

**D**ental caries (tooth decay) has been estimated to be the most prevalent health problem in Australia (AIHW 2000). Oral diseases can lead to infection and tooth loss, and may be associated with pain and discomfort, eating difficulties and problems with speech, communication and socialising (AIHW 2002). Persons eligible for public dental care are holders of government health cards, such as the unemployed and aged pensioners. These card-holders represent a financially disadvantaged group of adults within the Australian population. While adults in general have benefited from improved oral health in terms of reductions in tooth loss, public dental patients remain a group who are reported to have high levels of emergency care and associated higher levels of tooth extraction (DSRU, 1993).

This report describes the caries experience of public dental patients by age, sex and type of visit based on a total of 2,746 dental patients who were examined by the dental authorities in four States/Territories of Australia, providing a representative sample of the public dental patients they treated during the 2001–02 period.

## Patient and visit characteristics

The distributions of sex of patient and visit type are presented in Table 1 by age group. Both male and female patients had similar age distributions, with the highest percentage of patients in the 25–44 years age group. Emergency care had a higher percentage of patients in younger age groups (e.g., 10.1% were aged 18–24 years compared with 3.3% for general care).

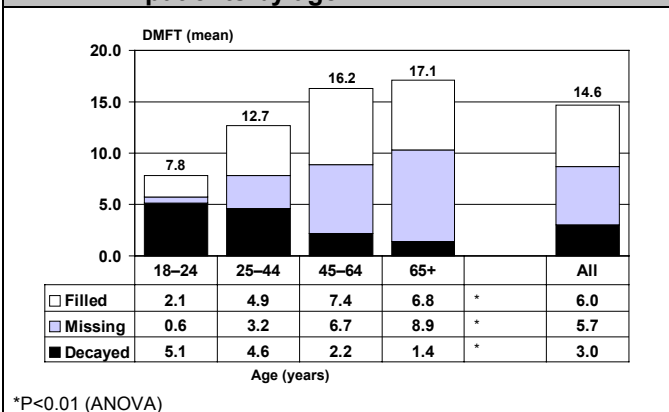
Age group	Sex of patient		Visit type	
	Male	Female	Emergency	General
18–24 years	7.1	6.9	10.1	3.3
25–44 years	33.5	36.8	40.2	29.5
45–64 years	27.1	29.9	26.5	31.5
65+ years	32.3	26.4	23.2	35.7

Note: The data in this table relate to dentate persons aged 18 years or more.

## Caries by age of patient

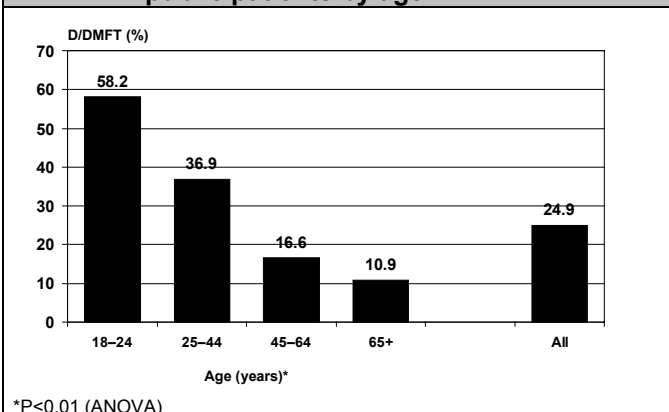
Experience of caries or dental decay can be measured as the number of untreated decayed teeth (D), missing teeth (M) extracted due to caries, and filled teeth (F) restored due to caries. Figure 1 shows the mean number of decayed, missing and filled teeth (i.e., DMFT = D+M+F) by age of patient. Caries experience accumulates across age groups from 7.8 among 18–24-year-olds to 17.1 among 65+ year-olds.

**Figure 1: Caries experience (DMFT) among public patients by age**



The number of decayed teeth can be divided by the number of decayed, missing and filled teeth, and converted to a percentage to get a relative measure of the extent of total caries experience that is untreated decay rather than missing or filled teeth. Figure 2 shows that the percentage of decayed teeth is highest among younger patients (58.2%) and lowest among older patients (10.9%).

**Figure 2: Percent decayed teeth (D/DMFT) among public patients by age**

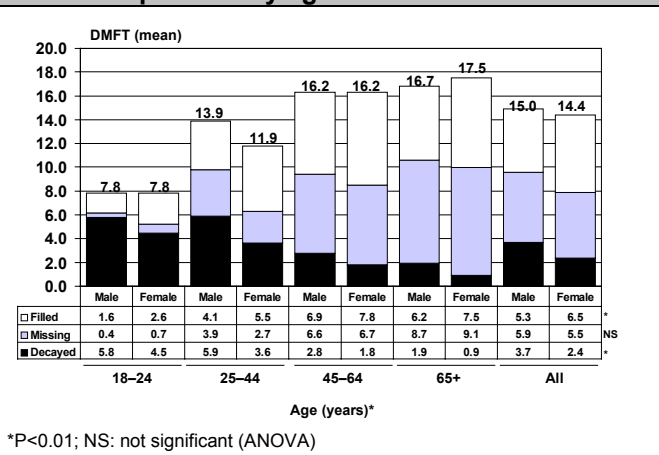


### Caries by age and sex of patient

Figure 3 further examines caries experience by age and sex of patient. While DMFT showed the characteristic pattern of accumulating across older age groups, with decayed teeth peaking among younger age groups and missing teeth increasing across older age groups, there was little difference in DMFT by sex of patient.

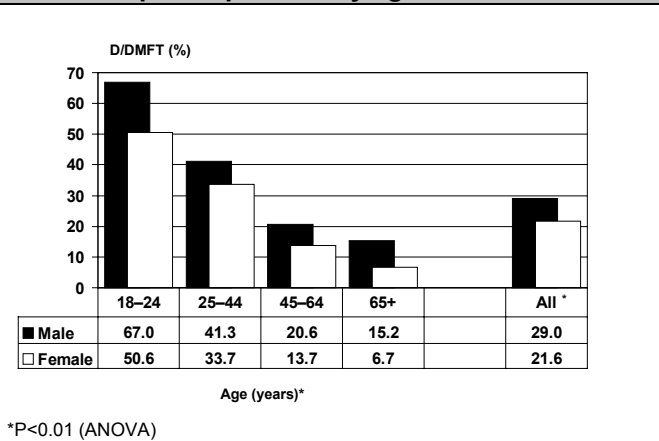
However, numbers of decayed teeth were consistently higher in each age group among male compared with female patients, and filled teeth were consistently higher among female compared with male patients.

**Figure 3: Caries experience (DMFT) among public patients by age and sex**



Percent of decayed teeth is presented in Figure 4 by age and sex of patient. Both male and female patients showed the characteristic pattern of higher percentages of decayed teeth among younger age groups. Males had a higher percentage of decayed teeth (29.0%) than females (21.6%), and showed a consistent pattern of a higher percentage of decayed teeth in each age group.

**Figure 4: Percent decayed teeth (D/DMFT) among public patients by age and sex**

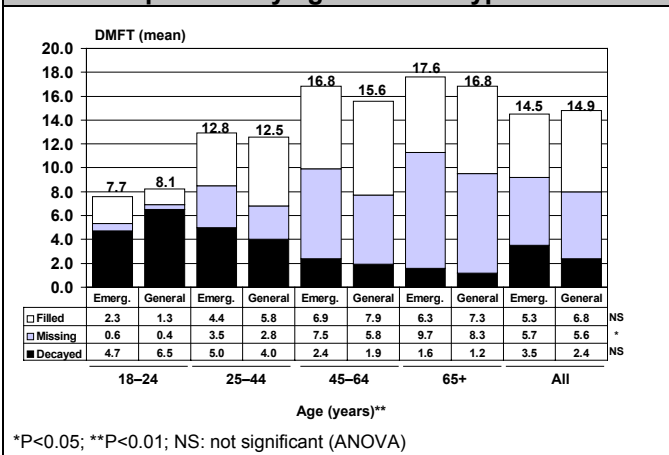


### Caries by age and visit type

There was little difference between emergency and general patients in DMFT overall and within each age group (Figure 5), with both emergency and general patients exhibiting the characteristic accumulation of caries experience with age.

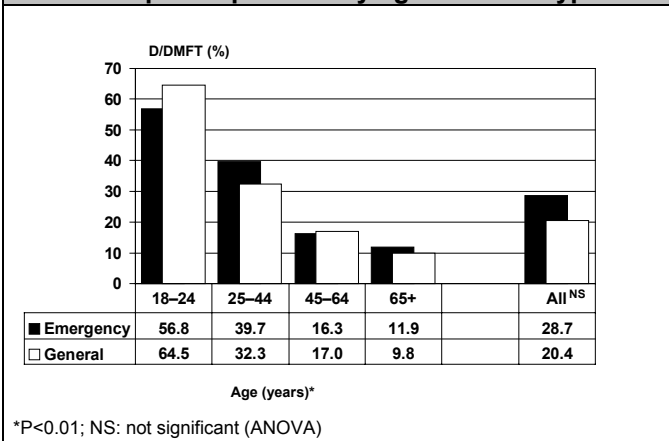
Decayed teeth failed to show a consistent pattern by visit type across age groups, with the highest level of decayed teeth observed among 18-24-year-old general patients, indicating that among public patients this age group has high levels of decay regardless of visit type. However, emergency patients did show consistently higher levels of missing teeth than general patients in each age group.

**Figure 5: Caries experience (DMFT) among public patients by age and visit type**



While both emergency and general patients showed the characteristic pattern of higher percentages of decayed teeth among younger age groups (Figure 6), there was little difference between emergency and general patients among patients aged 45 years and older and no consistent differences among younger patients.

**Figure 6: Percent decayed teeth (D/DMFT) among public patients by age and visit type**



## Root caries

The mean number of decayed tooth roots is presented in Table 2 by sex of patient, visit type and age group. Decayed tooth roots peaked among patients aged 25–44 years overall and for both male and female patients, and for emergency and general patients. Numbers of decayed tooth roots were higher for male compared with female patients and for emergency compared with general patients overall, and were consistently higher in each age group for males and for emergency patients.

**Table 2: Decayed tooth roots (mean): by sex, visit type and age group**

	Age group (years) **				Total
	18–24	25–44	45–64	65+	
<b>Sex*</b>					
Male	0.32	0.70	0.24	0.31	<b>0.43</b>
Female	0.28	0.41	0.16	0.20	<b>0.27</b>
<b>Visit type**</b>					
Emergency	0.38	0.69	0.20	0.32	<b>0.44</b>
General	0.01	0.29	0.19	0.21	<b>0.22</b>
<b>Total</b>	<b>0.30</b>	<b>0.54</b>	<b>0.19</b>	<b>0.25</b>	<b>0.34</b>

\*P<0.05; \*\*P<0.01 (ANOVA)

Note: The data in this table relate to dentate persons aged 18 years or more.

The mean number of filled tooth roots is presented in Table 3 by sex of patient, visit type and age group. While the number of filled tooth roots was lowest in the youngest age group, there was little variation in the number of filled tooth roots between age groups older than 18–24 years. There was also little difference in filled tooth roots by sex of patients or by type of visit.

**Table 3: Filled tooth roots (mean): by sex, visit type and age group**

	Age group (years) <sup>NS</sup>				Total
	18–24	25–44	45–64	65+	
<b>Sex <sup>NS</sup></b>					
Male	0.03	0.09	0.21	0.29	<b>0.18</b>
Female	0.00	0.29	0.19	0.21	<b>0.22</b>
<b>Visit type <sup>NS</sup></b>					
Emergency	0.02	0.25	0.26	0.30	<b>0.17</b>
General	0.00	0.16	0.14	0.22	<b>0.24</b>
<b>Total</b>	<b>0.01</b>	<b>0.21</b>	<b>0.20</b>	<b>0.25</b>	<b>0.21</b>

NS: not significant (ANOVA)

Note: The data in this table relate to dentate persons aged 18 years or more.

The mean number of decayed and filled tooth roots is presented in Table 4 by sex of patient, visit type and age group. Numbers of decayed and filled tooth roots consistently peaked among patients aged 25–44 years.

Although male patients tended to have higher numbers of decayed and filled tooth roots than female patients, the differences were small in magnitude. In contrast, there were clearer differences by type of visit, with a higher number of decayed and filled tooth roots among emergency compared with general patients. Emergency patients consistently had higher numbers of decayed and filled tooth roots in each age group.

**Table 4: Decayed and filled tooth roots (mean): by sex, visit type and age group**

	Age group (years) *				Total
	18–24	25–44	45–64	65+	
<b>Sex <sup>NS</sup></b>					
Male	0.35	0.79	0.45	0.61	<b>0.61</b>
Female	0.28	0.70	0.35	0.40	<b>0.49</b>
<b>Visit type*</b>					
Emergency	0.39	0.94	0.46	0.62	<b>0.68</b>
General	0.01	0.45	0.33	0.42	<b>0.39</b>
<b>Total</b>	<b>0.31</b>	<b>0.75</b>	<b>0.39</b>	<b>0.51</b>	<b>0.55</b>

\*P<0.01; NS: not significant (ANOVA)

Note: The data in this table relate to dentate persons aged 18 years or more.

## Adult Dental Programs Survey

The Adult Dental Programs Survey is a random sample of patients attending for public-funded dental care. Data were collected on oral health status, patient characteristics, visit details and services provided.

Oral health was assessed by dentists during the initial visit of a course of care. Written instructions were used, but there was no formal calibration of dentists in diagnostic criteria.

Instructions for coding caries experience were based on the US National Institute of Dental Research (NIDR 1987) scoring system for coronal and root caries. Dentists were instructed to evaluate oral health status using visual and tactile information alone, in conjunction with the definitions supplied.

Visit type was classified as 'emergency' if the course of care was initiated for relief of pain; otherwise visit type was classified as 'general'.

Data were weighted using the estimated number of persons whose last dental visit was public-funded within the last year for persons aged 18 years or more from the National Dental Telephone Interview Survey 1999. These weighted data are representative of the number of adults receiving public-funded dental care for each participating State/Territory.

## Scope of data

This report is based on data collected on 2,746 patients in 2001–02 by the dental authorities in New South Wales (n=733), Queensland (n=533), Western Australia (n=1,197) and Northern Territory (n=283).

Sample size estimates were based on measures of oral health status from the 1995–96 Adult Dental Programs Survey (Brennan & Spencer 1997). To achieve estimates of key outcome variables with a precision of 20% relative standard error or less, target yields were set of 324 patients in smaller States (Tasmania) and Territories and 648 patients in mainland States. While the obtained sample yields varied between localities, limiting disaggregations in some specific localities, the total sample yield across all localities exceeded the target, thereby providing a sufficient sample size to achieve the desired level of precision.

Estimates based on users of dental services are by definition restricted to those persons who were able to access dental care and therefore may not necessarily be representative of the population eligible for public dental services who did not access public dental care during the survey period.

## Summary

### Coronal caries experience

- Caries experience accumulated across age groups from 7.8 among 18–24-year-olds to 17.1 among 65+-year-olds.
- The percentage of decayed teeth was highest among younger patients (58.2%) and lowest among older patients (10.9%).
- There was little difference in caries experience by sex of patient (DMFT=15.0 for males and 14.4 for females).
- The number of decayed teeth was higher among male (3.7) compared with female patients (2.4).
- The number of filled teeth was higher among female (6.5) compared with male patients (5.3).
- Males had a higher percentage of decayed teeth (29.0%) than females (21.6%).
- There was little difference in caries experience between emergency (DMFT=14.5) and general patients (DMFT=14.9).

### Root caries

- Decayed tooth roots peaked among patients aged 25–44 years (0.54) and were higher for male (0.43) compared with female patients (0.27), and for emergency (0.44) compared with general patients (0.22).
- Numbers of decayed and filled tooth roots peaked among patients aged 25–44 years (0.75), and were higher for emergency (0.68) compared with general patients (0.39).

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This research was assisted by the Population Health Division of the Commonwealth Department of Health and Ageing. The Adult Dental Programs Survey was collected in collaboration with the dental authorities in the participating States/Territories of Australia.

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