7 Demand for dental visits: impact of changes in key inputs

This section investigates the potential outcome of various policy directions by examining the impact of changes in key inputs or shifts in existing trends on demand projections for dental visits. Per capita demand (PCD) is the product of the percentage accessing dental care in the previous 12 months and the mean number of visits made by those accessing. The various scenarios presented in the following sections assess the impact if either or both of these factors were to alter. The sensitivity of demand projections to various changes is assessed by comparing alternative scenarios against what is referred to as the 'no PCD growth' projection. The 'no PCD growth' projection and its inputs are described in section 4.1.

7.1 Shifts in patterns of accessing dental care

Access to dental care

The percentage of dentate persons accessing dental care in the last 12 months is a key indicator of access to dental care and is a measure of recentness of the last visit. Accessing dental care annually is a well-known recommendation by the dental profession. Some of those visits will be for a check-up, while others will be to receive treatment to resolve a problem.

Over the last decade the percentage of dentate persons accessing dental care has increased marginally. In 1996 the percentage of dentate persons reporting that they had visited a dental provider in the previous 12 months was 61.8%; this increased marginally to 65.2% by 2005.

The percentage accessing dental care varies by age group; in 2005 dentate persons in the two age groups aged 17 years or younger had the highest percentages accessing dental care in the previous 12 months (82.7% and 78.9%). The percentage accessing dental care declined substantially in early adulthood (18 to 34 years of age) and increased among older adults, with 55–64-year-olds having the highest percentage (69.6%) of the adult age groups, visiting in the previous 12 months (Figure 20). For dentate people of all ages, 9.0% had not visited in the last 5 years (including those who had never visited).

	5–11	12–17	18-24	25-34	35-44	45-54	55-64	65-74	75+
1996	80.8	76.1	49.9	49.9	58.1	61.6	66.9	63.2	64.8
2005	82.7	78.9	58.3	50.1	60.2	66.9	69.6	67.6	65.9

Age group (years)
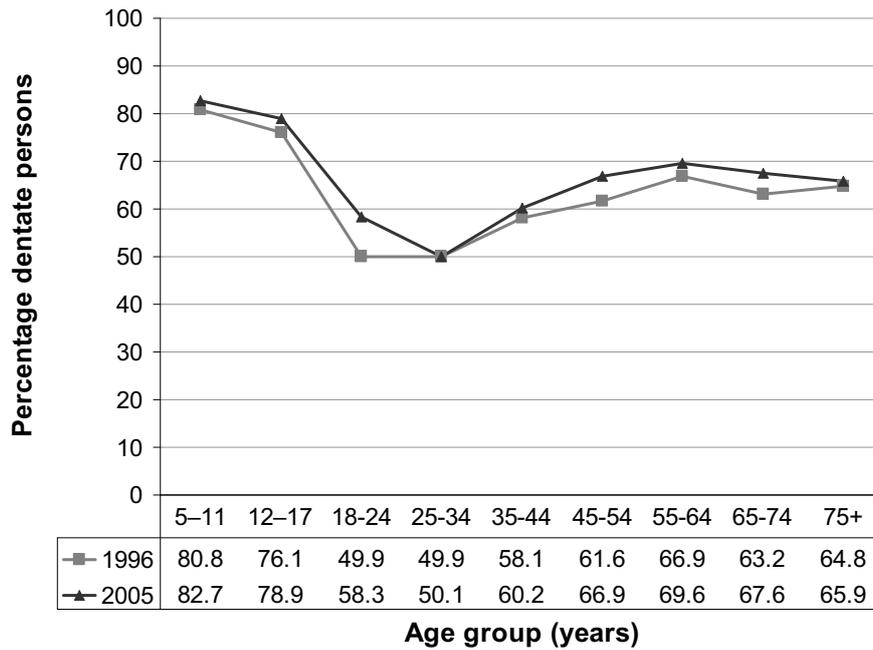
Sources: NDTIS 1996, 2005.

Figure 20: Percentage dentate persons accessing dental care in the last 12 months, 1996 and 2005

In 2005, of those dentate persons who had visited in the last 12 months nearly two-thirds (61.2%) cited 'check-up' as the reason for their last visit and over one-third (38.8%) cited that their reason for last visit was for a problem.

Among edentulous persons, 19.8% had made a dental visit in the previous 12 months and nearly half (44.9%) had not visited in the last 5 years.

Various policy directions could potentially influence patterns of access; barriers to access such as affordability and regional maldistribution of providers could be addressed via government oral health policy initiatives. The proposed sections examine the impact on demand projections if levels of access to dental care were to alter. The following scenarios examine the impact on total demand by varying access among dentate persons only; demand by edentulous persons is not altered as they are a small component of total demand. The impact of altering access for persons under 18 years of age is not examined as this group, at a population level, has high levels of access and therefore it is unlikely that changes in levels of access for this group would make substantial differences.

Impact if dentate persons not currently accessing dental care gain access

This scenario tests the sensitivity of the demand projection model if dentate persons not accessing care in the previous 12 months were to access care at half the rate and one-quarter the rate of those who had accessed in the previous 12 months.

For example, in 2005, 65.9% of dentate persons 75 years or older made an average of 2.32 dental visits in the previous 12 months. Under this scenario the additional demand for visits by dentate persons 75 years or older would be calculated by multiplying the remaining 34.1% of persons in that age group by 1.16 visits (50% of 2.32 visits) and 0.58 visits (25% of 2.32 visits).

If those not currently accessing care in a 12 month period were to access care at a quarter the rate of those accessing, then the estimated demand for dental visits by 2020 would be 37.89 million visits, 12.9% more than demand under the 'no PCD growth' scenario. For the scenario of increased access at half of the average number of visits, total demand in 2020 would be 25.9% higher than projected demand under the 'no PCD growth' scenario (Table 19).

Table 19: Projected demand for dental visits if access increased for dentate persons currently not accessing care in a 12-month period, 2005, 2010, 2015 and 2020

Scenario	2005	2010	2015	2020	Per cent increase over 'no PCD growth' projection
	Number of visits (millions)				
'No PCD growth' projection	28.21	30.01	31.76	33.55	. .
Increased access, 25% of average number of visits	31.82	33.85	35.86	37.89	12.9
Increased access, 50% of average number of visits	35.44	37.70	39.95	42.24	25.9

Impact of increased access to dental care by dentate adults aged 18 to 54 years

Dentate persons in the 18 to 54 years age groups typically have lower rates of accessing dental care than other age groups. Hence this scenario tests the sensitivity of the demand projection model if an increased percentage of dentate persons aged 18 to 54 years accessed care in a 12-month period.

For example, in 2005, 58.3% of dentate persons aged 18 to 24 years accessed dental care in the previous 12 months. Under this scenario the additional demand for visits by dentate persons in this age group would be calculated by multiplying an additional 10% and 20% of persons by the average number of visits (2.18 visits) made by those currently accessing care in a 12-month period.

In comparison to the 'no PCD growth' projection, demand for dental visits in 2020 would increase by 7.8% if an additional 10% of dentate persons aged 18 to 54 years accessed dental care, and by 15.6% if an additional 20% accessed care (Table 20).

Table 20: Projected demand for dental visits if access increased for dentate persons aged 18 to 54 years, 2005, 2010, 2015 and 2020

Scenario	2005	2010	2015	2020	Per cent increase over 'no PCD growth' projection
	Number of dental visits (millions)				
'No PCD growth' projection	28.21	30.01	31.76	33.55	. .
Additional 10% of dentate persons aged 18 to 54 years accessing care in 12-month period	30.60	32.49	34.32	36.17	7.8
Additional 20% of dentate persons aged 18 to 54 years accessing care in 12-month period	32.99	34.97	36.88	38.78	15.6

Impact of increased access to dental care by dentate adults aged 55 years or older

In 2005, persons 55 years or older comprised 24% of the total population, and this is projected to increase to 31% by 2020. In addition, the proportion of edentulous persons in this age group is projected to decline, from 19.5% in 2005 to 11.0% in 2020.

Despite overall PCD remaining relatively stable over the last decade, there have been incremental increases in demand for dentate persons aged 55 years or older. Furthermore, dentate baby boomers will have more teeth to maintain than dentate persons in this age group in previous decades (Slade et al. 2007). Therefore, apart from the consequences of any shifts in oral health policy aimed at influencing access for this age group, it appears likely that demand will continue to grow in this age group. Hence, this scenario aims to test the sensitivity of the demand projection model if an increased percentage of dentate persons aged 55 years or older accessed care in a 12-month period.

For example, in 2005, 69.6% of dentate persons aged 55 to 64 years accessed dental care in the previous 12 months. Under this scenario the additional demand for visits by dentate persons in this age group would be calculated by multiplying an additional 10% and 20% of persons by the average number of visits (2.45 visits) made by persons currently accessing care in a 12-month period in this age group.

In comparison to the 'no PCD growth' projection, demand for dental visits in 2020 would increase by 4.7% if an additional 10% of dentate persons aged 55 years or older accessed dental care, and by 9.4% if an additional 20% accessed care (Table 21).

Table 21: Projected demand for dental visits if access increased for dentate persons aged 55 years or older, 2005, 2010, 2015 and 2020

Scenario	2005	2010	2015	2020	Per cent increase over 'no PCD growth' projection
		Number of dental visits (millions)			
'No PCD growth' projection	28.21	30.01	31.76	33.55	. .
Additional 10% of dentate persons aged 55+ years accessing care in 12-month period	29.15	31.13	33.10	35.14	4.7
Additional 20% of dentate persons aged 55+ years accessing care in 12-month period	30.09	32.26	34.45	36.72	9.4

7.2 Changes in levels of dental insurance coverage

In 2005, 46.9% of dentate Australians held dental insurance. Per capita demand rates for dentate persons were substantially higher for insured persons in all age groups (Figure 21).

Age group (years)	5–11	12–17	18-24	25-34	35-44	45-54	55-64	65-74	75+
Insured	1.77	2.82	1.66	1.37	1.53	1.79	1.97	1.99	2.00
Uninsured	1.53	1.65	1.01	1.03	1.16	1.24	1.40	1.32	1.27

Source: NDTIS 2005.

Figure 21: Dentate per capita demand by insurance status and age group, 2005

Dental demand and supply in Australia
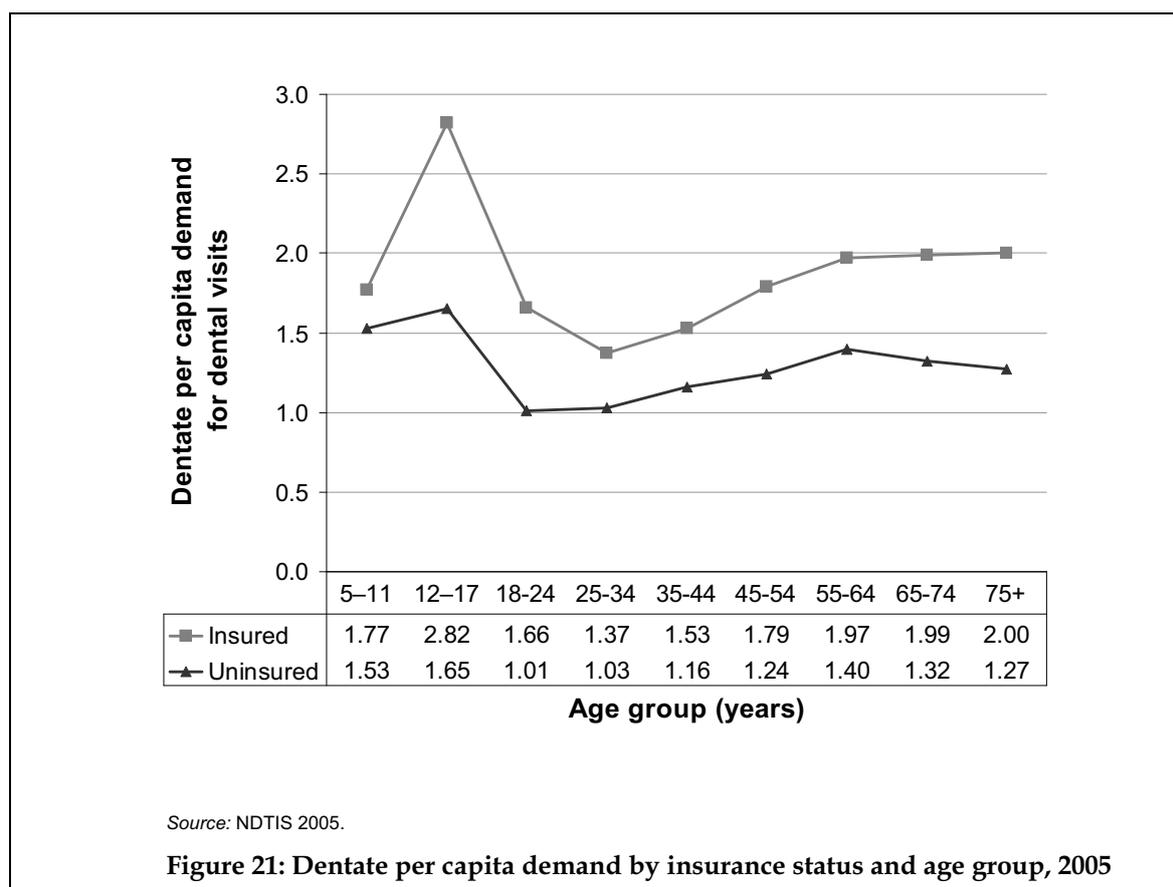
Although demand varies by insurance status, there is no evidence in Australia to suggest that the patterns of consumption would change greatly if an insured person were to become uninsured or the converse. The rebate recovered by insurance leaves a considerable gap, averaging only 49% of costs incurred (Slade et al. 2007). Access to dental care is associated with both income and insurance status, and insurance status is also associated with income; therefore, cross-sectional associations between access to dental care and dental insurance are confounded by income and not necessarily causal (Carter & Stewart 2003).

In the period 1998 to 2000 an additional 13% of Australians gained hospital insurance coverage, an increase of 39%. This increase was related to the federal *Private Health Insurance Incentives Act 1998* (30% rebate) and the introduction of Lifetime Community Rating in 1999 (Butler 2002). Since those policy initiatives, the percentage of persons covered by health insurance has remained relatively stable; however, it is not inconceivable that new policy initiatives may influence levels of insurance coverage in the future.

Although it is unknown whether a dramatic change in the level of dental insurance coverage would result in a shift in access patterns, this scenario examines the potential impact if levels of dental insurance coverage were to alter.

Impact if dental insurance coverage decreased/increased

In this scenario the impact of changes in levels of insurance coverage is assessed by assuming that if an uninsured person were to become insured their PCD would be the same as a currently insured person in the same age group. Similarly, if an insured person was to become uninsured, their PCD would decline to the demand of an uninsured person. Demand for visits by edentulous persons was not recalculated.

If an additional 10% of dentate persons gained dental insurance, demand for dental visits in 2020 would be 4.1% greater than the level of demand projected under the 'no PCD growth' scenario, while if insurance coverage was to fall by 10%, demand would be lower by 3% (Table 22).

Table 22: Projected demand for dental visits if dental insurance coverage altered, 2005, 2010, 2015 and 2020

Scenario	2005	2010	2015	2020	Per cent increase over 'no PCD growth' projection
		Number of dental visits (millions)			
'No PCD growth' projection	28.21	30.01	31.76	33.55	. .
Insurance coverage increased (+10%)	29.38	31.25	34.00	34.94	4.1
Insurance coverage decreased (−10%)	27.42	29.16	31.69	32.56	-3.0

7.3 Increased access to dental care by regional dwellers

In 2005, 37.8% of the population lived outside capital city areas (as defined by ABS statistical divisions). Differences in oral health status of regional versus metropolitan dwellers has been well documented; for example, in 2005 the percentage of edentulous persons in regional areas was higher than in capital city areas (9% compared to 5%) (Slade et al. 2007)

Access to dental care also varies by geographic location. Those in 'urban' areas are more likely to have made a dental visit in the previous 12 months than 'rural' or 'remote' dwellers. In 2002, 58.2 % of dentate adults (aged 18 years or older) had visited a dental provider in the last 12 months compared to 53.1% for 'rural' dwellers and 50.5% for 'remote' dwellers (AIHW DSRU 2005).

Per capita demand of dentate persons living in capital city locations was higher in all groups compared with those living in regional locations (Figure 22).

	5–11	12–17	18-24	25-34	35-44	45-54	55-64	65-74	75+
Regional	1.55	1.90	1.17	1.13	1.24	1.38	1.42	1.54	1.28
Capital city	1.70	2.35	1.31	1.15	1.38	1.65	1.87	1.69	1.67

Age group (years)

Source: NDTIS 2005.

Figure 22: Dentate per capita demand by location of dwelling, 2005
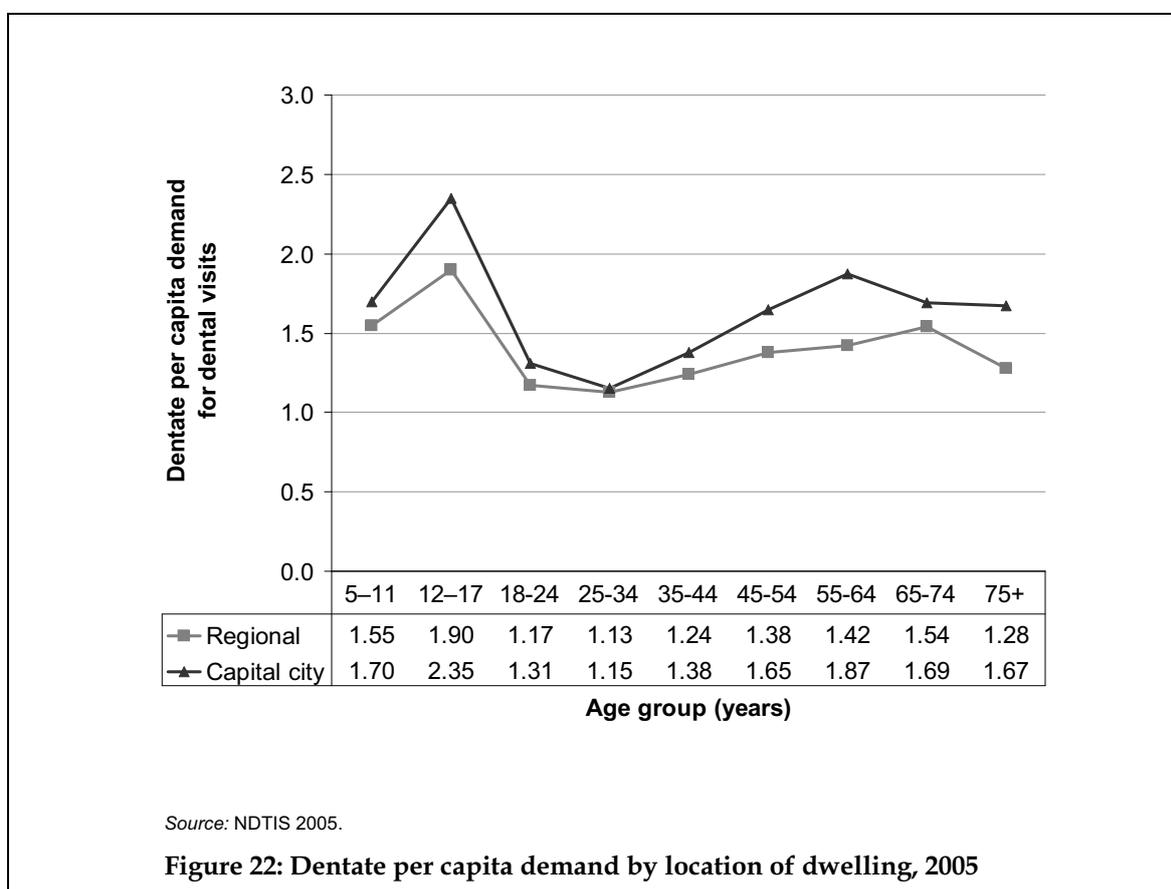
Impact if access for regional dwellers increased

This scenario attempts to estimate the impact on demand projections if regional dwelling dentate persons were to access dental care at the same rate as dentate persons living in capital cities.

This was calculated by multiplying the PCD for dentate persons residing in capital city areas in a given age group by all dentate persons in that age group. Compared to the projected growth under the 'no PCD growth' scenario, the increased access for regional dwellers scenario resulted in an additional 5.4% demand for dental visits in 2020 (Table 23).

Table 23: Projected demand for dental visits if regional dwelling dentate persons accessed dental care at the same rate as those in capital city areas, 2005, 2010, 2015 and 2020

Scenario	2005	2010	2015	2020	Per cent increase over 'no PCD growth' projection
		Number of visits (millions)			
'No PCD growth' projection	28.21	30.01	31.76	33.55	. .
Regional dwellers increase access to same level as capital city dwellers	29.66	31.59	33.44	35.36	5.4

7.4 Summary

Two aspects of dental visiting influence the PCD for visits—the percentage accessing dental care in the previous 12 months and the mean number of visits made by those accessing. The various scenarios presented in the preceding sections assessed the impact if either or both of these factors were to alter. The projected demand in 2020 is compared under three different assumptions of growth in PCD and by the various scenarios assessed in the preceding sections (Figure 23).

The demand projections were very sensitive to differing assumptions of growth in PCD. The greatest impact was observed under the 'continued PCD growth' scenario, where PCD was assumed to continue growing from 2005 at the same rate of growth observed from 1979 to 1995.

Substantial increases in demand above the 'no PCD growth' scenario were observed in the scenarios which examined the impact if all dentate persons currently not accessing care in a 12-month period were to access care at 25% and 50% of the rate of those currently accessing.

The demand projection model was least sensitive to changes in levels of insurance coverage, which assumed that if an uninsured dentate person gained insurance they would demand at the same rate as those currently insured.

With the exception of the scenario of increased access for all dentate persons at 50% of the rate of those currently accessing, all scenarios assessed resulted in demand greater than the 'no PCD growth' but less than the 'half PCD growth scenario'. It could be argued that some of these scenarios have a high likelihood of occurring regardless of any changes in oral health policy. The scenarios replicate the sort of changes that led to the high increases in PCD in the period 1979 to 1995. If several of these scenarios were to occur the 'half PCD growth' projection would be a likely outcome. Consequently demand would exceed the standard supply projection by approximately 5 million visits per year from 2020; this equates to an approximate short fall of 1,800 to 1,900 dental practitioners (on the basis of current productivity levels).

Notes

1. The 'no PCD growth' model keeps age-specific demand for dental visits constant and therefore represents the increase due solely to changes in population, demographic changes and changes in the rate of edentulism. 'Continued PCD growth' assumes that demand increases at the same rate as that observed between 1979 and 1995.

2. The standard supply projection estimates that supply capacity will be 33.7 million visits by 2020. For details of the inputs and assumptions of the standard supply projection see Section 3.4 and Appendix B.

Figure 23: Projected demand for dental visits in the year 2020 by projection scenario