



*J. Armfield*  
*K. Roberts-Thomson*  
*G. Slade*  
*J. Spencer*

# The Child Dental Health Survey, Western Australia 2000

AIHW Catalogue No. DEN 121

AUSTRALIAN RESEARCH CENTRE  
FOR POPULATION ORAL HEALTH

The Australian Institute of Health and Welfare (AIHW) is Australia's national health and welfare statistics and information agency. The Institute's mission is to improve the health and well-being of Australians by informing community discussion and decision making through national leadership in developing and providing health and welfare statistics and information.

The AIHW Dental Statistics and Research Unit (DSRU) is a collaborating unit of the AIHW established in 1988 at The University of Adelaide. The DSRU aims to improve the oral health of Australians through the collection, analysis and reporting of information on oral health and access to dental care, the practice of dentistry and the dental labour force in Australia.

### **Suggested citation**

Armfield JM, Roberts-Thomson KF, Slade G (2003). *Child Dental Health Survey, Western Australia 2000*. Adelaide: The University of Adelaide.

### **Acknowledgments**

The data used for this report were collected in collaboration with Dental Services, Health Department of Western Australia. The support of the service and its staff was crucial to the successful reporting of results for this survey.

Any comments or information relevant to the subject matter of this report would be welcome. Correspondence should be directed to:

The Director  
AIHW Dental Statistics and Research Unit  
The University of Adelaide  
SOUTH AUSTRALIA 5005

Tel: (08) 8303 4051

Fax: (08) 8303 4858

E-mail: [aihw.dsru@adelaide.edu.au](mailto:aihw.dsru@adelaide.edu.au)

Website: <http://www.adelaide.edu.au/socprev-dent/dsru>

### **Board Chairperson**

Dr Sandra Hacker

### **Director**

Dr Richard Madden

# Contents

Purpose of this report.....	1
Source of subjects and sampling.....	1
Data preparation.....	1
Data analysis .....	1
Demographic composition of the sample .....	4
Deciduous teeth .....	5
Permanent teeth.....	8
All teeth.....	10
Fissure sealants .....	11
School Dental Service examinations .....	12
Percentage of children with dmft = 0, DMFT = 0 and d+D ≥ 4.....	13
Caries experience by geographical location.....	14

# Tables

Table 1: Sample size and assigned weight by Health Zone.....	4
Table 2: Demographic composition of the sample.....	5
Table 3: Deciduous teeth – decayed, missing and filled teeth by age .....	6
Table 4: Deciduous teeth – caries experience indices by age.....	6
Table 5: Permanent teeth – decayed, missing and filled teeth by age.....	8
Table 6: Permanent teeth – caries experience indices by age.....	9
Table 7: All teeth – age-specific experience .....	10
Table 8: Fissure sealants – age-specific experience .....	11
Table 9: School Dental Service examinations – age-specific distribution .....	12
Table 10: School Dental Service examinations – time since last visit .....	13
Table 11: Deciduous caries experience for 5–6-year-old children by Health (Analysis) Zone .....	14
Table 12: Permanent caries experience for 12-year-old children by Health (Analysis) Zone .....	15

## Figures

Figure 1:	Western Australia Health (Analysis) Zones.....	2
Figure 2:	Percentage of children by region for sample and Western Australian population (aged 5–14).....	3
Figure 3:	Percentage of dmft score represented by decayed, missing and filled components.....	7
Figure 4:	Percentage of DMFT score represented by decayed, missing and filled components.....	9
Figure 5:	Percentage of children with dmft = 0, DMFT = 0 and d+D ≥ 4.....	13

## Abbreviations

d	deciduous decayed teeth
m	deciduous missing teeth
f	deciduous filled teeth
dmft	deciduous decayed, missing and filled teeth
D	permanent decayed teeth
M	permanent missing teeth
F	permanent filled teeth
DMFT	permanent decayed, missing and filled teeth
SD	standard deviation

## **Purpose of this report**

Information listed in the tables of this report includes: the age and sex of children in the sample, their deciduous and permanent caries experience, frequency of fissure sealants, history of school dental service examinations, and regional statistics.

The report also provides a simple summary statement highlighting differences between the 2000 and 1999 data. It is necessary to be cautious in drawing inferences concerning changes between the years. No formal hypothesis tests have been undertaken and descriptions of difference between years are intended as a guide to the reader rather than an evaluation of trends.

## **Source of subjects and sampling**

The data used for this report were collected during the 2000 calendar year from Western Australia School Dental Service patients by dental therapists and dentists. A random sampling procedure was used to select approximately 1 in 8 patients. This was achieved by selecting those children whose birthday was on the 28th, 29th, 30th or 31st day of any month. Consequently, the data constitute a simple random sample.

## **Data preparation**

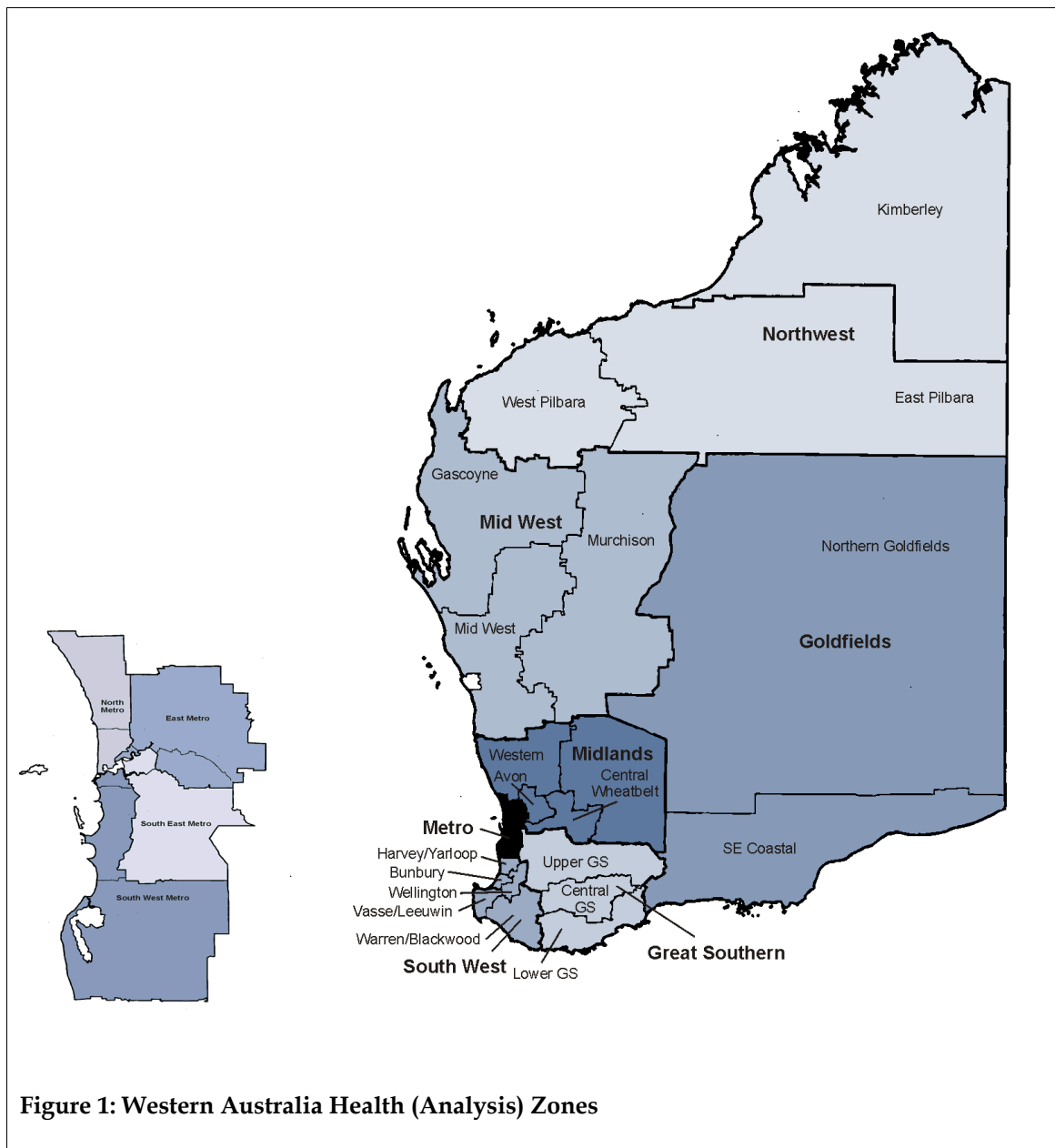
Data were collected on Optical Mark Reader (OMR) forms for scanning by Dental Services WA and then forwarded to the AIHW Dental Statistics and Research Unit (DSRU) for analysis.

The data were cleaned prior to analysis, both before and after it was received by DSRU, to correct data recording errors. As a result, a small number of cases were deleted where it was apparent that they were the result of data recording errors.

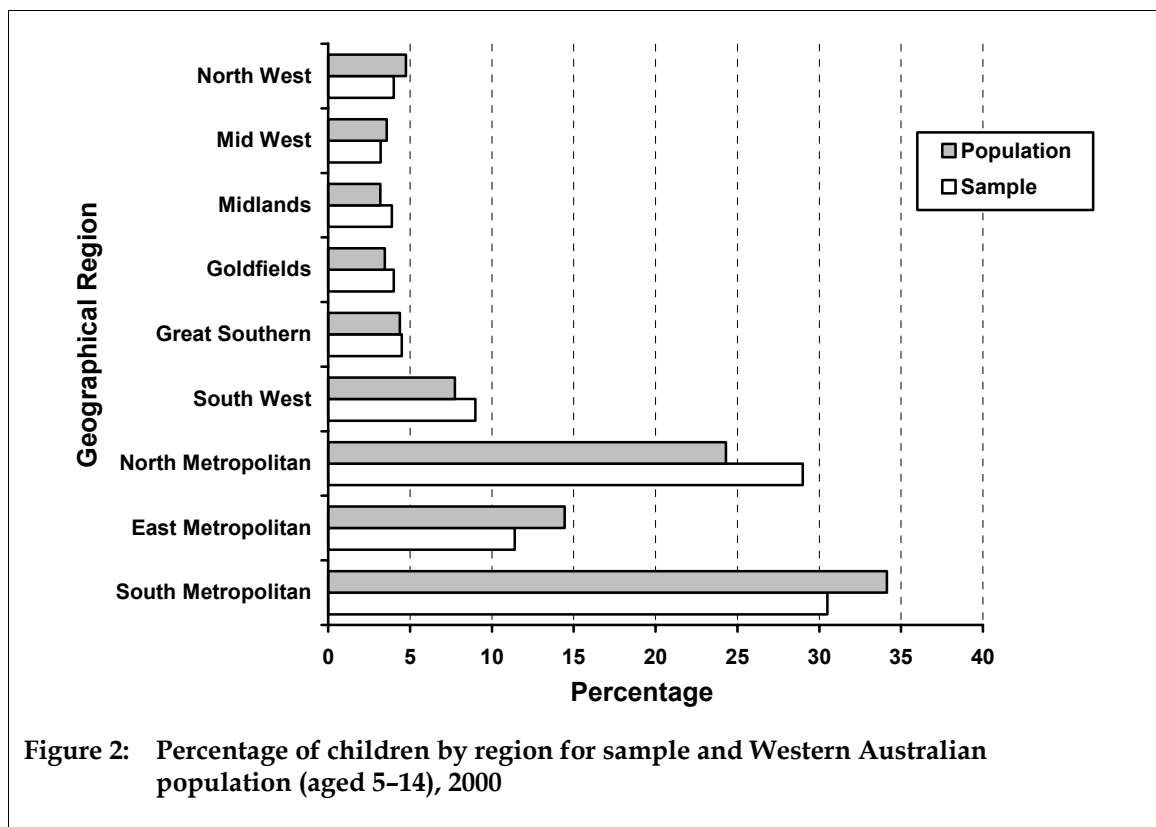
## **Data analysis**

All data were weighted for the analyses to more accurately reflect the child population (5-14 years old) in Western Australia for 2000. A map showing the Health (Analysis) Zones of Western Australia is presented in Figure 1. Although the Health Department of Western Australia incorporates 32 individual Health Service areas, larger subdivisions of Western Australia are used for routine analytical purposes, each comprising a number of Health Services. The regions used here include six from rural areas (North West, Mid West, Midlands, Goldfields, Great Southern and South West) and three from metropolitan Perth and surrounds (North Metropolitan, East Metropolitan, and South Metropolitan - for the purpose of this report South East and South West Metropolitan have been combined).

The data were first weighted by months since last visit (which was used due to the under-representation of students on longer recall schedules in the sample). Children with examinations 12 months previous or less were given the same weight as it was assumed that each of these children would be seen at least once per year. Unit records were further weighted to reflect the Estimated Residential Population (ERP) of 5-14-year-olds according to statistical units within Western Australia as at 30 June 2000 as published by the Australian Bureau of Statistics (2000). Weighting was not carried out by individual age group within each region or by sex of the child. Statistical units were mapped to the Health Zones as shown in Figure 1. Assignment of Health Zones to all unit records was based on the location of the clinic to which a child attended.



**Figure 1: Western Australia Health (Analysis) Zones**



The relative sample sizes and population estimates by Health Zone as a percentage of the total sample and of the Western Australian 5-14-year-old population are shown in Figure 2. In regions where there were a greater percentage of children in the population (grey bars) than in the sample (white bars), weights greater than 1.0 were generated for each sampled child. Table 1 shows that, as a result of weighting, the North West, Mid West, East Metropolitan and South Metropolitan zones were weighted up in the analysis (mean weights = 1.19, 1.10, 1.26 and 1.11 respectively) while Midlands, Goldfields, Great Southern, South West and North Metropolitan zones were weighted down (mean weights = 0.82, 0.85, 0.97, 0.86 and 0.83 respectively). The final unit record weights were applied such that the weighted contribution of each Health (Analysis) Zone was proportional to the percentage represented by that Health Zone in the Western Australian population.

The purpose of the weighting protocol was to produce estimates that are representative of those of the population covered by the School Dental Service for 2000. However, the estimates in this report cannot be applied to children who are not enrolled in the WA School Dental Service. Consequently, the results in this report do not represent the complete WA child population, but only that portion of the population that is enrolled in the WA School Dental Service. In Western Australia, approximately 85% and 70% of 5-12-year-olds and 13-16-year-olds respectively are enrolled in the School Dental Service, and hence estimates in this report may not differ substantially from estimates that would be obtained if all children in the State were surveyed.

**Table 1: Sample size and assigned weight by Health Zone**

Region	Number Sampled	Weight
North West	698	1.19
Mid West	569	1.10
Midlands	681	0.82
Goldfields	711	0.85
Great Southern	789	0.97
South West	1,585	0.86
North Metropolitan	5,098	0.83
East Metropolitan	2,000	1.26
South Metropolitan	5,358	1.11
Missing	97	1.00

It should be noted that all analyses up to and including Table 10 use the weighted distribution of children to derive results. However, months since last visit was not used to weight the data in Tables 9 and 10 because the results included time since last visit. Weighted numbers are rounded to the nearest whole number for ease of interpretation. No weighting is applied to the regional analyses in Tables 11 and 12.

The Child Dental Health Survey, Western Australian 1998 excluded children both with no deciduous teeth in the analyses of deciduous caries experience and no permanent teeth in the analyses of permanent caries experience. Because information on number of teeth present was not available for 2000, calculations of deciduous and permanent caries experience for 2000 include some children with no deciduous and permanent teeth respectively. This may be expected to underestimate the caries experience in the deciduous dentition of children aged 10 years and over and in the permanent dentition of children aged up to 6 years of age.

Age-specific indices denoted with an asterisk (\*) are those in which the relative standard error exceeds 40% and population estimates of these indices are considered to be statistically unreliable and should be interpreted with due care.

## **Demographic composition of the sample**

The majority of children in the sample (75.4%) were aged between 5 and 12 years inclusive, with between 1,400 and 1,800 children in each individual age group within this range (see Table 2). However, children aged between 13 and 16 years, and those aged 4 were also represented in substantial numbers. There was some variation in the proportions of females and males in a number of the age groups.

The small numbers of children aged either less than 4 years or greater than 16 years result in less reliability of computed statistics for those ages. Because of this and the small numbers of these children sampled they have been included in the adjacent age group for the purpose of analyses in this report.



**Table 2: Demographic composition of the sample**

Age (years)	Children in sample (unweighted)			Children in sample (weighted)		
	Males	Females	Persons	Males	Females	Persons
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
3	8	3	11	8	3	11
4	455	437	892	453	437	891
5	785	782	1,567	743	746	1,489
6	891	742	1,633	857	704	1,561
7	849	887	1,736	836	886	1,722
8	858	901	1,759	864	899	1,762
9	856	808	1,664	852	816	1,638
10	923	818	1,741	931	807	1,737
11	844	827	1,671	845	820	1,664
12	766	722	1,488	773	717	1,490
13	567	596	1,163	574	616	1,190
14	508	458	966	547	488	1,035
15	403	398	801	430	423	853
16	209	246	455	221	255	476
17	18	11	29	17	11	28
18	0	5	5	0	4	4
19	1	4	5	1	3	4
<b>Total</b>	<b>8,941</b>	<b>8,645</b>	<b>17,586</b>	<b>8,950</b>	<b>8,636</b>	<b>17,586</b>

### Changes since 1999

There was a decrease of 858 children sampled in 2000 compared to 1999.

### Deciduous teeth

The mean number of clinically detectable decayed teeth among children aged 5 to 12 years old declined steadily with age, from 1.17 to 0.08 (see Table 3). In contrast, the mean number of filled teeth climbed to a peak for 9-year-olds of 1.12 before declining. In a similar trend, mean dmft increased from 1.37 for the youngest children to 1.64 for 7-year-old children before declining. These findings must be interpreted in view of the exfoliation of deciduous teeth as children grow older. From the age of 10 onwards increasingly higher proportions of children have no deciduous dentition. The number of teeth deemed missing due to caries was low for all age groups.

**Table 3: Deciduous dentition – decayed, missing and filled teeth by age**

Age	Children <i>n</i>	Decayed (d)		Missing (m)		Filled (f)		dmft	
		mean	SD	mean	SD	mean	SD	mean	SD
≤4	902	1.17	2.52	0.05	0.95	0.15	1.10	1.37	3.72
5	1,489	1.04	2.13	0.05	0.53	0.40	1.32	1.48	2.86
6	1,561	0.82	1.79	0.05	0.71	0.83	1.72	1.70	3.16
7	1,722	0.60	1.32	0.05	0.39	0.99	1.78	1.64	2.37
8	1,762	0.57	1.17	0.02	0.27	1.01	1.67	1.59	2.26
9	1,668	0.47	1.02	0.02	0.32	1.12	1.75	1.62	2.14
10	1,737	0.33	0.84	0.01	0.23	0.82	1.45	1.16	1.77
11	1,664	0.17	0.57	0.00	0.03	0.49	1.05	0.66	1.28
12	1,490	0.08	0.39	–	–	0.25	0.74	0.33	0.88

The ratio of untreated decayed teeth to the total count of decayed, missing, and filled teeth serves as an indicator of how well a child’s dental needs are being met. This is presented in Table 4 as the mean of individual children’s d/dmft index. The percentage of caries experience due to decay (mean d/dmft index) showed an age associated decline, reducing from 91.6% for children less than 5 years old to 23.6% among 12-year-olds (Table 4). By comparison, the percentage of ‘caries-free’ children (% dmft = 0) shows a more modest reduction, from 66.2% among children up to 5 years old to 47.1% among 9-year-olds, before increasing to 83.0% for 12-year-olds.

**Table 4: Deciduous teeth – caries experience indices by age**

Age	Mean d/dmft index		dmft = 0	
	<i>n</i>	%	<i>n</i>	%
≤4	305	91.6	902	66.2
5	588	72.3	1,489	60.5
6	731	51.4	1,561	53.2
7	833	39.3	1,722	51.7
8	885	39.7	1,762	49.8
9	883	32.9	1,668	47.1
10	759	31.3	1,737	56.3
11	504	26.5	1,664	69.7
12	253	23.6	1,490	83.0

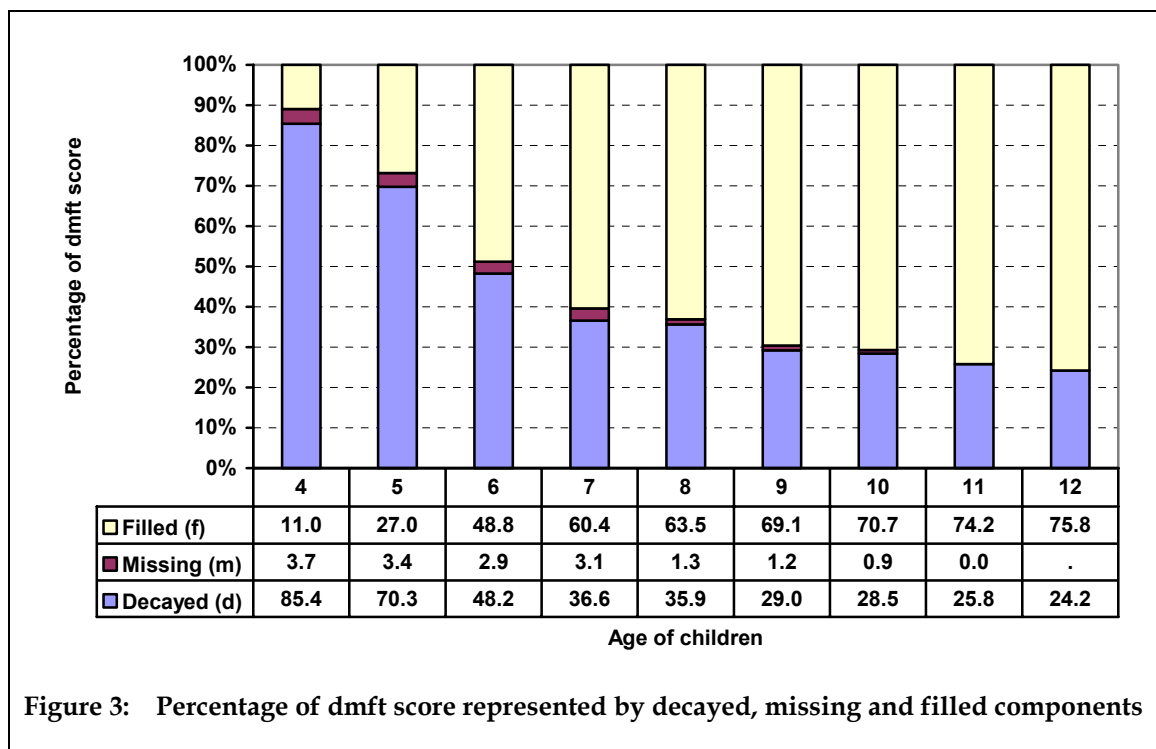


Figure 3: Percentage of dmft score represented by decayed, missing and filled components

The ratio of untreated decayed teeth to the total count of decayed, missing, and filled teeth can also be expressed as the ratio of total decay in the population to total decayed, missing or filled teeth in the population (d/dmft ratio), and this is presented in Figure 3. Unlike the d/dmft index, the d/dmft ratio refers to the proportion of teeth with caries in the population. Thus, the ratio for 6-year-olds indicates that, among 100 teeth with caries experience among 6-year-olds, 48.2% had untreated decay. The d/dmft ratio shows a similar pattern to that of the mean dmft index, with the percentage d/dmft reducing across increasingly older age groups, declining from 85.4% for the youngest children to 24.2% among 12-year-olds. The percentage of dmft accounted for by filled teeth shows the opposite trend, increasing from 11.0% for children aged up to including 4 years old to 75.8 for 12-year-olds.

### Changes since 1999

Between 1999 and 2000 there were inconsistent changes in the mean number of clinically decayed teeth. The biggest changes occurred for the youngest children (18.2% increase) and for children aged 7 (11.8% decrease). The mean number of missing teeth increased across all age groups up to 9, although means were still very low. Increases also occurred in the mean number of filled teeth for children up to the age of 9, with the biggest changes occurring for 6, 7 and 9-year-olds (increases of 27.7%, 15.1% and 9.8% respectively). This resulted in increases in mean dmft for all age groups up to 9 years of age. In addition, the percentage of children with dmft = 0 also decreased for 4 of the 6 age groups of children aged up to 9 years old. The largest changes in the mean d/dmft index between 1999 and 2000 were for 6- and 7-year-olds, with an absolute decrease of 4.3% and 7.8% respectively.

## Permanent teeth

Clinically detectable decay in the permanent dentition generally increased with increasing age (Table 5). As in the deciduous dentition, permanent teeth judged as missing due to caries were few although the average increased among the older children. The mean number of filled teeth rose steadily with increasing age, and from the age of 10 exceeded the mean number of decayed teeth across each age group. The mean DMFT also increased consistently across age groups, from 0.09 for children aged 6 years to 1.67 for children aged 15 years. The mean DMFT score for 12-year-old children was 0.89.

The percentage of DMFT due to decay (mean D/DMFT index) and the percentage with no evidence of caries experience (DMFT = 0) both declined across age groups (Table 6). More than 60% of children in all age groups up to 13 years of age were 'caries free' in their permanent dentition. The D/DMFT ratio, which refers to the proportion of teeth with caries experience having untreated decay, showed a similar trend to the D/DMFT index, declining from 88.9% for 6-year-olds to 21.6% for 16-year-olds (Figure 4). Both D/DMFT and F/DMFT stayed relatively constant between the ages of 10 and 15.

## Changes since 1999

Similar to changes in the deciduous dentition, the mean number of filled teeth increased for most age groups between 1999 and 2000, and was most notable for children aged 11, 12 and 15, with increases of 14.7%, 29.0% and 14.3% respectively. Permanent decay increased for children aged 6–8, 12 and 15 but decreased or changed little for the other age groups. Declines in DMFT scores occurred for only two age groups between 1999 and 2000. The largest increases occurred for children aged 7, 8, 11, 12 and 15 (with increases of 26.3%, 42.3%, 9.4%, 18.7% and 13.6% respectively). Reflecting these trends, the percentage of children with DMFT = 0 was generally lower

**Table 5: Permanent dentition – decayed, missing and filled teeth by age**

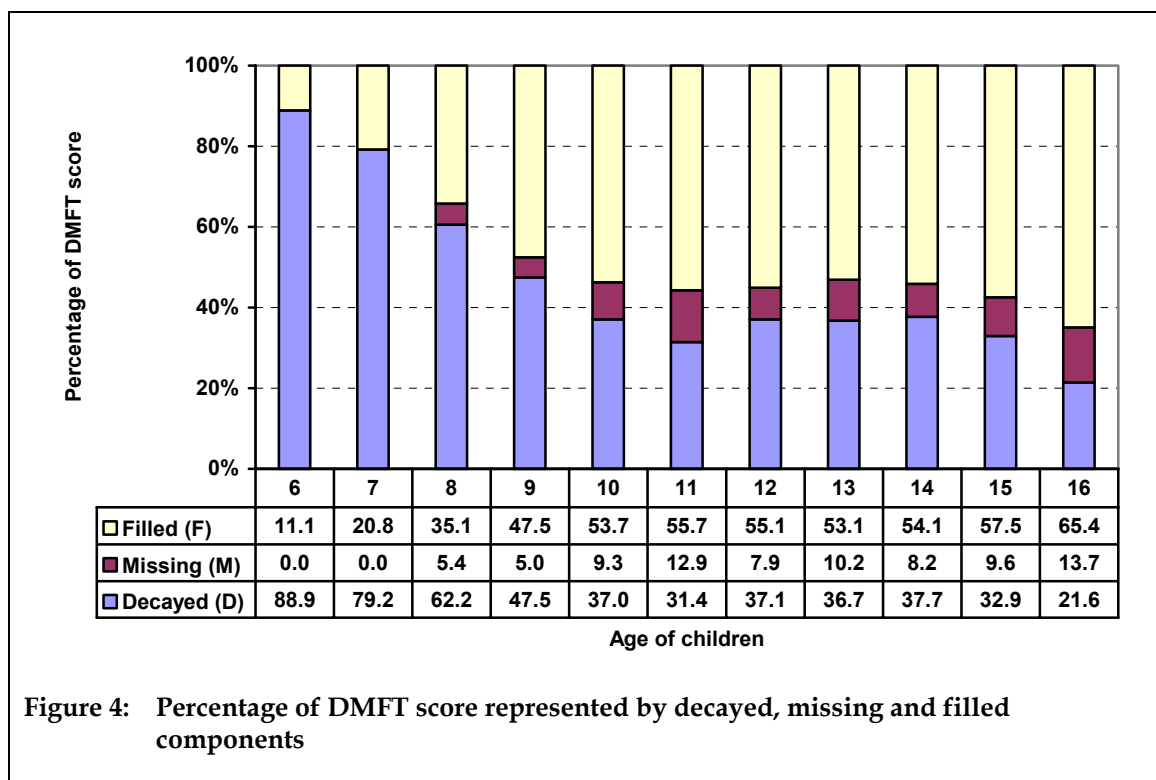
Age	Children <i>n</i>	Decayed (D)		Missing (M)		Filled (F)		DMFT	
		mean	SD	mean	SD	mean	SD	mean	SD
5	1,489	0.00	0.10*	0.00	0.08*	0.01*	0.18*	0.01*	0.26*
6	1,561	0.08	0.44	0.00	0.13*	0.01	0.15	0.09	0.54
7	1,722	0.19	0.62	0.00	0.09*	0.05	0.30	0.24	0.71
8	1,762	0.23	0.69	0.02*	0.29*	0.13	0.58	0.37	1.13
9	1,668	0.19	0.56	0.02	0.20	0.19	0.58	0.40	0.86
10	1,737	0.20	0.68	0.05	0.32	0.29	0.74	0.54	1.10
11	1,664	0.22	0.83	0.09	0.79	0.39	1.21	0.70	2.26
12	1,490	0.33	0.88	0.07	0.52	0.49	1.08	0.89	1.84
13	1,190	0.36	0.88	0.10	0.51	0.52	1.11	0.98	1.62
14	1,035	0.46	1.04	0.10	0.50	0.66	1.35	1.22	1.85
15	853	0.55	1.42	0.16	0.99	0.96	1.96	1.67	2.89
≥16	512	0.33	0.78	0.21	0.77	1.00	1.81	1.53	2.13

\* relative standard error ≥ 40%

in 2000 than in 1999, although the decreases were relatively small, ranging from 0.4 to 4.1 percent. Changes in D/DMFT did not show any consistent trends. The largest decrease occurred for 11-year-olds (39.7% to 31.7%) while the largest increase occurred for 14-year-olds (31.3% to 38.0%).

**Table 6: Permanent dentition - caries experience indices by age**

Age	D/DMFT		DMFT = 0	
	<i>n</i>	%	<i>n</i>	%
5	6	53.5	1,489	99.6
6	83	88.7	1,561	94.7
7	246	80.6	1,722	85.7
8	359	64.3	1,762	79.6
9	382	48.5	1,668	77.1
10	506	39.1	1,737	70.9
11	531	31.7	1,664	68.1
12	587	39.0	1,490	60.6
13	471	34.9	1,190	60.4
14	486	38.0	1,035	53.0
15	447	31.7	853	47.6
≥16	275	25.1	512	46.2



**Figure 4: Percentage of DMFT score represented by decayed, missing and filled components**

## All teeth

Untreated clinically detectable caries in the combined deciduous and permanent dentitions existed for between 22.1% and 36.2% of children in all age ranges (see Table 7). The greatest likelihood of untreated decay occurred for 8-year-olds. The most extensive levels of untreated decay (4 or more deciduous or permanent teeth) occurred in the younger age groups, with more than 5% of children aged 8 years or less being affected to this extent.

While no more than 5% of children aged 5 to 13 years had at least one deciduous or permanent tooth missing due to caries, much larger percentages presented with fillings, for which there was a consistent age-associated increase in children up to 9 years of age (46.5% with 1 or more fillings) followed by a decline to age 13 (30.2%) and a subsequent increase into the oldest age group (38.8%). There was also an increase in the percentage of children with some caries experience in the combined deciduous and permanent dentition, from 34.3% for children aged up to 4 years old to 59.5% at age 9. From the age of 9 there was an increase in the percentage of children with  $dmft+DMFT = 0$  to age 13, with a subsequent decline in percentages into the oldest age groups.

### Changes since 1999

There were no consistent changes in combined-dentition decay experience between 1999 and 2000. Similarly, there was no consistent trend in changes in percentages with  $dmft+DMFT=0$ , with 7 age groups showing decreases and 6 age groups experiencing increases, although decreases in  $dmft+DMFT = 0$  occurred for 5 of the 6 age groups up to 9-year-olds. Ten of the 13 age groups showed declines in the percentage  $f+F = 0$ , with these reductions ranging from 0.1% for 8-year-olds to 4.3% for 6-year-olds.

Table 7: All teeth – age-specific caries experience

Age	Children <i>n</i>	d+D =						m+M = 0	f+F = 0	dmft+ DMFT = 0
		0	1	2	3	4	5+			
≤4	902	67.1	10.0	6.8	3.8	4.1	8.2	99.3	95.3	65.7
5	1,489	67.4	10.4	7.0	4.4	3.0	7.8	98.3	85.6	60.3
6	1,561	65.1	14.3	8.8	4.5	2.6	4.6	98.3	70.1	51.5
7	1,722	65.6	15.3	8.6	4.0	2.9	3.6	97.6	62.4	46.8
8	1,762	63.8	15.9	9.9	4.8	2.3	3.3	98.3	59.8	43.5
9	1,668	66.0	18.7	7.0	4.3	2.2	1.8	97.6	53.5	40.5
10	1,737	70.3	17.1	7.1	2.9	1.0	1.5	96.6	56.1	43.8
11	1,664	77.9	13.5	5.1	2.0	0.4	1.0	96.0	61.6	50.3
12	1,490	76.1	14.4	5.2	2.6	0.7	1.0	96.3	65.3	52.2
13	1,190	78.4	11.5	5.8	2.3	1.5	0.6	95.0	69.8	56.7
14	1,035	74.6	14.2	5.9	2.5	1.4	1.4	94.5	68.4	51.6
15	853	73.0	15.1	5.8	2.2	1.3	2.7	94.1	61.5	45.8
≥16	512	77.8	12.0	7.9	0.8*	1.1	0.4*	90.4	61.2	43.1

\* relative standard error ≥ 40%

## Fissure sealants

The mean number of fissure sealants per child increased with age although little variation occurred between the ages of 8 and 13 where the mean number of fissure sealants ranged from 0.16 to 0.19 (Table 8). Overall, the mean numbers of fissure sealants ranged from 0.03 for 6-year-olds to 0.28 for 14-year-olds. There is some evidence of preferential use of fissure sealants among those with caries experience, indicated by the percentage of children with fissure sealants among those with caries experience compared to those with no caries experience. Children aged 11 years and older showed the greatest difference in number of sealants between those with and those without caries experience.

### Changes since 1999

The mean number of fissure sealants in 2000 was lower for the younger age groups but higher for most older age groups than that observed in 1999, with the extent of these increases ranging from 5.0% to 20.0% for children aged between 11 and 16+. However, despite the increase in mean number of fissure sealants present, there were no consistent increases in the percentages of children with fissure sealants between 1999 and 2000. A reduction in the percentage of children with fissure sealants for those children with caries experience (DMFT  $\geq 1$ ), occurred for 6 of the 7 age groups between 7 and 13.

**Table 8: Fissure sealants - age-specific experience**

Age	Children <i>n</i>	Sealants		Children with sealants			
				DMFT = 0		DMFT $\geq 1$	
		mean	SD	<i>n</i>	%	<i>n</i>	%
6	1,561	0.03	0.29	1,478	1.1	83	6.0
7	1,722	0.12	0.65	1,477	4.0	246	6.3
8	1,762	0.18	0.74	1,403	7.6	359	8.6
9	1,668	0.17	0.73	1,285	6.8	382	7.3
10	1,737	0.16	0.64	1,232	7.6	506	8.2
11	1,664	0.17	0.81	1,134	5.5	531	10.3
12	1,490	0.19	1.03	903	6.1	587	9.0
13	1,190	0.18	0.69	719	8.0	471	9.6
14	1035	0.28	1.04	549	8.3	486	15.3
15	853	0.24	1.33	406	4.6	447	14.2
$\geq 16$	512	0.21	0.89	237	6.2	275	13.7

## School Dental Service examinations

Table 9 demonstrates that the majority (at least 83%) of children 6 years of age or older had previously received examinations within the School Dental Service. A number of children in each age group were recorded as either having their first examination but were given a date of last examination or as not having their first examination but did not have a last examination date recorded. These children were not classified as either having had a previous examination or as having their first examination, and were not included in the results presented in Table 10.

Of those children known to have had a previous examination the majority had been 13–18 months previously (Table 10). A substantial number of children also had their last examination 7–12 months previously. Few children had had their previous examination either less than 6 months or more than 18 months previously. The mean time since last visit increased slightly with age, ranging from 12.53 months for 5-year-olds to 16.03 months for children aged 14.

### Changes since 1999

There was a slight increase for almost all age groups between 1999 and 2000 in the frequency of known first examinations, this being a result of a decrease in the percentage of children with an unknown last examination status.

There was a decrease across almost all ages in the percentage of children having had their last School Dental Service examination 0–6 or 13–18 months previously, with increases in the percentages of children with last examinations either 19–24 months or 25+ months previously. As a result of these changes, there was an increase in the mean number of months since last visit for 9 of the 12 age groups, with increases ranging from 0.1% (14-year-olds) to 8.2% (children aged 16 years or older).

**Table 9: School Dental Service examinations – age-specific distribution**

Age	Children examined <i>n</i>	Previous examination in School Dental Service		
		Yes %	No %	Unsure %
≤4	908	4.0	92.2	3.7
5	1,571	37.7	57.0	5.3
6	1,642	83.1	10.3	6.5
7	1,744	88.0	5.6	6.4
8	1,764	88.0	5.0	7.1
9	1,677	89.1	4.4	6.5
10	1,732	89.1	3.7	7.2
11	1,669	89.1	2.9	8.0
12	1,489	91.1	2.6	6.2
13	1,165	91.3	1.5	7.2
14	971	91.3	2.0	6.7
15	813	90.1	2.8	7.1
≥16	499	89.5	1.8	8.7



Table 10: School Dental Service examinations – time since last visit

Age	Children	Months since last visit					mean	SD
		0–6	7–12	13–18	19–24	25+		
	<i>n</i>	%	%	%	%	%		
≤4	36	5.1*	34.0	60.9	0.0	0.0	12.84*	3.02*
5	592	3.5	49.3	45.5	1.2	0.5*	12.53	3.22
6	1,365	2.0	33.9	57.1	5.9	1.2	13.92	3.46
7	1,535	1.3	32.6	54.1	8.4	3.6	14.62	4.25
8	1,552	1.3	28.0	58.5	8.4	3.8	14.96	4.99
9	1,494	1.0	30.1	57.2	8.5	3.3	14.90	4.63
10	1,543	0.6	27.2	60.6	8.5	3.2	14.92	4.42
11	1,488	1.0	29.4	57.4	8.9	3.3	14.92	4.74
12	1,357	1.2	26.9	60.6	7.1	4.2	14.98	4.92
13	1,064	0.6	25.2	59.6	10.7	3.9	15.35	4.53
14	886	0.3*	24.0	58.6	9.1	8.0	16.03	5.74
15	732	0.4*	24.7	61.2	7.9	5.8	15.69	5.74
≥16	447	0.9*	31.7	54.1	7.3	5.9	15.29	6.36

\* relative standard error ≥ 40%

### Percentage of children with dmft = 0, DMFT = 0 and d+D ≥ 4

Figure 5 presents data contained in Tables 4, 6 and 7 to summarise the extent of dental health (represented by percentage with no caries experience) and the extent of more extensive clinically detectable untreated decay (d+D ≥ 4).

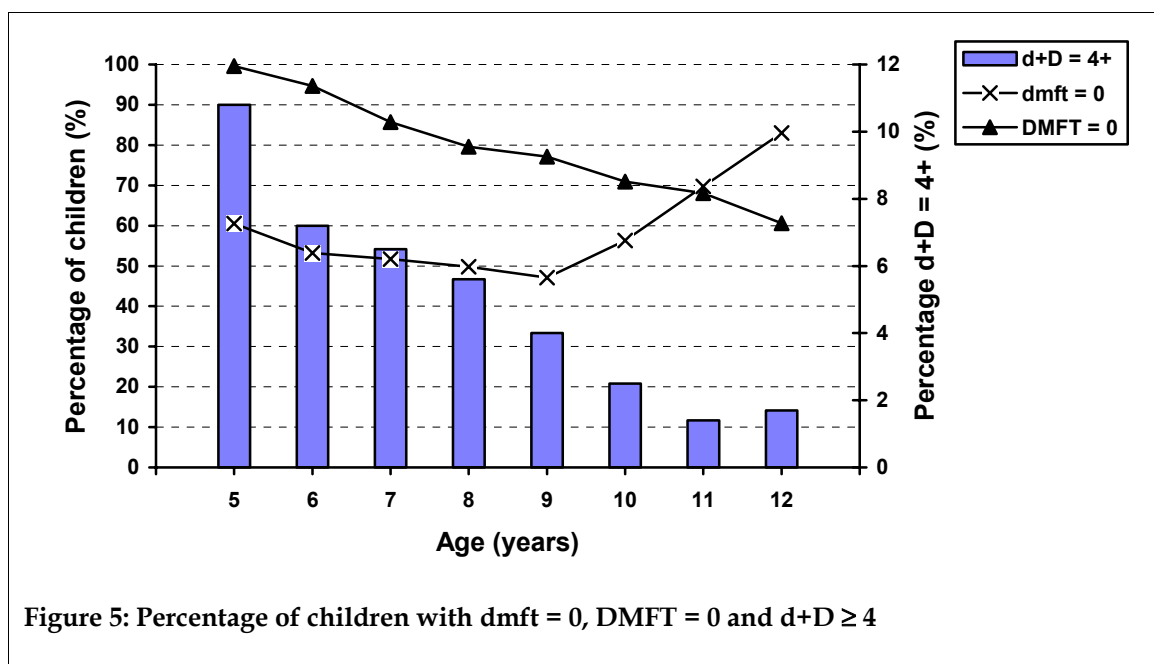


Figure 5: Percentage of children with dmft = 0, DMFT = 0 and d+D ≥ 4

## Caries experience by geographical location

Table 11 presents deciduous caries experience data for each of the Health (Analysis) Zones used in this report. Considerable variation can be seen in caries experience for the selected 5–6-year-old age group across geographical areas. Among these children, mean decay scores in the deciduous dentition ranged from 0.66 in Midlands to 1.85 in the North West zone. The mean number of teeth missing due to caries was highest in the Great Southern zone, while the mean number of filled teeth was highest in the South West and Mid West Health Zones, the lowest being in the North Metropolitan zone. Mean dmft scores were highest in the North West (mean = 2.56) and lowest in the North Metropolitan (mean = 1.33) zone. Consistent with these findings the percentage of children with dmft = 0 was highest in North Metropolitan (62.7%) and lowest in the South West (40.1%) and North West (41.9%) zones.

**Table 11: Deciduous caries experience for 5-6-year-old children by Health (Analysis) Zone**

	Children	Decayed (d)		Missing (m)		Filled (f)		dmft		dmft = 0
	<i>n</i>	mean	SD	mean	SD	mean	SD	mean	SD	%
North West	136	1.85	2.80	0.04	0.26	0.67	1.63	2.56	3.45	41.9
Mid West	100	1.02	2.07	0.00	0.00	0.96	1.73	1.98	2.67	46.0
Midlands	125	0.66	1.48	0.06	0.46	0.84	1.79	1.55	2.58	53.6
Goldfields	147	1.05	2.16	0.10	0.62	0.71	1.64	1.85	2.88	54.4
Great Southern	130	1.05	1.81	0.15	0.78	0.71	1.52	1.90	2.82	52.3
South West	287	1.13	2.01	0.09	1.19	0.97	2.07	2.19	4.21	40.1
North Metropolitan	924	0.81	1.95	0.05	0.70	0.48	1.42	1.33	3.05	62.7
East Metropolitan	374	0.82	1.75	0.02	0.19	0.69	1.56	1.53	2.50	58.6
South Metropolitan	962	0.89	1.91	0.04	0.69	0.62	1.54	1.56	3.12	57.4

The mean number of clinically detectable decayed teeth in 12-year-olds (see Table 12) was highest in the Midlands Health Zone and lowest in the South Metropolitan and Mid West zone. The mean number of filled teeth was also highest in the Midlands zone (mean = 0.96) and lowest in the Great Southern and Mid West zone (means = 0.37 and 0.39 respectively) while DMFT scores were also highest in Midlands and lowest in Great Southern and Mid West. Approximately 71% of 12-year-olds in Mid West had no history of caries experience in their permanent dentition, while only 53.9% of 12-year-old children in the South West zone had a DMFT score of zero.

**Table 12: Permanent caries experience for 12-year-old children by Health (Analysis) Zone**

	Children	Decayed (D)		Missing (M)		Filled (F)		DMFT		DMFT = 0
	<i>n</i>	mean	SD	mean	SD	mean	SD	mean	SD	%
North West	54	0.48	1.01	0.04	0.19	0.48	1.06	1.00	1.64	61.1
Mid West	38	0.26	0.69	0.00	0.00	0.39	0.92	0.66	1.26	71.1
Midlands	57	0.58	2.54	0.33	2.39	0.96	2.58	1.88	7.23	59.6
Goldfields	62	0.34	0.77	0.00	0.00	0.44	0.80	0.77	1.19	59.7
Great Southern	78	0.28	0.64	0.04	0.25	0.37	0.88	0.69	1.34	65.4
South West	154	0.54	1.06	0.12	0.54	0.56	1.11	1.23	1.87	53.9
North Metropolitan	426	0.29	0.75	0.07	0.38	0.46	1.00	0.81	1.36	61.7
East Metropolitan	173	0.37	0.84	0.04	0.25	0.47	1.02	0.88	1.35	58.4
South Metropolitan	438	0.25	0.64	0.08	0.41	0.53	1.04	0.87	1.34	59.1