent to very poor.

Tooth loss shows a very marked social gradient. Sanders and Spencer (2004) have reported on tooth loss among dentate adults who responded to a mailed questionnaire after being interviewed in the National Dental Telephone Interview Survey 1999. Tooth loss increased nearly five-fold from the highest income group (more than \$50000) to the lowest income group (less than \$20000). Area disadvantage was also associated with tooth loss. Tooth loss increased by some 43 per cent from areas with least disadvantage to areas with the greatest disadvantage.

Self-rated oral health also followed a social gradient, although less marked than observed for income. The percentage of adults rating their oral health as average, poor or very poor increased from 19 per cent in households with a pre-tax income of more than \$50000 to 31 per cent in households with a pre-tax income of less than \$20000. Self-rated oral health was also associated with area disadvantage. Only 20.4 per cent of adults in areas of low disadvantage reported average, poor or very poor oral health compared with 27.1 per cent in areas of high disadvantage.

Table 3 presents the self-reported tooth loss and self-rating of oral health by extended household income levels among dentate Australian adults in 2002.

Table 3. Social inequality in tooth loss and self-rated oral health among dentate adults, Australia 2002

Household income	Tooth loss mean	Self-rated oral health % Average, poor, very poor
< \$12,000	9.07	34.2
\$12–20,000	8.67	32.8
\$20–30,000	6.19	22.9
\$30–40,000	4.86	24.1
\$40–50,000	3.80	20.1
\$50–60,000	3.58	20.0
\$60–70,000	4.20	15.4
\$70–80,000	3.63	18.3
\$80,000 +	3.49	14.6
All	5.08	21.8

Source: *National Dental Telephone Interview Survey 2002*

(Carter and Stewart, 2003)

The National Dental Telephone Interview Survey 2002 involved a stratified random sample of 7,312 children and adults. Some 3,132 dentate adults completed a subsequent mailed questionnaire called Social Impacts, Risks and Costs Survey 2002. All estimates drawn from these data sets were weighted to represent the Australian adult population.

Both tooth loss and self-rated oral health showed a strong social gradient among dentate adults. Tooth loss increased from 3.49 teeth in the highest income level to 9.07 teeth in the lowest income level, a two-fold difference. The percentage of dentate adults who rated their oral health as average, poor or very poor rose from 14.6 per cent in the highest income level to 34.2 per cent in the lowest income level, just less than a two-fold difference.

Self-ratings have no absolute anchor points. Rather, they reflect a comparative process in which the absolute meaning of the scale will vary between individuals, moderated by family, neighbourhood and work environments. The use of self-reported tooth loss as a quasi-clinical measure has more objectivity. Tooth loss reflects both

underlying experience of disease and its management. Therefore, it expresses the social gradient in oral health and access to tooth saving treatment. However, examining tooth loss among the dentate population excludes the most severe form of tooth loss; that is, being rendered edentulous by the removal of all natural teeth.

Edentulism shows a very marked social gradient. Table 4 presents the percentage of adults in each household income level who are edentulous. There was a 32-fold gradient in the percentage of adults who were edentulous between those adults in the highest income category and those in the lowest income category. These edentulous persons have lost a maximum of 32 teeth. When these are combined with the tooth loss of dentate adults, a new weighted mean tooth loss of all adults by household income can be derived. There is a four-fold difference in total tooth loss between the lowest and highest household income categories.

Table 4. Social inequality in tooth loss, adjusted for total tooth loss by the edentulous, Australia 2002

Household income	Edentulism %	Tooth loss among the dentate mean	Total tooth loss mean
< \$12,000	25.6	9.07	14.9
\$12–20,000	22.5	8.67	13.9
\$20–30,000	9.4	6.19	8.6
\$30–40,000	3.8	4.86	5.9
\$40–50,000	2.4	3.80	4.5
\$50–60,000	1.1	3.58	3.9
\$60–70,000	3.1	4.20	5.1
\$70–80,000	0.6	3.63	3.8
\$80,000 +	0.8	3.49	3.7
All	7.8	5.08	

Source: *National Dental Telephone Interview Survey 2002*
 (Carter and Stewart, 2003)
 See footnote to Table 3.

THE LIFE IMPACT OF ORAL DISEASE

Quasi-clinical indicators and self-ratings of oral health have been joined by a third type of measure of oral health: oral health related quality of life measures (OHRQol). The wide acceptance of more sociological definitions of oral health has heralded the documentation of just how oral diseases and disorders affect people's capacity for performance of everyday roles and tasks. Hence, Dolan (1993) defined oral health as 'A comfortable and functional dentition which allows individuals to continue in their desired social role.' The types of tasks were flagged in the UK Department of Health (1994) definition of oral health as 'eating, speaking and socialising without discomfort or embarrassment'. There has been a rapid proliferation of measures of OHRQol, but one measure, the Oral Health Impact Profile (OHIP), has both an Australian origin and has been the most widely applied (Slade and Spencer, 1994). A short form OHIP has been used in conjunction with several Australian national surveys (Slade, 1997). For instance, in 2002 the frequency of experiencing 14 social impacts was reported by Australian adults (see Table 5).

Table 5. Prevalence of adults occasionally, fairly often or very often experiencing social impact in the last year because of problems with their teeth, mouth or dentures, Australia 2002

Social impacts	Percentage reporting the impact in the last year
Painful aching	25.5
Life less satisfying	18.2
Difficulty doing usual jobs	5.9
Sense of taste	8.9
Avoided foods	26.6
Uncomfortable to eat	31.2
Self-conscious or embarrassed	23.9
Pronunciation	6.6
Felt tense	12.9
Diet unsatisfactory	5.4
Interrupt meals	9.1
Difficult to relax	11.6
Irritable	9.0
Unable to function	2.0

Source: Social Impacts, Risks and Costs Survey 2002,

See footnote to Table 3.

High percentages of Australian adults experienced pain and impacts associated with eating, embarrassment with appearance, and psychological discomfort, and reported their lives were less satisfying. Nearly one-third of adults reported that it was uncomfortable to eat, and approximately a quarter reported painful aching, avoiding foods, and being self-conscious or embarrassed. Just under one-fifth reported that life was less satisfying because of problems with their teeth, mouth or dentures. Surprisingly, high percentages of adults reported being irritable or having difficulty with pronunciation of words because of their teeth, mouth or dentures. On average Australian adults experienced two of these impacts in the last year.

These same more frequent impacts present clear social gradients. Problems with teeth, mouth or dentures impact on lower income adults more frequently than high income adults.

Table 6 presents the social gradient of a range of these impacts. Every impact, from pain to difficulty with eating, speaking or mood showed a substantial social gradient. These gradients were approximately two-fold for the more frequently experienced impacts, but reached four- to eight-fold among the less frequently experienced difficulties with speaking and mood.

Table 6. Distribution of social impacts among adults because of problems with their teeth, mouth or dentures by household income, Australia 2002

Household income	Painful aching	Avoided foods	Impacts			
			Uncomfortable to eat	Self-conscious to eat	Irritable	Pronunciation
< \$12,000	39.0	39.7	46.8	30.8	13.0	16.7
\$12–20,000	34.2	42.9	44.2	31.1	15.8	13.4
\$20–30,000	28.8	30.5	31.6	22.0	11.9	4.2
\$30–40,000	24.8	31.0	34.1	25.8	13.2	7.8
\$40–50,000	30.3	30.3	35.3	25.7	13.1	3.9
\$50–60,000	20.5	17.9	23.2	22.3	7.1	4.5
\$60–70,000	19.4	26.9	30.1	27.0	6.4	9.7
\$70–80,000	20.5	19.5	27.7	14.5	6.0	1.2
\$80,000+	19.2	14.9	21.2	19.2	1.6	3.9
All	25.5	26.6	31.2	23.9	9.0	6.6

Source: *Social Impacts, Risks and Costs Survey 2002*
National Dental Telephone Interview Survey 2002
(Carter and Stewart, 2003)
See footnote to Table 3.

Despite the readiness with which people identify with the impacts, the high prevalence of these impacts tends to be devalued. There is a tendency to view them as low severity conditions of short durations. The low severity and possibly short duration are assumed to combine together to result in low disability values for oral disease or disorders.

Recently, Brennan and Spencer (submitted) have re-examined the disability values assigned to oral diseases in Australia's Burden of Disease and Injury Study (Mathers, Voc and Stevenson, 1999). This study had used disability values derived from Stouthard et al (1997) in the Netherlands using a 'person trade-off' approach. Such an approach basically asks an individual to trade-off, for a group of people, healthy person years and person years lived with a disability (Saloman and Murray, 2002). Mathematical approaches are available to relate impacts measured with the European Quality of Life (EuroQol) measure with its six domains to a disability weight. Brennan and Spencer obtained reports of the impact of oral diseases and disorders using the EuroQol and converted these to disability weights using a UK based mathematical approach. The disability weights for three key oral diseases or disorders (dental caries, advanced periodontal disease and edentulism) were all higher (but still in absolute terms quite low) than used in the Australian Burden of Disease and Injury Study. Brennan and Spencer argue that their weights seem more consistent with those for similar conditions. Use of the new disability weights against the incidence of just the three oral diseases or disorders moved oral disease into seventh in total disability experienced. At that level oral disease sat among the health conditions regarded as Australia's national health priority areas.

This position was reached with only a limited number of oral diseases being included and important oral diseases and conditions actually being categorised in other areas, such as oral cancer and oral injuries. Disability associated with oral diseases appears to be greater than perceived by many decision-makers. It is suggested that this stems from a bias resulting from oral disease not being associated with death and the lack of access to dental services that could restore full function and eliminate impacts on people's lives.

ACCESS TO DENTAL CARE

Inequality in access to dental care among Australian adults is well-entrenched. Despite descriptions during the 1990s of such inequalities as being savage (Spencer, 2001a) they appear only to be worsening.

Australia has had across the last decade a series of social surveys of access to dental care. Initially they were conducted as part of the evaluation of the Commonwealth Dental Health Program (Allister et al, 1995; Brennan et al, 1997), but since its demise they have been an integral component of monitoring and surveillance of self-reported oral health and use of dental services with a rolling series of special themes like social impact, social determinants, dental behaviours, private dental insurance and costs of dental care.

Establishing an acceptable benchmark is the crucial step in interpreting information on access to dental care. It is untenable that all adults will access dental care in a manner that might fit some professionally preferred pattern. A combination of inefficiencies of an imperfect market, inescapable rationing of dental care and unexplainable individual behaviours frequently reduces simple statements like 'every person should visit every year' to utopian myths. What is more defensible is the desire to reduce inequalities in access between rich and poor, the sick and the worried well. One approach used by Evans and Williamson (1978) and adopted by AIHW DSRU (2001) is to set a benchmark at the level of access enjoyed by the affluent, those who are as 'comfortable and relaxed' about access to dental care as any in the population.

In the comparisons that follow, the affluent have been defined as those adults living in households with incomes above \$40000, covered by private dental insurance and residing in a high socio-economic area. These adults comprised some 10 per cent of the adult population in 1994–96, but have increased modestly to 13.1 per cent in 2002. Inflation has carried more households above the income threshold and the more recent increase in private insurance coverage has also led to

higher percentages of adults being covered. This casting of a slightly wider net for adults who met the definition of affluent should dilute any comparison with the more vulnerable in the population, reducing disparities. The more vulnerable can also be defined in many ways, including definitions of the deprived. For practical purposes, especially for the advocacy of public policy, the vulnerable have been defined as either health card holders or health card holders whose last dental visit was to a public clinic.

Access is not a simple construct. It includes notions of need, availability, obtainability and comprehensiveness of dental services (Lewis, Fein and Mechanic, 1976; Beck et al, 1984). Persons who are experiencing dental problems or wish to be reassured and supported in maintaining their oral health require dental providers with whom they can conveniently make an appointment and from whom they will receive dental services that address immediate problems and best protect their long-term oral health and quality of life.

A series of indicators are available to illustrate a number of aspects of access to dental care. Table 7 presents those indicators of adult access to dental care for the affluent and card holders in 1994–96 and 2002. There has been little change in access to dental care among the affluent. Despite the slightly wider net cast for inclusion as affluent, those additional adults have had similar patterns of access. Although the environment in which dental services are accessed has changed, the pattern of access has remained reasonably stable.

Perceived need for treatment is higher for the affluent and health card holders because of the removal of a filter question in 2002. The experience of toothache decreased among the affluent, but increased among health card holders. Slightly more affluent and health card holding adults had not visited in the last five years. More affluent adults, but slightly fewer health card holders, visited for a problem. Avoidance or delay had increased marginally for both groups. Only health card holders faced a real wait of six months or more for dental care. Cost prevented recommended treatment for slightly fewer of the

affluent and card holders. However, this reduction was due to a wording change from ‘treatment recommended or wanted’ to ‘recommended’ only. Slightly more of the affluent and card holders received extractions and fewer received fillings among both the affluent adults and health card holders.

By far the dominant finding of this comparison of the access enjoyed by affluent adults and health card holders is the maintenance of the gap in access among health card holders. A substantial gap continues to exist between the affluent and card holders in accessing dental services. Card holders’ access had worsened in terms of experience of toothache in the last twelve months, last visit more than five years ago, avoiding or delaying because of cost, waiting more than six months for an appointment, receiving extractions in the last twelve months; and, conversely, fewer received fillings in the last twelve months.

Table 7. Adult access to dental care in Australia among the affluent and health card holders in 1994–96 and 2002

Performance indicator	1994–96		2002	
	Affluent	Health card holders ¹	Affluent	Health card holders ¹
Perceived need for treatment	18.4	28.0	32.4 ²	51.6 ²
Experienced a toothache in last 12 months	11.8	14.8	8.2	19.1
Visited dentist 5+ years ago	3.1	13.4	4.9	14.9
Last visited for a problem	33.6	64.6	40.9	61.5
Avoided or delayed because of cost	14.0	34.1	16.5	36.1
Waited more than 6 months for appointment	0.6	6.6	0.4	10.6
Cost prevented recommended treatment	13.0	27.6	8.4 ³	19.1 ³
Received extractions in last 12 months	7.5	21.2	11.7	24.4
Received fillings in last 12 months	50.1	52.7	39.6	47.7

- 1 Dentate adult (18 years old) card holders
- 2 Filter question on perceived need for a visit removed
- 3 Wording of question changed to ‘recommended’ from ‘recommended or wanted’

Source: Commonwealth Dental Health Program Evaluation 1994–1996 National Dental Telephone Interview Survey 2002

The Commonwealth Dental Health Program Evaluation 1994–1996 involved dental telephone interviews of three successive stratified random samples of a total of 21,380 children and adults.

For the National Dental Telephone Interview Survey 2002 see the footnote to Table 3.

The comparison of the affluent with health card holders hides the inequality in access faced by those who use public dental care. Health card holders are a heterogeneous group, ranging from a large minority who are aged pensioners who are income poor, but at least some of

whom are potentially asset rich with a long pattern of private dental care use and possibly private dental insurance, through to unemployed young adults, single parents, persons with disabilities for whom purchasing any private dental care may be out of the question. While card holders may have not dissimilar vulnerability in terms of disposable income, they may have great variation in issues across the life-course. Past history of access to dental care and relationship with a dental provider, residential location and the associated contextual environment may be quite different. One way to decrease the heterogeneity among card holders in these comparisons is to limit the scope to card holders who last visited a public dental service. This is a useful limitation for those among health card holders who seek to use public dental services are the primary focus of oral health policy.

Table 8 presents a comparison of access to dental care between health card holders and health card holders who last visited a public dental clinic. Health card holders who last visited a public dental clinic had considerably higher percentages reporting toothache, last visit for a problem, waiting more than six months for an appointment and receiving extractions. Other differences were generally small, but supported the double jeopardy in accessing dental care among those who have both low income and a reliance on public dental services.

Table 8. Adult access to dental care in 2002 among health card holders compared to health card holders who last visited a public dental clinic, Australia 2002

	Health card holders	Health card holders, last visit public
Perceived need for treatment	51.6	53.4
Experienced a toothache in last 12 months	19.1	27.0
Visited dentist 5+ years ago	14.9	11.3
Last visited for a problem	61.5	73.5
Avoided or delayed because of cost	36.1	41.2
Waited more than 6 months for appointment	10.6	31.3
Cost prevented recommended treatment	19.1	21.8
Received extractions in last 12 months	24.4	42.7
Received fillings in last 12 months	47.7	53.8

*Source: National Dental Telephone Interview Survey 2002
See footnote to Table 3.*

The most striking comparison is that of the chasm between the affluent and health card holders who last visited a public dental clinic across 1994–96 to 2002. This is presented in Table 9.

Table 9. The widening chasm in access to dental care between the affluent and health card holders who last visited public dental services, Australia 1994–96 and 2002

Performance indicator	1994–96		2002	
	Affluent	Health card holders, last visit public	Affluent	Health card holders, last visit public
Perceived need for treatment	18.4	35.3	32.4	53.4
Experienced a toothache in last 12 months	11.8	20.9	8.2	27.0
Visited dentist 5+ years ago	3.1	6.9	4.9	11.3
Last visited for a problem	33.6	75.1	40.9	73.5
Avoided or delayed because of cost	14.0	34.1	16.5	41.2
Waited more than 6 months for appointment	0.6	17.9	0.4	31.3
Cost prevented recommended treatment	13.0	28.2	8.4	21.8
Received extractions in last 12 months	7.5	29.5	11.7	42.7
Received fillings in last 12 months	50.1	59.3	39.6	53.8

*Source: Commonwealth Dental Health Program Evaluation 1994–1996
National Dental Telephone Interview Survey 2002
See footnote to Table 7.*

The chasm has deepened further in the contrasting access to dental care between the affluent and card holders whose last visit was to a public dental clinic. Card holders whose last visit was to a public dental clinic were:

- increasingly more likely to perceive a need for dental treatment. The gap widened from 16.9 per cent to 21.0 per cent;
- increasingly more likely to have experienced a toothache in the last twelve months. The gap widened from 9.1 per cent to 18.8 per cent;
- increasingly more likely to have visited a dentist more than five years ago. The gap widened from 3.8 per cent to 6.4 per cent;
- almost as likely to have last visited for a problem. The gap altered marginally from a huge 41.5 per cent to 32.6 per cent;
- increasingly more likely to have avoided or delayed visiting because of cost. The gap widened from 20.1 per cent to 24.7 per cent;
- increasingly more likely to have waited more than six months for an appointment. A negligible 0.4 per cent of the affluent waited more than six months for an appointment. On this basis the gap widened from 17.3 per cent to 30.9 per cent;
- more likely to have reported that cost prevented recommended treatment. The gap narrowed marginally from 15.2 per cent to 13.4 per cent in 2002. This question focused on only recommended treatment in 2002;
- increasingly more likely to receive extractions in the last twelve months. The gap widened from 22 per cent to 31.0 per cent. There was a 3.6 times higher percentage of card holders whose last visit was to a public dental clinic reporting extractions than was reported among the affluent; and
- more likely to have received fillings in the last twelve months. While the percentage of health card holders receiving fillings decreased, the gap widened from 9.2 per cent to 14.2 per cent.

The capture of a slightly larger segment of affluent adult Australians in the definition used should have somewhat attenuated these comparisons. Yet the chasm has widened on nearly all performance indicators. It is clearly a chasm, one that cannot be jumped without a substantial commitment to policy change. This commitment seems lacking at all levels of government, especially at the level of the Commonwealth government.

RESISTANCE TO CHANGE OF ACCESS TO DENTAL CARE

Some directions to pursue and evidence of just how great a challenge this will be can be drawn from the evidence on children's access to dental care in Australia. Some three decades ago Australian children had high levels of oral disease, experienced obvious and disturbing impact on schooling and life, and were restricted in their access to dental care by dental labour force shortages. The response was to establish a school-based, preventively orientated, allied dental professional staffed dental program—the school dental services. Organised on an incremental dental care basis, these services assumed a proactive role in initiating and maintaining care across the primary school years.

Table 10 presents the comparison for the children of the affluent and health card holders of performance indicators for access to dental care among Australian children in 2002. Two aspects of the comparison are important. First, the absolute level of the indicators for inadequate access of the children of health card holders is very much lower than that for adult health card holders using public dental services. This holds for all access indicators. Second, a gap is still seen between the access enjoyed between the children of the affluent and children of health card holders. While the gap is small for some indicators, and maybe caution should be exercised in its interpretation in others, the inequality in access to dental care has survived the development of Australian's primary public dental service program. Some might be tempted to interpret this as a failure of the school dental services. Instead, it is suggested that these data show the improvement made, but also indicate that it is a policy whose job is only half done.

Table 10. Access to dental care among Australian children in 2002

Performance indicator	Affluent	Health card holders
Perceived need for treatment	12.2	33.6
Experienced a toothache in last 12 months	3.9	8.4
Visited dentist 2+ years ago	1.7	7.6
Last visit was for a problem	18.5	30.2
Avoided or delayed because of cost	5.2	11.8
Waited more than 6+ months for appointment	-	-
Cost prevented recommended treatment	4.5	3.8
Received extractions in last 12 months	18.8	33.6
Received fillings in last 12 months	4.3	8.9

Source: National Dental Telephone Interview Survey 2002 (Carter and Stewart, 2003)

The National Dental Telephone Survey 2002 involved a stratified ransom sample of 7,312 children and adults. All estimates drawn from these data were weighted to represent the Australian population.

A deliberate policy of intervention involving an innovative delivery program using a special purpose dental labour force has resulted in vulnerable children having far better access to public dental care than enjoyed by vulnerable adults. However, only 50 per cent of Australian children last visited a school dental clinic (AIHW DSRU, 2002). The school dental services in the two largest states, New South Wales and Victoria, have had a history of institutionalised resource scarcity that has hampered coverage of the child population. This chronic problem,

coupled with an increased competition for direct public subsidy for public dental care, has left the school dental services without the capacity to take the additional steps to eliminate the inequalities in access to dental care among children. The school dental services provide both supporting evidence of policy directions to be pursued and a cautionary note about expectations for achievements unless sufficient direct public subsidy and innovative programs are established and maintained.

FINANCING OF DENTAL CARE

Expenditure on dental services

Expenditure on dental care has undergone rapid change. Table 11 presents the expenditure on dental care since 1991–92. In the years 1991–92 to 2001–02 the expenditure on dental services in Australia has more than doubled from \$1652 to \$3689 million. In large part this increase has reflected the more than two-fold increase in out-of-pocket expenditure by individuals, from \$957 to \$2293 million. A substantial portion of this increase was driven by the rapid rise in the dental fees component of the CPI (AIHW, 2003). Health insurance fund expenditure across the six years between 1991–92 and 1996–97 increased only marginally and health insurance fund net expenditure from 1997–98 through to 1999–2000 decreased only to be followed by an increase after the introduction of Lifetime Health Cover. Health insurance, *per se*, has not been a substantial contributor to increased expenditure.

In contrast, there has been also a substantial rise in government spending on dental services, from \$164 to \$702 million. However, much of this increase has come from the Commonwealth government contribution to the Private Health Insurance Incentive Scheme in 1997–98, then the 30 per cent private health insurance rebate in 1998–99 and its linked Lifetime Health Cover in 1999–2000. Direct

expenditure from the Commonwealth has less than doubled, while State (and local) expenditure has increased nearly three-fold.

Table 11. Expenditure on dental services in Australia over the period 1991–92 to 2001–02

	1991-9 2 (\$m)	1992 -93 (\$m)	1993 -94 (\$m)	1994 -95 (\$m)	1995 -96 (\$m)	1996 -97 (\$m)	1997 -98 (\$m)	1998- 99 (\$m)	1999 -200 0 (\$m)	2000 -01 (\$m)	2001 -02 (\$m)
Commonwealth											
Direct	37	38	58	105	152	97	44	6	70	68	75
Premiums							32	97	170	232	262
State and local	127	146	137	126	205	297	328	305	373	341	365
Sub-total	164	184	195	231	357	397	404	408	613	641	702
Health insurance funds	528	535	539	546	564	596	600	603	635	774	946
Premiums							32	97	170	232	262
Net							568	506	465	542	684
Individuals	957	984	1,089	1,143	1,444	1,551	1,611	1,640	1,699	1,893	2,293
Other	4	6	6	8	10	9	8	11	11	8	10
Sub-total	1,489	1,525	1,634	1,697	2,018	2,157	2,187	2,157	2,174	2,443	2,987
TOTAL	1,652	1,944	2,051	2,179	2,373	2,551	2,591	2,566	2,788	3,084	3,689

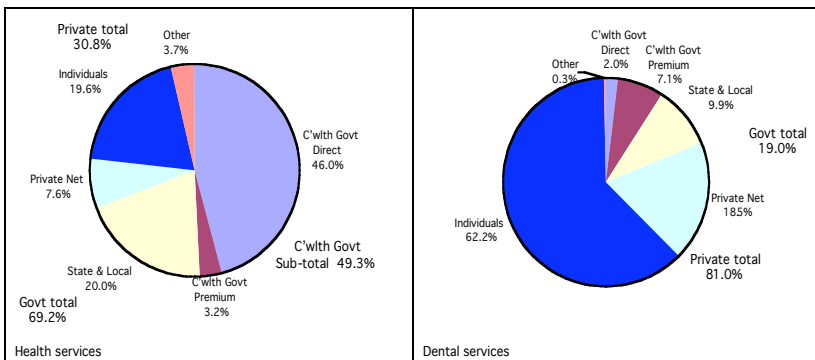
Source: AIHW Health Expenditure Australia 2001–02 (AIHW, 2003)

A number of perceptions about the financing of dental services are challenged by these data. First, it has been repeatedly asserted that expenditure on dental services is a State and Territory responsibility (Senate Community Affairs Reference Committee, 1998). However, the Commonwealth government has long had and continues to have an involvement in direct expenditure on dental services. More recently, the Commonwealth government indirect expenditure has almost equalled the State and Territory governments' expenditures on dental services. Second, in the mid 1990s it was claimed that during the short-lived Commonwealth Dental Health Program (CDHP), which ran during 1994–96, the States and Territories withdrew funding from dental services (Wooldridge, 1996). Across the four financial years spanned by the CDHP the State and Territory expenditure more than doubled. Third, it has also been suggested that the State and Territory

expenditure has filled the gap since the cessation of the Commonwealth government’s contribution to the CDHP. State and Territory expenditure has increased from \$297 million in 1996–97 to \$365 million in 2001–02. However, that has not filled the gap left by the withdrawal of the Commonwealth government’s maximum contribution of \$100 million per year to the CDHP.

Figure 1 presents a comparison of the source of expenditure for health services and dental services in 2001–02. Direct government expenditure is the dominant source of health services expenditure. The Commonwealth (46.0 per cent) and State and Territory governments (20 per cent) collectively directly fund two-thirds of all health services expenditure. The Commonwealth government’s indirect expenditure via the 30 per cent health insurance rebate adds a further 3.2 per cent. The largest percentage (19.6 per cent) of the remainder of the health services expenditure is sourced directly out-of-pocket from individuals, with a smaller percentage being individual net contributions to health insurance. In contrast, direct government expenditure on dental services remains at just under 12 per cent. Indirect government expenditure, via the subsidy on private dental insurance, is now over half as much as that on direct expenditure. Individuals continue to carry the hardship of purchasing dental care, directly contributing some 62 per cent of dental expenditure, and indirectly funding a further net 18.5 per cent via private dental insurance.

Figure 1. Source of expenditure on health and dental services, Australia 2001–02



Source: AIHW Health Expenditure Australia 2001–02, (AIHW, 2003)

Why dental services continue to be the least subsidised of health services remains unexplained by decision makers. While the separateness of dentistry from medicine may provide an historical answer, the increasing discussion of the inter-relatedness of both the determinants and the outcomes of many chronic conditions has offered a different perspective in recent years. Notions of the preventability of oral disease may have provided a theoretical reason to place responsibility on the individual. The preventability of the common oral diseases has been questioned and the effectiveness of individual-based interventions is not high. In contrast, the effectiveness of community interventions like water fluoridation offers support for a different view of responsibility. Yet little has changed in the subsidy of dental services. In the end it is difficult to avoid the simple answer that, having been outside the system of public subsidy for health services as it developed, the substantial public subsidy required for dental services just seems such a mouthful that it cannot be swallowed by those that control public funds.

This does not avoid discussion about what level of public subsidy is possible and how it might be equitably targeted. It is in these areas that the manifestly inadequate levels and inequity in the current targeting of public subsidy are abundantly obvious.

Direct public subsidy of dental services

The public subsidy for dental services had several dominant components in 2001–02, viz:

Commonwealth government

Department of Veterans' Affairs (DVA)	\$75 million
Medicare support for inpatients, oral surgical and radiology services	\$23 million
Private dental insurance rebate	\$262 million

State and Territory governments

Community dental services, school dental services and others	\$365 million
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Some additional public subsidy exists through the area of the individual expenses taxation rebate. Spencer (2001) estimated this to be approximately \$20 million in 1998–99.

State and Territory direct subsidy of public dental services is split across a number of program areas. Disaggregation of the expenditure is difficult, and the figures below for 2001–02 are indicative only, viz:

Adult dental care	\$184 million
Denture schemes	\$36 million
School dental service	\$75 million
Dental education	\$26 million
Corporate (and health promotion)	\$44 million
Total	\$365 million

This disaggregation has important differences from estimates for earlier years, for example 2000–01 (Spencer, 2001). Denture schemes and dental education have been separated and corporate expenditure has been separately identified from the core public dental service programs.

Leaving aside dental services under the DVA and the school dental services, the two larger areas of public subsidy directed predominantly at adults are of substantial value, between \$184 and \$262 million a year. What they are used for, who receives them and how much is received are as different as can be imagined.

In order to examine the distribution of the direct subsidy for dental care, the \$184.5 million spent on adult dental care has been further disaggregated (see Appendix A for details). It was estimated that some \$58.5 million was spent on emergency care for approximately 544000 courses of care. A further \$125.9 million was spent on general dental care for 388750 courses of care.

Table 12 presents the frequency distribution of eligible adult visits for public dental care in the last twelve months by household income. The vast majority of visits were made by adults with a household income of less than \$20000 per year. Only 22 per cent of visits were made by adults from households with an income above \$20000, with 16 per cent from households with an income between \$20000 and \$30000 per year. Whether those visits were for emergency or general dental care has not been differentiated. Therefore, the total expenditure of \$184.5 million has been distributed across household income levels on a basis proportional to the percentage distribution of all visits. Finally, the adult population of 14.8 million persons has been distributed across household income categories and the direct subsidy of public dental care expressed per adult in each household income category.

Table 12. Distribution of direct public subsidy for public dental care in Australia 2001–02 by household income

Income	Percentage of visits by eligible adults in last 12 months ⁺	Public subsidy (\$m) (Total \$184.5 million)	Percentage of adult population (n = 14.8 million)	Direct subsidy for public dental care per adult
< \$12,000	38.17	\$70.4	13.85	\$34.31
\$12–20,000	39.83	\$73.5	15.31	\$32.39
\$20–30,000	16.18	\$29.9	14.56	\$13.84
\$30–40,000	2.07	\$3.8	14.03	\$1.84
\$40–50,000	0.88	\$1.5	12.80	\$0.81
\$50–60,000	1.24	\$2.3	11.34	\$1.35
\$60–70,000	0.41	\$0.8	7.53	\$0.68
\$70–80,000	-	\$0.00	6.14	\$0.00
\$80,000 +	1.24	\$2.3	16.77	\$0.92

⁺ Source: *National Dental Telephone Interview Survey 2002* (Carter and Stewart, 2003)
See footnote to Table 3.

The distribution of the direct public subsidy for adult dental care, \$184.5 million, matches the distribution of visits. The vast majority of the direct public subsidy is targeted at adults with household incomes of less than \$30 000 per year. There is a low direct public subsidy which drifts to adults from households with higher incomes. This direct public subsidy of dental care for adults from households with higher incomes may be the result of accessing emergency services, changing eligibility associated with movement into or out of the workforce, or misreporting.

Using the distribution of adults by household income it was possible to express the direct subsidy for public dental care per adult in each household income category. Direct subsidies are highly targeted to adults from lower income households. The drift of direct subsidy to adults from households with incomes above \$30 000 is minimal. The striking impression is of a high level of target efficiency associated with the direct subsidy for public dental care.

Indirect public subsidy for dental services

After abolishing the Commonwealth Dental Health Program at the end of 1996, the Commonwealth government introduced, as part of a larger health financing measure, a new indirect subsidy for dental care in Australia. The Private Health Insurance Incentives Scheme (PHIIS), introduced in 1997–98, was initially targeted to low and middle-income earners. In 1999 PHIIS was extended to all income categories. Under PHIIS a 30 per cent rebate is paid on all private health insurance premiums, including private dental insurance. Ostensibly, PHIIS sought to reverse the steady decline in private health insurance and to relieve pressures on the public hospital system by moving more health care into the private sector. Initially membership rose only marginally so the incentive approach of the rebate was joined in 2000 by the regulatory sanctions of Lifetime Health Cover. Private health insurance rose, including private dental insurance (Harford and Spencer, 2004).

Aspects of the separateness of dental care from health care create a special context for the rationality and equity of the 30 per cent rebate applied to private dental insurance. The key structural separateness of dental care is the targeted eligibility of adults for direct public subsidies for public dental services. As seen earlier, the application of ‘means testing’ for adults’ eligibility for public dental care results in those eligible and those who use public dental services being predominantly from households with annual incomes below \$20000 per year. Private dental insurance was held by approximately 4 per cent of those who last visited a public dental clinic in 1999 (Carter and Stewart, 2002). This is a negligible percentage of those gaining access to public dental care. Movement of users of public dental services into the private sector for dental services was unlikely and there would be little reduction in the demand for public dental services. Clearly, this is a blind alley into which policy on dental care was accidentally carried.

This blind alley had a low target efficiency in two important ways. Table 13 presents information on private dental insurance collected in 2002. This includes the distribution of those 3.4 million contributors

to insurance in 2002 by household income and the percentage of them who had taken up insurance since 1999. The data revealed several features of the 30 per cent health insurance rebate on private dental insurance. First, for every one of the 771500 adults who had taken up private dental insurance since 1998, just over three already insured adults also received the incentive to stay with private dental insurance. Second, only 14 per cent of those contributors who had taken up private dental insurance since 1998 had household incomes less than \$20000 while nearly twice that percentage were contributors in households with incomes of \$80000 or more.

Table 13. Uptake of private dental insurance in Australia since 1999

Income	Insurance cover in 2002		Taken up insurance since 1999	
	%	Contributors	%	Contributors
< \$12,000	19.9	206,020	31.2	63,966
\$12–20,000	23.8	265,880	16.6	44,136
\$20–30,000	26.4	343,060	18.9	64,838
\$30–40,000	42.7	402,560	26.9	100,289
\$40–50,000	50.2	438,260	31.6	70,122
\$50–60,000	51.6	430,780	24.5	105,541
\$60–70,000	59.5	296,820	27.1	80,438
\$70–80,000	59.0	200,300	30.8	61,692
\$80,000 +	71.8	781,320	23.1	180,485

*Source: National Dental Telephone Interview Survey 2002
(Carter and Stewart, 2003)
See footnote to Table 3.*

Approximately a fifth of adults eligible for public dental care (ie with household incomes less than \$20000 per year) had private dental insurance. Private dental insurance may contribute to these eligible adults seeking their dental services outside the public dental services. A number of other incentives and barriers also influence this decision, not

the least of these being continuity of care with a private practitioner for those becoming eligible through aged pensions and the waiting time for general dental care in the public dental services. However, the dominant issue is that four-fifths of eligible adults have no such private dental insurance. For these eligible adults there is no incentive to move from public to private dental services. Applying the underlying rationale of moving demand from the public to private dental services was flawed.

It is in the area of equity where the indirect subsidy fails its severest test. Many middle and higher income category adults receive the rebate. The inequity of the private dental insurance rebate is illustrated by examining the distribution of the public subsidy by household income category. Table 14 shows the distribution of private dental insurance contributors by household income. Contributors are divided into single or family memberships. The percentage of households in 2002 in each income category with private dental insurance showed a strong income gradient, increasing 3.5 times from a low of 19.9 percent among households with an income of less than \$12000 to 71.8 percent in households with an income of \$80000 and over. It is also important to note the striking change in the balance of single and family memberships. A greater proportion of low income households had single memberships. This presumably reflects the higher likelihood of young adults, single parents, those with disabilities and widows or widowers in the low income households. The vast majority of high income households have family memberships. This presumably reflects many two-income families in middle and upper income categories. This shift in the balance of single or family memberships will be reflected in the size of the rebate paid to households. Table 15 shows the distribution of single and family contributors by household income category. More than 70 per cent of contributors are family contributors, most of these are in income categories above \$40000 per year.

Table 14. Contributors, single and family, to private dental insurance, Australia 2002, by household income

Income	Contributors as a % of household income category		
	Single	Family	Total
< \$12,000	11.8	8.1	19.9
\$12–20,000	6.1	17.7	23.8
\$20–30,000	8.9	17.5	26.4
\$30–40,000	11.5	31.2	42.7
\$40–50,000	14.0	36.2	50.2
\$50–60,000	9.3	42.3	51.6
\$60–70,000	9.3	50.2	59.5
\$70–80,000	11.7	47.3	59.0
\$80,000 +	12.4	57.4	71.8

Source: National Dental Telephone Interview Survey 2002 (Carter and Stewart, 2003) See footnote to Table 3.

Table 15. Distribution of private dental insurance contributors, single or family memberships, by household income

Household income	Percentage of contributors		
	Single	Family	
< \$12,000	4.54	1.49	
\$12–20,000	2.80	5.02	
\$20–30,000	4.19	5.90	
\$30–40,000	4.19	7.65	
\$40–50,000	3.89	9.00	
\$50–60,000	3.06	9.61	
\$60–70,000	1.83	6.90	
\$70–80,000	1.18	5.77	
\$80,000 +	3.89	19.09	
Total	29.57	70.43	100.00

Source: National Dental Telephone Interview Survey 2002 (Carter and Stewart, 2003) See footnote to Table 3.

The rebate paid could be approached from two directions: top-down or bottom-up. A top-down approach accepts the rebate estimate in Australia's health expenditure in 2001–02 as \$262 million and sets about apportioning this to the 3.4 million contributors, acknowledging the distribution of single and family contributors, by household income category.

A bottom-up approach uses an estimate of the premium and/or rebate for a single or family contribution and multiplies these by the estimated number of single or family contributors within the 3.4 million contributors.

The premium for private dental insurance in March 2002 was estimated as \$14.80 for a single contributor and \$29.60 for families per month (Mutual Community, 2002). The 30 per cent health insurance rebate is equal to \$53.40 per year for single contributor and \$106.80 per year for families. The product of the estimated 1.01 million single and 2.39 million family memberships by the rebate is \$309 million.

The bottom-up estimate based on membership across 2001–02 and an early 2002 premium for dental insurance, \$309 million, is considerably higher than the health expenditure estimate for 2001–02 of \$262 million. In a previous examination of the rebate the 2003 Senate Select Committee on Medicare noted this type of discrepancy (Senate Select Committee on Medicare, 2003). Earlier, the estimate of State and Territory expenditure on dental services used to calculate the direct public subsidy of dental care was based on published health expenditure data. Therefore, for consistency this approach has also been used for calculation of the indirect public subsidy for dental services. For the remainder of this examination of the indirect public subsidy through the rebate for private dental insurance the lower, published estimate of \$262 million will be used.

A huge proportion of the private dental insurance rebate ends up in the pockets of contributors in households with middle and high incomes.

The distribution of the private dental insurance rebate by household income is presented in Table 16. Of the total \$262 million in rebates, only \$31 million or 12 per cent is directed to contributors in households with incomes less than \$20000 per year. A further 21 per cent goes to contributors with household incomes between \$20000 and \$40000 per year. Some 43 per cent goes to contributors with household incomes between \$40000 and \$80000, and 25 per cent to those with household incomes over \$80000 per year.

Table 16. Distribution of the private dental insurance rebate in Australia 2001–02 by household income

Income	Contributors			Rebate (\$m)		
	Single	Family	Total	Single	Family	Total
< \$12,000	154,360	50,660	205,020	6.988	4.587	11.575
\$12–20,000	95,200	170,680	265,880	4.310	15.455	19.765
\$20–30,000	142,460	200,600	343,060	6.449	18.163	24.612
\$30–40,000	142,460	260,100	402,560	6.449	23.551	30.000
\$40–50,000	132,260	306,000	438,260	5.988	27.707	33.695
\$50–60,000	104,040	326,740	430,780	4.710	29.585	34.295
\$60–70,000	62,220	234,600	296,820	2.817	1.242	24.059
\$70–80,000	40,120	196,180	200,300	1.816	17.763	19.579
\$80,000+	132,260	649,060	781,320	5.988	58.770	64.758

*Source: National Dental Telephone Interview Survey 2002
(Carter and Stewart, 2003)
See footnote to Table 3.*

Some \$31.3 million of the rebate was received by households with incomes less than \$20000. However, approximately the same amount was received by households in each category above \$20000 per year, with the exception of the \$80000 plus category where households received some \$64.8 million.

For every \$1 directed at contributors who are low income Australians, \$8.36 is spent on those contributors whose household incomes are

above \$20000 and \$2.07 of this is spent on those contributors whose household incomes are \$80000 plus.

As outlined in Table 17, when this indirect public subsidy is expressed per household at each household income level the rebate per household increases from \$13.99 for those households with an income less than \$12000 per year to \$64.53 for those households with incomes of \$80000 plus per year, a 4.5 times increase in the indirect subsidy. While more complex analyses might refine these estimates, there can be a reasonable reliance on the trends and broad magnitude of the inequity.

Table 17. Private dental insurance rebate in 2001–02 per Australian household by household income

Income	Number of households	Total rebate (\$m)	Rebate per household
< \$12,000	827,280	11.6	\$13.99
\$12–20,000	919,200	19.8	\$21.50
\$20–30,000	865,580	24.6	\$28.43
\$30–40,000	834,940	30.0	\$35.93
\$40–50,000	766,000	33.7	\$43.99
\$50–60,000	681,740	34.3	\$50.31
\$60–70,000	451,940	24.1	\$53.23
\$70–80,000	291,080	19.6	\$67.26
\$80,000 +	1,003,460	64.8	\$64.53

*Sources: National Dental Telephone Interview Survey 2002 (Carter and Stewart, 2003)
Health Expenditure Australia 2001–02 (AIHW, 2003)
See footnote to Table 3.*

The 30 per cent private dental insurance rebate is grossly inequitable. Given the history of dental services being the least subsidised of health services and recognition that what little subsidy existed three or four decades ago went to the higher income individuals (Scotton, 1978), one needs to question whether such a policy outcome is accidental or willingly accepted because it relates to access to dental care.

A reshaping of the policy environment is desperately needed, but the prognosis for reshaping in the current policy environment remains poor. 'Little seems likely to be achieved until a more positive, receptive policy environment is created at all levels of government. At present policy on public dental care is caught in a chilly stand-off between the Commonwealth and States or Territories, punctuated by warm bursts of buck-passing and point-scoring. Responses are more political rather than policy-shaping, short rather than long-term, negative rather than creative' (Spencer, 2001, p50). The oral health policy environment is a victim of our feral federalism. In spite of some acceptance of the problem, the response is limited by the level of dysfunction that surrounds responsibilities and resources.

But there also seems a further fundamental barrier to moving forward, maybe one which is sufficient to maintain the oral health policy environment in such an unresponsive posture. There is an inequality in the importance of oral health and dental care that pervades the discussion of oral health and dental care among higher level health bureaucrats and policy-makers. This inequality flavours perceptions and perpetuates the dysfunctional policy response. Oral diseases and disorders are not associated with mortality; dental care is not seen as life-saving. However, this is no different to many diseases and much health care. Oral diseases and disorders should be seen as potentially equal to others in their burden on the Australian community. Dental care should be seen as potentially equal in its efficacy and effectiveness to other health care. There needs to be a respect for and commitment to the evidence on the population health importance of oral health and the capacity of dental care in improving people's well-being.

IMPACT OF ORAL HEALTH ON HEALTH AND WELL-BEING

It has become increasingly common in oral health to draw attention to ‘causal’ links between oral health and systemic health and, by extension, to general well-being. These potential links are quite varied. They include:

- The plausibility of links between oral disease, especially gum disease, and significant health outcomes
 - Pre-term low birth-weight babies (Offenbacher et al, 1996)
 - Cardiovascular incidents (Beck et al, 1996; Mattila et al, 2000)
 - Cerebrovascular incidents (Joshi-pura et al, 1999; 2003; Grau et al, 1997).
- The plausibility of reciprocal links between gum disease and diabetes (Grossi and Genco, 1998).
- The possibility of links between severe early childhood decay and otitis media, even delay in early growth and development (Karjalainen et al, 1992; Acs et al, 1992; 1999).
- The possibility of links between chewing capacity, dietary patterns and nutrition, ranging from obesity to nutritional deficit (Hung et al, 2003).
- The links between oral health and the outcome of substantial medical interventions, for instance cardiac surgery or transplants, which are illustrative of the topic of medically necessary dental treatment (Rutkauskas, 2000).

However, there are equally a number of potential ‘causal’ links between systemic health and oral health. These include:

- The associations between underlying systemic diseases such as diabetes, osteoporosis and rheumatoid arthritis and gum disease (Amor and Han, 2003; Jeffcoat and Chesnut, 1993; Mercado, Marshall and Bartold, 2003).
- The links between developmental or systemic health conditions that affect saliva production and decay experience (Cohen-Brown and Ship, 2004; Guggenheimer and Moore, 2003).

- The impact of radiation treatment for head and neck cancer on oral mucosa, saliva production and decay experience (US NIH, 1990).
- The impact of medication on saliva production (Sreebny and Schwartz, 1997), tissue inflammation (Lucas et al 1985) and decay experience (Thomson et al, 2002).

The possible aetiologic links between oral and systemic disease or between general and dental treatments all indicate a high degree of inter-relatedness between oral and general health. While some of that inter-relatedness may simply be a result of close anatomical relationships or direct physical communication between body parts, many rely on the dynamics of the circulatory system and the immune response to pathogens.

What is less discussed is the level of evidence for the links. Much of that evidence has been built upon cross-sectional associations. Far less evidence is derived from cohort studies and even less from interventions. This is crucial, as the same inter-relatedness points to the potential for spurious or confounded associations.

There is a debate among researchers on the evidence of association between gum disease and cardiovascular disease. It centres on the methodological issues of control for confounders in this association (Hujoel et al, 2002; Spickerman, Hujoel and DeRouen, 2003). However, there is the potential for that debate to miss the obvious. Oral and systemic disease are inter-related. While that inter-relatedness may have an aetiologic association between them, it may also be an expression of their association with other risk factors. In that case oral disease may be a biological marker for systemic disease. Rather than weaken the inter-relatedness, this outcome for the association of gum disease with cardiovascular disease continues to support the falsehood of separateness. The falsehood of separateness is supported by:

- the diversity of associations between oral and systemic disease; and
- the diversity of associations between the treatment for one or other disease and health outcomes.

This predominantly biological, clinical and epidemiological perspective of the inter-relatedness is also supported by quite different perspectives.

Many chronic diseases such as cardiovascular disease, cerebrovascular disease, cancer, accidents and oral diseases have risk factors in common. Those risk factors are common to more than one disease (Sheiham, 2000). For instance, smoking is a risk factor for cancer including oral cancer, cardiovascular disease, cerebrovascular diseases and gum disease. As a result, an integrated common risk factor approach, where health is promoted by controlling a small number of risk factors, potentially at a lower cost than a disease-specific approach, has been promoted (Sheiham, 2000).

Not only is an integrated approach logical, the co-occurrence of risk factors in population groups points to the shared upstream conditions that shape and maintain risk and protective factors. Recent research by Sanders has demonstrated the same upstream social determinants of oral health as have been widely documented for general health (Sanders, 2003). Psychosocial factors like early life, stress, social exclusion, work and lack of work and support are thought to influence oral disease either by directly overloading the immune system's stress response or by encouraging risk behaviours.

The breadth of the inter-relatedness of oral and general disease and care should undermine the separateness of oral and general health policy. Oral disease and dental care should be seen as equal to any other disease and care for a body part or system. This equality needs to be firmly adopted by the dental profession as well as the medical profession.

There is some evidence of change toward equality that offers some optimism for the future:

- John Dwyer (2002) speaking for senior medical staff lobbying for the 2003 Australian Health Care Agreement, commented that dental care is an area of inequality that should be addressed in that agreement.

- Sue Page (2003), Head of the NSW Rural Doctors Association, cited dentistry as part of the rural health crisis confronting general medical practitioners.

Given a groundswell in this change in perspective, confidence may re-emerge that a more positive policy environment will take shape—an environment where either the responsibilities and resource issues will be somehow shared or where the sum of individual jurisdictional commitment will reflect a new opportunity. This would be a triumph of hope over experience!

POLICY DIRECTIONS

The following policy directions are proposed so that inequalities can be diminished and oral health and access to dental care improved. They are proposed so as to stimulate a better balance between the prevention and the treatment of oral disease, and are relevant to all levels of government and jurisdictions.

Extend the coverage of water fluoridation

Water fluoridation is a safe, effective and socially equitable public health measure for the prevention of dental decay across all age groups (Spencer et al, 1996). Some 30 per cent of Australians do not have access to water fluoridation. Those without access to fluoridated water, with the exception of Brisbane, are biased toward lower social position households (Spencer et al, 1998). They include some of Australia's most vulnerable groups for poorer oral health: Indigenous people and rural dwellers. All treated potable water supplies should be fluoridated. A Commonwealth, State and Territory governments' cost sharing agreement on capital and recurrent costs of water fluoridation should be reached so as to stimulate the implementation of water fluoridation. No other single measure can be taken that would achieve the cost-effectiveness of water fluoridation. It provides improved child, adolescent and young adult oral health that is a platform for all other oral health promotion and ongoing maintenance of oral health (Wright et al; 1999; 2001; Sanderson and Wilson, 1994). Its extension into

areas with a bias toward lower socio-economic households and its increased benefit for those most at risk would contribute to reducing inequalities in oral health.

Engage in health promotion

Community-wide efforts to re-shape the context in which people's oral risk behaviours are shaped and maintained are essential. Oral diseases share a number of risk factors in common with the major national health priority areas. Not only are there common risk factors, such factors tend to cluster in population groups with a lower socio-economic status (Spencer and Sanders, 2004). These are persuasive reasons for integrating oral health promotion into general health promotion. With appropriate tailoring and targeting of programs it would be expected that currently vulnerable groups might receive the greatest benefit and therefore that inequalities would be narrowed.

Opportunities abound for oral health promotion to be integrated into general health promotion, from the cradle to the grave. For instance, the growing concern over childhood obesity draws attention to dietary patterns and nutrition as well as physical activity levels. Dental decay is a diet-related disease and therefore health promotion programs directed at childhood obesity can also incorporate a focus on the reduction of dietary hits of extrinsic sugars and highly acidic drinks. Further, evaluation of such programs should include consideration of the oral health outcomes, avoiding the potential for one risk factor gain (the reduction of fat intakes) being counterbalanced by a loss in another (an increase in sugar consumption).

Another timely example is the current interest in healthy ageing. The Enhanced Primary Care program involving health checks at age 75 years with general medical practitioners can readily incorporate oral disease screening questions and lead to assistance that offers to reduce the appalling state of oral health when older adults enter into residential care.

While programs for oral health promotion should be integrated into general health promotion, there is a need for discipline expertise to be developed and maintained around the key oral health problems for the Australian population. Research, demonstration activities, and input into the design, implementation and evaluation of larger scale programs are required from groups supported to foster oral health promotion. A network of centres of activity needs to be supported. While not a substantial budgetary measure, this type of commitment is required to affirm the importance and raise the effectiveness of activities.

Revitalise the school dental services

Three decades of improving child oral health have come to an end and oral health among the 50 per cent of Australian children cared for in the school dental services has deteriorated over the last six to seven years. The school dental services have rested the case for their effectiveness largely on improved oral health. Child oral health is not solely an outcome of dental care and it is likely that the school dental services have played a modest role in past achievements. However, it is appropriate that the school dental services assume a responsibility for reacting to the deterioration observed. This reaction should see a revitalisation of the school dental services. The revitalisation should include:

- a commitment to population child oral health promotion. Quite specific oral health promotion activity needs to be initiated in the areas of maternal and child oral health, preschool oral health, and school oral health. There needs to be an emphasis on health promotion that helps shift the balance from risk to protective behaviours or exposures;
- a commitment to expansion of school dental service coverage among the child population especially lower socio-economic children who slip through the safety net;
- a strong emphasis on clinical prevention on the basis of risk identification and management as part of the provision of dental care;

- continued reform of the targeting of the school dental services and prioritisation among children enrolled in the school dental services; and
- consideration of the wider mission of the school dental services as a context in which attitudes and behaviours are being shaped among children.

Such activities must aim to improve oral health among vulnerable children and serve as an investment in their longer-term oral health as adults.

Reform the public dental services

Public dental services have struggled under an institutionalised shortage of resources and overwhelming demand for dental care. In this circumstance there has been less than appropriate emphasis on evaluation of what works well and why and reform where required.

There is an urgent need for demonstration of reforms that test:

- beneficial modes of interaction between public and private sectors in the provision of dental services. The looming shortage in the dental labour force, particularly in rural and public sector areas, will require the public dental services to develop new ways of incorporating private dental practitioners or practices into networks that deliver public dental care;
- equitable means to prioritise among persons seeking public dental care. Demand for public dental care has been managed on a split between emergency and general dental care and a chronological waiting list for general dental care. There is a growing body of research that indicates that a substantial minority of emergency dental care seekers do not need urgent treatment (Spencer et al, 2002). Such persons are basically queue jumping to receive piecemeal dental care. Further, among general dental care seekers there is considerable variation in how urgently care should be received given the underlying experience of disease, its rate of progression, and propensity to achieve oral health gains when treated. Several States have made progress in prioritising among persons seeking public dental care. New South Wales has

implemented an oral health program that assigns priority on the basis of the impact oral conditions are having on people's daily lives and additional social characteristics which are postulated to be associated with greater vulnerability in terms of oral health and access to dental care (Jones, Roberts-Thomson and Spencer, 2002).

Research in South Australia and New South Wales has also developed a triage system for urgency of care based on subjective indicators and social impacts, called the Relative Needs Index (Spencer et al, 2002). This is currently being validated and then trialled in a demonstration project in South Australia. Both developments provide insight into ways in which priority can be more equitably assigned to those people seeking public dental care;

- targeted programs within the pool of adults eligible for public dental care. There is recognition that there are a number of more vulnerable groups or groups for whom a continued investment in their oral health would be beneficial. Unlike assigning of priority among those who seek care, targeting vulnerable groups seeks to establish intervention programs that are proactive, rather than responsive. Targeted groups include mothers and infants, young adults, Indigenous adults, functionally dependant older adults and those in residential care. Targeting requires planning and budgeting decisions to devote resources to health promotion, outreach and dental care programs, possibly including people not eligible for public dental care. While the justification for recognition as a vulnerable group can vary, the development of targeted programs is an important shift in public dental care. It moves away from the dominance of low income adults as the focus for public dental services to a focus on a wider range of population groups, the members of which may be more readily identified as requiring a community response to their oral health and dental care and towards whom the prevailing attitudes may be more supportive of public subsidy for dental care (Donabedian, 1973; Jenny, 1980). Collectively these sorts of reforms should make a modest contribution to reducing inequalities in oral health, but a more substantial contribution to reducing inequalities in access to dental care.

Reshape funding arrangements for public dental care

The direct public subsidy for the provision of public dental care is manifestly inadequate in all Australian States and Territories. Adult Australians who use the public dental services have unacceptable access to dental care. Previously, the funding required to bring access among eligible adults into line with that enjoyed by more affluent Australians has been estimated to be between \$446 and \$611 million (Spencer, 2001). The responsibility to achieve a more equitable and efficient access to dental care rests on the State and Territory and Commonwealth governments. State and Territory governments have perpetuated budget decisions that have led to all public dental services experiencing a scarcity of resources relative to the demand placed on them. However, this is of varying severity, reflecting quite different levels of expenditure per eligible child or adult for public dental care.

Several outcomes need to be achieved, most appropriately through an Australian Dental Care Agreement:

- State and Territory expenditure on child oral health through the school dental services should be brought up to a benchmark set against those with more consolidated programs that achieve higher levels of coverage. This would be a substantial challenge in New South Wales and Victoria.
- Minimum State and Territory expenditure on adult dental health should be set at defined levels via a funding formula. Expenditure at or above that minimum level should be linked to additional Commonwealth government funding.
- Commonwealth government expenditure on oral health should reach a level that matches that of the States and Territories. This propels the Commonwealth government into a national leadership role in assessment, evaluation, policy development and assurance of adequate effort in promoting health and access to needed dental services (US National Academy of Sciences, 1988). This level of expenditure is approximately equal to that made on the 30 per cent health insurance rebate, or \$262 million per year.

- A portion of all public subsidies should be quarantined for the extension of water fluoridation and oral health promotion, as well as for targeted programs for many vulnerable groups.

Even with the best of intentions little will be achieved in reducing inequalities in oral health and access to dental care without substantial additional public subsidy. The deterioration in child oral health over the last few years of the 1990s and the resistance of inequalities in access to dental care among school children both point to the challenge to raise public subsidy to the level where existing programs can thrive not merely survive, and can be joined by new well targeted and effective programs to improve oral health and access to dental care.

Expand the dental labour force

The dental labour force, like others among the health professions, is moving into a supply shortage (Spencer et al, 2003). The magnitude of the shortage by 2010, which is largely unavoidable, is conservatively estimated to be approximately 1500 dental providers or some 3.8 million dental visits. A shortage of this magnitude will set a ceiling on expressed demand for dental care, accentuating access difficulties for population groups already without access to adequate dental care: rural and remote dwellers, Indigenous people, and urban adults eligible for public dental care. The supply shortage will unleash higher growth in private fees and incomes. This in turn will drive adults eligible for public dental care out of self-funded private dental care into the queue for public dental services. However, those services will struggle to recruit and retain dental providers in the face of higher private practice incomes, diminishing the capacity of the public dental services to provide the required care.

Contracting the private sector to provide public dental care will be limited by little or no idle capacity and the ready availability of private patients at full dental fees. This is an uninviting scenario and efforts are required to minimise the extent and duration of the consequence of the supply shortage.

A national policy response is required. Fragmented, uncoordinated regional responses will be disappointing and collectively the outcomes will be less than optimal. This is a national problem with cross-sectorial responsibilities. Australia needs:

- a coordinated, national dental labour force plan;
- an increase in the number of dentists and dental therapists to underpin both the ‘mainstreet’ of private practice dentistry and key public dental programs;
- a program of recruitment and/or placement of dentists in under-served areas, off the ‘mainstreet’ of suburban dental practice;
- an increase in university education in oral health leading to dental therapy, dental hygiene or new allied dental professional roles including oral health promotion; and
- a new level of flexibility that encourages the emergence of preventively-oriented allied dental professionals who could work in non-traditional dental practice; for example, residential care facilities, remote Indigenous communities, hostels and detention centres.

These outcomes should be built upon a sustainable base in dental education that assures self-sufficiency in Australia’s dental labour force. Solutions to the supply shortage involving overseas trained dental professionals should be limited to the short term. They rob young Australians of the opportunity to enter rewarding professions and open up a series of international equity issues.

Many of these issues have been discussed and documented by the National Advisory Committee on Oral health (NACOH), a committee reporting to the Australian Health Ministers Conference. NACOH has developed Australia’s National Oral Health Plan. The Plan was endorsed by the Australian Health Ministers Conference in July 2004 and has recently been published. Of greater concern is the commitment of the Commonwealth and States and Territories to its implementation.

A recent quote from Mertz and O’Neil (2002) reminds us that the issues are wider than simply more dentists: “The standard response to the lack of dental services is to suggest increasing the number of dentists. Some increase may be warranted, and perhaps inevitable, but it may be more useful to understand this problem less as a problem of supply of practitioners and more as a poor fit between part of the current model, patterns of disease and the people needing care.” This gives emphasis to the need for a package of policies with an appropriate mixture of population level prevention and oral health promotion, preventively oriented services that invest in future oral health and practice treatment services that seek to minimise life impacts of oral disease.

The ultimate test for Australians’ oral health and access to dental care is whether decision-makers can move beyond mere recognition of oral problems to an acceptance that such problems constitute a public health challenge. There needs to be acknowledgement of the inter-relatedness of oral and general health and identification with the loss of Australians’ quality and possibly quantity of life because of poor oral health and inadequate access to effective dental care. The inequalities in oral health and access to dental care add a further social justice dimension to this context in which policy is framed. Strong leadership is required, most appropriately in a partnership between the Commonwealth and States/Territories, to ensure the consideration of a package of policies that collectively could achieve the desired outcomes. However, it is only with political commitment to improve oral health and dental care and to reduced social inequalities that appear to have been deepening in Australia over the last decade that real progress will be seen. The Australian population should not have to wait any longer for that political commitment to be made.

APPENDIX A. EXPENDITURE ON PUBLIC DENTAL SERVICES FOR AUSTRALIAN ADULTS, 2001–02

Population of Australian adults		14,815,048
% population who are health card holders	33.5%	4,963,041
% health card holders who are dentate	80%	3,970,433
% dentate health card holders who visited in last year	51%	2,024,921
% dental health card holders who visited who accessed public dental care	30%	607,476
Average number of visits per person visiting for public dental care		2.24
Total number of visits		1,360,747
% all visits that are emergency visits	40%	
Total number of emergency visits		544,299
Total number of general dental care visits		816,448
Visits per course of care	emergency	544,299
	general	388,785
	2.1	
Cost per course of care	emergency	\$107.50
	general	\$323.95
Total expenditure	emergency care	
\$58,512,142		
	general dental care	\$125,946,900
Total expenditure		\$184,459,042

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REVIEWS

DR JOHN MATTHEWS

Australian Dental Association

I have framed my response to Professor John Spencer's paper as an elected executive member of the Federal body of the Australian Dental Association (ADA).

Whilst I acknowledge his colloquium paper is scholarly and non-partisan, it is a public document. Some of my concerns relate to political balance, and issues of funding for dental services. If we are to progress this issue we need to accept the recent election outcome.

Professor Spencer has an unequalled record for research into oral public health issues in Australia. His work is universally respected and used by the ADA frequently. Professor Spencer has been a generous and forthright participant in the public discussions on dental care delivery in this country.

I have made some general comments.

Health funds

An uneasy relationship exists between the health funds and the dental profession. The risk of interference in the dentist/patient relationship is ever present. There is concern about the growing influence of large corporate groups in what were originally not for profit benevolent societies. Also of concern are fund clinics enjoying competitive advantages and the growing number of contracted (preferred) provider arrangements.

ADA policy supports the right of governments to fund dentistry as they choose, but not at the expense of needy groups.

The paper is critical of the role health funds play in supporting those who can afford private dental care. The Howard government might argue that they are merely encouraging individuals to take care of themselves. The ADA believes that people with health insurance will make more regular visits to the dentist. We have seen no evidence to the contrary. Early intervention and regular professional assessment is a cornerstone of preventative care. It should not be assumed that the 30% ancillary support was designed to address inequalities of access to care.

There appears to be variations between Professor Spencer's figures and those provided by the Australian Health Industry Association (AHIA) to the Senate Select Committee on Medicare (June 2003). The AHIA claim that approximately 1 million people with gross household incomes (GHI) less than \$18,000 pa hold ancillary private health insurance (PHI). AHIA also maintain PHI is held by another 1.5 million with a GHI less than \$33,000 pa. 50% (ie. about 4 million) of all insured have a GHI of less than \$50,000. The AHIA argues that to remove such support would further burden the public system. This is supported by the fact that less than 4% of public patients hold private dental insurance.

The ADA does not endorse a universal dental scheme (estimated cost of between \$4-\$7.5 billion). We support a continuation of the private ancillary scheme with additional funding for targeted groups. In the current climate the withdrawal of the private ancillary cover would not guarantee similar funding transferring to other schemes.

The AHIA was invited to an informal meeting with Dr Arthur Van Deth and I during the writing of the National Advisory Committee on Oral Health (NACOH). However the AHIA played no further part in formulating the document. There is still an opportunity for the Commonwealth Government to direct the funds to develop schemes that ensure the long term oral health of a patient.

Commonwealth government

The Howard government has steadfastly maintained dentistry is a matter for the State and Territory governments. This has been a great frustration to dentistry as Professor Spencer reflects in his paper. Figures are given of Commonwealth expenditure and they should also include defence health spending, education and research. Education and research should be included as they impact on the issues discussed. The fact that the Commonwealth is a significant contributor to the latest National Oral Health Survey should also be acknowledged.

The fact that the government will have no dialogue with dentistry is a matter of concern. Of even more concern is the apparent lack of quality advice on dental matters. This was apparent when we discussed dental issues with the Department of Health and Aging as some limited dentistry was brought into Medicare Plus. It beggars belief that the Commonwealth has no access to expert advice in the dental areas of education and research on the delivery of services.

The States and Territories

An apparent shortcoming of the paper is that it does not deal with each State and Territory individually, tending to apportion most of the blame for the inequalities of oral health to the Commonwealth Government. The table of changing expenditure would be enhanced by a breakdown of the individual states over the last 10 years. Some States perform better than others.

However, we should make some allowances for the initiatives and challenges of the last decade. In Victoria for example we have seen:

- Significant changes to the Dental Act after it was reviewed to comply with competition law policy.

- Changes to the administration of public dental services and levels of instability in that sector.
- Building a new dental school.
- Commissioning of two efficiency reports (Prof John Spencer and Auditor -General).
- Workforce and funding shortages.

Recent extra funding of \$90 million and a general attempt to address recruitment and retention are encouraging steps. The point is that dentistry has not been entirely neglected at State level by the minister or policy makers, only under funded.

Commonwealth Dental Health Program and the Department of Veterans' Affairs

The ADA cautiously supported the CDHP. Issues that concerned it largely were the selection process of eligible patients and the commitment of the government to adjust fee scales in line with rising costs. Our recent unsuccessful lobbying of the Government to increase the Department of Veterans' Affairs scale has been a matter of frustration. When we see the conflict the Australian Medical Association has with Medicare rates, it is no wonder we do not wish to recommend our members commit to a long term scheme where our fees are decided by government.

Workforce

Whilst workforce is outside the scope of the paper, it can be linked closely to the low funding available to the public sector. The ADA supports the argument for graduating more dentists but believes there is a need for Commonwealth leadership in the area of dental education.

The importance of oral health

Professor Spencer provides us with an elegant definition of oral health and its importance to an individual. He also examines the research

linking oral health and general health. Oral health currently does not receive the recognition it deserves by policy makers. This is odd since Professor Spencer can produce evidence that it rates highly as a family expenditure priority. Dentistry hardly surfaced as an election issue – possibly because of the refusal of the Howard government to debate the issue. Possibly also there has been a growing influence of other special interest disease groups (e.g. breast cancer, asthma, diabetes) which have surpassed dentistry in capturing media attention.

There is no doubt dentistry will have to find new ways of attracting political and media attention if we are to address the inequalities in oral health.

Policy initiatives

1. Extend the coverage of water fluoridation.

Agree – and possibly include making available low cost fluoride toothpaste.

2. Engage in health promotion.

Agree.

3. Revitalise the school dental service.

Agree.

4. Reform public dental services.

Agree.

5. Reshape funding arrangements for public dental care.

Agree – but question how the Commonwealth can set minimum standards and expenditure levels whilst no funds are specifically earmarked for dentistry. This needs further discussion.

To which I might add that the Commonwealth should take a role in national oral health assisted by:

1. Establishing a Commonwealth Ministerial Advisory Committee on Dentistry.
2. Establishing a Commonwealth Dental Workforce Committee to advise on:
 - Workforce mix
 - Selection of students
 - Integration of overseas dentists into the workforce
3. Supporting NACOH as a starting point.

PROFESSOR MICHAEL MORGAN

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The University of Melbourne

As expected, I enjoyed reading this paper. It has been constructed using clear, unambiguous writing based on current knowledge, with information largely generated by the group headed by Professor Spencer. The arguments are thoughtfully presented and do not stray from the available evidence. The data referred to in the text are presented in well organised, concise tables. The purposes of the paper, as defined by the author, are provided early and give a clear indication of where the discussion will lead.

To give full attention to the paper and the author's argument, the reader should have considered *a priori* what could reasonably be expected from its reading. I expected the focus of the paper to be delivered under the following three headings:

1. **Evidence that there is inequity in both oral health and dental care services within the Australian community**
2. **Determination that these inequities have aetiologies or causative factors which can be traced to failures of policy or other external dynamics such as political expediency**
3. **Realistic, achievable and even theoretical options which will address the inequity gap.**

The paper presents stronger and more convincing arguments on points one and two than it does on point three. Establishment of an existing inequity and tracing the causes, progressed here in logical fashion and using high quality evidence, is easier than finding solutions to long standing and perhaps broader societal problems. If the solutions to these problems were easily identified, they would have been found and programs based on the solutions, implemented. The author provides a discussion around areas that require further policy development. These areas are then expanded and further options provided.

I will discuss the paper under the headings I have constructed.

1. **Evidence that there is inequity in both oral health and dental care services within the Australian community and**
2. **Determination that these inequities have aetiologies or causative factors which can be traced to failures of policy or other external dynamics such as political expediency.**

Data from Spencer's own Centre provide evidence that there is at least a slowing, but more probably a reversal, of oral health gains in Australian children over the past decade. If, as argued by Spencer, this effect is itself inequitable across socio-economic status groups and is coupled with a differential ability to access services, then we have a major public health policy failure. Given that the data were collected from those that actually access services, the worsening of oral health is likely to be understated in some groups – both child and adult.

Regardless of the debate about changing oral health status, the evidence of inequality of health coupled with low access opportunities is cause for concern indeed. In addition, the data demonstrate the necessity and timeliness for the upcoming National Adult Oral Health Survey which will fill some of the gaps in our knowledge, particularly within adult oral health.

The poor oral health sequelae for Australian children and adults that followed the demise of the Commonwealth interest in oral health, the rather disjointed and haphazard nature of federal policy related to oral health funding and the variety of State initiatives with varying degrees of success, are well illustrated in this paper. The lack of Commonwealth input into oral health was again highlighted by a recent survey undertaken by the "Oral Health Alliance", an informal group of consumer, welfare and professional bodies interested in public dental health support. Several questions regarding oral health policy were put by the Alliance to the major political parties prior to the recent federal election. Responses were received from the Australian Labor Party, the Democrats and the Greens. The Liberal Party did not respond. The other parties responded with a variety of options to

address the poor levels of access to dental services, all of which were funded at lower levels than the previous Commonwealth Dental Health Program terminated by the Howard government in their first term of office.

As members of the health fraternity, we may have been complicit in the failure of the policy. We have long been vociferous in self congratulation over the decrease in dental caries, perhaps to the point of promulgating the myth that dental caries is a disease of the past. The public is after all, used to the successes of the medical community in the fight against infectious diseases such as small pox and even tuberculosis. By our own hand, we may be promoting a complacent rather than a vigilant community in relation to dental caries. Perhaps we should adopt an oft quoted slogan: “be alert, not alarmed”!

A further aspect to this, highlighted by Spencer, is the implicit acknowledgement that, if oral diseases are preventable, individuals should be given responsibility for their own oral health outcomes. In theory the preventability of dental disease, as with almost all diseases, is achievable. By making such statements, however, there is an inference that the power to prevent disease rests in the hands of the individual and as a consequence, victims can be blamed. This is a dangerous line of argument from a policy perspective and one that shifts the responsibility away from the community and unfairly onto the individual. As Spencer indicates, factors beyond the control of individuals may have a strong influence on oral health, prevention of disease and also on access to care.

A further example of our complicity might be in the area of our health promotion messages around fluoride use. Spencer identifies changing exposure to fluoride as a possible reason for the increased risk to dental caries. While the role that bottled water might be playing in oral health outcomes is, to me, still very speculative, it is likely that we are sending out confusing public health messages regarding the discriminatory use of fluoride, especially in toothpastes. Low dose fluoride toothpastes are promoted for reasons of fluorosis risk reduction rather than for their

caries reduction effect. However, what was once a relatively simple message about fluoride use has become a health promoter's nightmare. It seems that clear, unconfused and practical messages concerning multi-dose toothpastes that the public can follow are not easy to produce.

More than anything else, this paper highlights what can happen in the absence of sound oral health policy. The effect, planned or unplanned, of polarising community access to oral health care through private insurance subsidies is not something that a caring, compassionate or equitable society should have allowed to happen. Similarly, the flawed rationale of moving demand from the public to the private dental services indicates the lack of commitment to sensible health care planning. Spencer's in depth analysis of the impact of these policies (or lack of) is a strength of this paper.

3. Realistic, achievable and even theoretical options which will address the inequity gap.

Under points 1 and 2, the paper sets up discussion on future policy directions extremely well. It seems that the problems related to oral health and access differentials together with the relevant aspects of financing of dental care have been identified with care and analysed with appropriate caution. It is difficult to see what else could be added to the areas under Points 1 and 2 that would advance the arguments any further. As stated before, however, it is the area of policy direction that is the most difficult to pursue and ultimately, to achieve appropriate outcomes.

As mentioned, Spencer has directed his discussion around six policy areas. Clearly, it is the role of this paper to identify areas to progress rather than to detail the exact mechanisms for embarking on any one of the policies per se. The areas proposed by Spencer for policy direction are undeniable and essentially complete. However as all would acknowledge, the "devil is in the detail" when it comes to ensuring that

policy progress is made. From a public health perspective, as made clear by Spencer, water fluoridation is the key to reducing dental caries and must be expanded to those areas of Australia currently without access. In general, communities without exposure to water fluoridation are those who have the poorest levels of oral health and who are marginalised with respect to oral health services. There are political and social impediments to achieving this simple, effective and safe public health activity. Likewise barriers exist to implementing appropriate health promotion activities, revitalising existing public health dental services, reshaping funding and expanding the dental labour force. Some of these barriers to change are surmountable; others would appear to be insurmountable.

One, perhaps overly simplistic, way of considering mechanisms to overcome such barriers is by categorising them as internal or external. Internal barriers lie within the broader profession of dentistry and would include areas such as the reluctance of real partnerships between the private and the public sectors. For example, Spencer highlights the need for further incorporating private dental practitioners or practices into networks that deliver public dental care. Such initiatives could be introduced at the undergraduate level. Outplacement opportunities, currently predominately within the public sector might reasonably incorporate private practices as well. Such placements could link public with private services and promote sector cohesiveness within the undergraduate curricula not currently evident. Another example would encompass broadening the scopes of practice for non-dentist oral health professionals, particularly for services where access is poorest – rural areas, nursing homes etc. The mechanics of overcoming these internal barriers, by-and-large, can be put in place if the dental profession has the will to support them.

External barriers are produced by factors such as community commitment, legislative constraints and government willingness to place emphasis on redressing the access imbalance to oral health services. Overcoming these barriers requires a stronger voice and greater influence than is currently available. It is the overcoming of the

external barriers which are perhaps the most difficult and beyond our immediate control. They are also the barriers that if lowered, will make the greatest difference to oral health. Policy directions outlined in this paper by Spencer are clearly the way forward. The challenge is having them implemented.

In summary, it seems that Spencer has provided the best case yet for the need to lift the policy game. Without significant changes to the policies as outlined by Spencer, the current polarisation will continue. Many in the community will be unfairly served and exhibit oral health levels that are unacceptable by any measurements of health standards. There will be no words of praise when future societies look back with disbelief at how we allowed such inequities to continue unchallenged and unabated.

PROFESSOR ELI SCHWARZ

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John Spencer's report was titled "Increasing inequality in oral health and dental care in Australia". Its title now is "Narrowing the inequality gap in oral health and dental care in Australia".

I thought about this seemingly innocent semantics as I studied the issues illustrated so well by John Spencer's report. The original title may be perceived as an unemotional statement of fact in the traditional positivistic fashion. Yes, there is increasing inequality in oral health, and that's it, let's take a look. The new title can be perceived more like a cry to arms: without beating around the bush, how do we narrow the gap that we know exists? It reflects the problems we face as population health researchers, i.e. how to balance our professional sense of scientific responsibilities with our rising concerns and appreciations of where society is going and the cumulative scientific evidence of the negative effects this development has especially on subgroups of the population. Do we stay in our offices and run another multiple logistic regression analysis, or do we join the people on the barricades? Where are we used to the best of our abilities? I believe that John Spencer's report might first add to this frustration, but may also help us to further define the issues and the tasks ahead.

In this discussion, I would like to address three issues:

1. Is there an inequality gap in oral health in Australia, and if so,
2. Is Australia different from the rest of the world, and
3. What measures are suggested to narrow the gap and are they likely to succeed?

John Spencer presents a very strong case on the inequality gap in oral health in Australia. He underlines the broad definition of oral health as the opportunity to eat, speak and socialise without discomfort or embarrassment, and without active disease in the mouth which affects overall well-being. He goes on to document how an increasing

proportion of Australians cannot be characterised to fall under this definition. Sometimes, this development seems to have been an unintended consequence of a planning or policy decision (such as the indirect subsidy to dental care through the Commonwealth insurance program). But oftentimes, the development takes a while to materialise, before we can analyse the data to be certain of what is happening (such as the deteriorating oral health in pre-school children). It is a dire picture that is presented, indeed, which is of course further emphasised by the list of references indicating that Professor Spencer's unit is almost the only custodian of oral health data on Australians. Thus, there aren't competitive or contradictory data sets to challenge the overall impression presented in this report.

Being a newcomer to Australian population oral health and given that the present report very comprehensively covers the main issues of oral health, access to dental care, and financial arrangements for dental care I was curious whether 'Australia according to Spencer was unique to this country or whether he was in fact describing a pattern of inequality that was shared among other similar first-world countries. Five seminal and almost simultaneous reports from different countries/organizations will demonstrate the situation. There are other reports from individual countries that have developed a tradition for extensive publicly supported oral health packages indicating that similar developments are being observed (Peterson et al, 2004). Very similar patterns emanate from countries that Australia usually compares with, indicating serious shortcomings in the way oral health care has been planned and implemented, not only in Australia but in a number of countries across the globe.

In 2000, the U.S. Surgeon-General published the first-ever report on oral health in the American population (U.S. Department of Health Services, 2000). The report very comprehensively described a dramatic situation, where 'oral health, like general health, has improved dramatically in recent decades...However, not *all* Americans are achieving the same degree of oral health...What amounts to 'a silent epidemic of oral disease is affecting our most vulnerable citizens'. The

report goes on to identify the extensive disparities in oral health conditions and access to dental care that characterise the most vulnerable groups.

Around one-third of the American population (100 million people) are without dental insurance. It is a special coincidence that in Australia one-third of the population is eligible for the concession health card, which gives them access to public dental services.

The Surgeon-General's report has been further developed in the report, National Call to Action to Promote Oral Health (U.S. Department of Health Services, 2003), which has involved a wide range of stakeholders in oral health to identify strategies that will address the identified problems.

In 2001, the Australian Health Ministers' Conference published their final report, Oral Health of Australians (AHMC, 2001), which reported in almost the same terms as those of the Surgeon-General that Australians have made substantial gains in oral health, particularly in the reduced caries experience of children. This report has now recently been followed by Australia's National Oral Health Plan, which outlines suggested strategies for improving the situation in Australia.

In the British reports, Modernising NHS Dentistry - Implementing the NHS Plan (Department of Health, 2004) and NHS Dentistry: Delivering Change (Department of Health, 2004), the recent Chief Dental Officers report, very similar considerations have been outlined.

In its 2003 World Oral Health Report (Peterson, 2003), the World Health Organization adds a worldwide perspective stating that, given the extent of the problem, oral diseases are major public health problems. Their impact on individuals and communities as a result of pain and suffering, impairment of function, and reduced quality of life is considerable. Moreover, traditional treatment of oral disease is extremely costly, the fourth most expensive disease to treat in most industrialised countries. In many low-income countries, if treatment

was available, the costs of dental caries alone in children would exceed the total health care budget for children.

Addressing inequalities

In a very simple sense, inequality is a socio-economic phenomenon linked to human society. In different societies it manifests itself in different ways, but it is always about one part of the population, which is perceived to be less fortunate in terms of education, jobs, income capacity, racial background, religious conviction, home ownership, physical and mental well-being or lifestyle choices compared to more successful groups. Today, we are discussing a report on oral health. Yesterday it could have been a report on smoking or on teenage pregnancies and tomorrow on diabetes. The topic is dependent on the group of specialists and 'their' specific inequality issue. Very little literature attempts to draw lines between the different health or socio-economic issues to illustrate to what extent the same people in the population come out in the inequality equation on all the different variables. As aptly stated by Peterson (2003), 'A core group of modifiable risk factors is common to many chronic diseases and injuries. The four most prominent non-communicable diseases – cardiovascular diseases, diabetes, cancer, and chronic obstructive pulmonary diseases – share common risk factors that are related to lifestyle...The greatest burden of all diseases is on the disadvantaged and socially marginalised. A major benefit of the common risk factor approach is the focus on improving health conditions for the whole population as well as for high risk groups, thereby reducing inequities'. This is an important pointer for choosing the most beneficial way forward to solve these problems.

Table 1.

Strategic directions for action as expressed by selected national/global oral health reports

<u>Narrowing the inequality gap in oral health and dental care in Australia (AUS)</u>	<u>Australia's National Oral Health Plan (AUS)</u>	<u>National Call to Action to Promote Oral Health (US)</u>	<u>NHS Dentistry: Delivering Change (UK)</u>	<u>The World Oral Health Report (WHO)</u>
Extend the coverage of water fluoridation	Promote oral health across the population	Change perceptions of oral health	Improve access and oral health for patients	Reduce the burden of oral disease and disability, especially in poor and marginalised populations
Engage in health promotion	Children and adolescents	Overcome barriers by replicating effective programs and proven efforts	Focus on preventing disease	Promote healthy lifestyles and reduce risk factors for oral health that arise from environmental, economic, social, and behavioural causes

Revitalise the school dental services	Older people	Build the science base and accelerate science transfer	Reform practice arrangements with dentists	Develop oral health systems that equitably improve oral health outcomes, respond to people's legitimate needs, and are financially fair
Reform the public dental services	Low income and social disadvantage	Increase oral health workforce diversity, capacity, and flexibility		Integrate oral health policies into national and community health programmes
Reshape funding arrangements for public dental care	People with special needs	Increase collaborations		
Expand the dental labour force	Aboriginal and Torres Strait Islander people			
	Workforce development			

John Spencer suggests addressing the documented inequalities through a range of activities. In Table 1, I have juxtaposed Spencer's summarised action areas with those of the other reports previously

mentioned, because it gives a fascinating picture of a worldwide trend of differently phrased strategic actions, which nonetheless are very similar in substance and focus. Due to space limitations, only summarised statements are tabulated. The four broad themes suggested by Australia's National Oral Health Plan are a reasonable way to summarise all these diverse ambitions:

- Recognition that **oral health is an integral part of general health**;
- Application of a **population health approach**, with a strong focus on promoting health and the prevention and early identification of oral disease;
- Providing **access** to appropriate and affordable services – health promotion, prevention, early intervention and treatment – for all Australians; and
- Securing **education** to achieve a sufficient and appropriately skilled workforce, and communities that effectively support and promote oral health.

This underlines the necessity to broaden our approach to find solutions. It is unlikely that the focus areas outlined by Spencer can or should be addressed in isolation. It should also be realised that neither the oral health care system nor any other part of the health care or social service systems easily traverses traditional borders to engage in cross-disciplinary or multidisciplinary activities, even when it is evident that it would be beneficial to the population that we serve.

Towards the end of Spencer's report one brief sentence is provided that to me gives the essence of the necessary direction of action: Spencer states, 'Even with the best of intentions little will be achieved in reducing inequalities in oral health and access to dental care without substantial additional public subsidy'. Whereas I entirely agree with this statement I also realise that if this is considered a *conditio sine qua non* we may never experience further progress, simply because an unconditional demand for more resources in a post-election reality check may put dental concerns at the end of the line. I think it is

important to continue to point out where resources are needed, but I am also ready to assist 'The System' to identify potential re-prioritisations and re-directions which may improve certain conditions for certain groups.

Finally, it is important to emphasise that system-wide/country-wide changes will always be more ominous and resource demanding than suggestions for limited pilot or demonstration schemes, which can assist researchers and decision makers to define and refine issues on the basis of sound evaluation. We need to establish evidence of the positive outcome of major system revisions before committing major funding streams, although this is time consuming. Using this approach we might achieve evidence and a more politically acceptable solution at the same time. Means over ends or ends over means?

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