



AUSTRALIAN INSTITUTE OF
HEALTH & WELFARE



THE UNIVERSITY OF ADELAIDE

**The Child Dental Health Survey
South Australia
January-December 1994**

by

**AIHW Dental Statistics
and Research Unit**

Published by:
AIHW Dental Statistics and Research Unit
The University of Adelaide
AUSTRALIA 5005

8th November, 1995

Phone: (08) 303 5027
Fax: (08) 303 3444

This report is the South Australian component of the Child Dental Health Survey, a project in which all States and Territories are participating.

The AIHW Dental Statistics and Research Unit (DSRU) is an external unit of the Australian Institute of Health and Welfare and was established in 1988 at The University of Adelaide. The DSRU was funded to improve the range and quality of dental statistics and research on the dental workforce, dental health status, dental practices and use of dental services.

DSRU Staff:

Director:	Professor John Spencer
Research Fellow:	Dr Murray Thomson
Research Officers:	Mr Fearnley Szuster Mr Michael Davies Mr David Brennan Ms Judy Stewart Mr Knute Carter
Research Associate:	Dr Danae Kent

THE CHILD DENTAL HEALTH SURVEY - SOUTH AUSTRALIA 1994

Purpose of this report

This report establishes the series of annual reports providing descriptive statistics concerning child dental health in South Australia, and follows the 1993 report. Information listed in the tables includes: the age and sex of children in the sample, their deciduous and permanent caries experience, frequency of fissure sealants and children's history of School Dental Service examinations. These data were collected during the 1994 calendar year from SA School Dental Service patients by dental therapists and dentists. A random sampling procedure was used to select patients aged 5 to 15 years during June 1993 to May 1994. This was achieved in metropolitan Adelaide by selecting those children whose birthdays were on the 13th, 30th or 31st day of any month. Non-metropolitan areas included birthdays falling on the 13th, and 26th through to 31st.

A sample of this cohort, based on participation in the Child Fluoride Study,¹ of cases was re-examined during the 1994 calendar year. To allow for the ageing of this cohort, 5 and 6 year-old children new to the SDS were also sampled at the above-mentioned ratios.

This sampling scheme represents a minor modification from the procedures used in 1993.

The following sections describe briefly each table and contain a simple summary statement highlighting differences between the 1994 and 1993 data. However, 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.*

Table 1: Demographic composition of the sample

The first table lists at the left the number of children sampled according to their date of birth. The majority of children were aged 5 years or more, and there were large numbers of children in the range 5 to 15 years. There was a tendency for younger children within this age range to be represented in slightly greater numbers. Males and females were represented in approximately equivalent numbers. There was not more than 15 per cent variation in the gender balance within any age group.

The age distribution of the sample is related to the main target groups of children served by the School Dental Service in SA. This illustrates that the sample is representative of children in primary school and early secondary school, rather than all children in South Australia. Consequently, those children who are outside the main school dental service target groups (less than 5 or more than 15 years) may differ on key characteristics and are likely to be less representative of their respective age groups in the SA population.

Changes since 1992

The 1993 sample is smaller than the 1992 sample by approximately 750 children, reflecting the different sampling arrangements described previously. In other respects, the proportional distribution of ages and sexes is similar to the 1993 sample.

¹ An NHMRC funded project conducted in collaboration with SADS designed to examine the effect of water fluoridation on 3 year caries incidence.

Table 2: Country of birth

These data were not collected in SA in 1994. Reference should be made to the report for 1992 for this data item.

Table 3: Deciduous teeth: age-specific caries experience

The mean number of decayed teeth shows considerable variation among ages, ranging from a high of 0.58 among children aged 5 years to a low of 0.26 among 10 year-olds. The age-associated decline in number of decayed teeth is fairly linear. Variation in mean dmft is less consistently associated with age, being highest among 8 year-olds (mean = 1.86). A pattern of reducing dmft among older children is consistent with natural exfoliation of teeth.

The percentage of caries experience due to decay (d/dmft) shows a strong age-associated decline, reducing from 66.6 per cent among children aged 5 years or less to 16.1 per cent for children aged 10 years or more. This pattern of deciduous caries experience among the youngest groups (dominated by patients new to the School Dental Service) indicates that they enter the dental program with a relatively high level of untreated caries.

The percentage of caries-free children (% dmft = 0) also shows an age-associated reduction from 73.4 per cent among 5 year-old children to 49.5 per cent among 10 year-olds. The percentage of caries free children therefore mirrors the mean dmft prevalence.

Changes since 1993

The mean number of decayed teeth increased from 1993 in most ages. There were no noticeable declines in the mean dmft. Related to this, the percentage of caries experience due to decay (d/dmft) increased. There were also indications of modest increases in the percentage of children with no deciduous caries experience (dmft=0).

Table 4: Permanent teeth: age-specific caries experience

The mean number of decayed permanent teeth is consistently smaller than the mean number of decayed deciduous teeth for children aged 11 years or less. Although the figure increases among older ages, it is substantially less than the highest mean number of decayed deciduous teeth. As expected, the mean DMFT increases quite consistently across age groups. The D/DMFT ratio indicated a corresponding decline, although the D component appeared to increase with age. The DMFT for 12 year-old children for 1994 was 0.62, and more than 65 per cent of children aged over 12 years have no caries experience.

Changes since 1993

There were reductions of in the mean DMFT, although most most age groups in the range 5 to 12 years had small reductions of less than 0.1 teeth. Similarly, increases were observed in the percentage of caries-free children.

Table 5: All teeth: age-specific caries experience

Untreated caries in the combined deciduous and permanent dentitions exist for 16.2 to 29 per cent of children aged 5 to 12 years. Based on observations from previous tables, much of this untreated decay can be attributed to the deciduous dentition. Furthermore, it is noteworthy that the most extensive levels of untreated decay (4 or more deciduous or permanent teeth)

Table 5: All teeth: age-specific caries experience

Untreated caries in the combined deciduous and permanent dentitions exist for 16.2 to 29 per cent of children aged 5 to 12 years. Based on observations from previous tables, much of this untreated decay can be attributed to the deciduous dentition. Furthermore, it is noteworthy that the most extensive levels of untreated decay (4 or more deciduous or permanent teeth) occur in the younger age groups, with five per cent of children aged 5 years or less being affected to this extent. This is further evidence that the most extensive levels of untreated decay occur in the deciduous dentition.

More than 97 per cent of children across all ages have no deciduous or permanent teeth missing due to caries ($m+M=0$). As expected, the percentage of children with neither deciduous or permanent caries experience ($dmft+DMFT=0$) declines among older ages, and less than 50 per cent of those aged 12 years have no caries experience.

Changes since 1993

There were no systematic changes in the percentage of children with decay ($\% d+D=1$) in ages 7 to 12 years, and in the percentage of children with no caries experience ($dmft+DMFT=0$).

Table 6: Fissure sealants: age-specific prevalence

Fissure sealants were recorded for the first time during 1990 in South Australia. Sealants were frequent in children aged 8 years or more. The prevalence of fissure sealants among those without permanent caries experience ($DMFT=0$) was consistently greater than among those with some permanent caries experience ($DMFT=1+$). This indicates that fissure sealants were being used preferentially in children with past caries experience.

Changes since 1993

There were no substantial changes in the mean number of teeth with fissure sealants across most ages.

Table 7: Immediate treatment needs

This data item was recorded for the first time in 1990 and refers to children who at the time of examination have, or are likely to develop within four weeks, pain, infection or serious life threatening conditions. It is intended to capture the more severe clinical conditions which may not be apparent from statistics such as the number of teeth affected with some caries experience. Extremely low percentages of children had immediate treatment needs, due probably to the sampling method of the Child Fluoride Study. Both deciduous and permanent caries experience ($dmft$ and $DMFT$) were high for this group.

Changes since 1993

There has been no substantial changes across most age groups in the percentage of children sampled in need of immediate treatment

Table 8: School Dental Service examinations

This table demonstrates that the great majority (over 88 per cent) of children over the age of 6 years had previously been examined within the School Dental Service. The percentage of children aged 4 years or less with a previous examination is difficult to interpret, as it may be expected that virtually all of them would receive a first examination.

The right hand side of the table refers to the period since the previous school dental service examination among children with a previous record of examination. There was a distinctive age-related pattern with younger children more likely than older children to have received a previous examination within the last 12 months. Approximately one-third per cent of children aged 5 years or less had received a previous examination within the previous 12 months.

Changes since 1993

The months since last examination reveal increased proportions of children who last received care over 12 months ago

Figure 1: Percentage of children with dmft=0, DMFT=0 and d+D=4+

This figure presents data contained in Tables 3, 4 and 5 to summarise the extent of dental health (represented by percentage with no caries experience) and the extent of more extensive untreated decay (represented by the percentage with d+D=4 or more).

For further information contact:

Mr Michael Davies
AIHW Dental Statistics and Research Unit
The University of Adelaide
AUSTRALIA 5005

Phone: (08) 303 5027
Fax: (08) 303 3444

TABLE 1: DEMOGRAPHIC COMPOSITION OF THE SAMPLE

Data for the Child Dental Health Survey are collected from a stratified random sample of children in all Australian States and Territories. In South Australia the sampling is 1:19. This ratio is achieved by systematically selecting every nineteenth record of data from all children examined in the School Dental Service. The following table describes the number of records processed from children in South Australia.

State/Territory: **South Australia**

Sampling Ratio: **1:19**

Data for period January-December 1994

Date of Report: 7th November 1995

Age (years)	NUMBER OF RECORDS PROCESSED		
	Males	Females	Persons
2	9	5	13
3	29	34	63
4	67	71	138
5	98	95	193
6	79	85	164
7	162	150	312
8	253	232	485
9	233	230	463
10	233	227	460
11	212	185	397
12	207	216	423
13	184	175	359
14	156	177	333
15	138	137	275
16	109	114	222
17	55	61	116
18	4	0	4
TOTAL	2226	2194	4420

TABLE 2: COUNTRY OF BIRTH (INCLUDING ABORIGINALITY)

These data were not collected in South Australia in 1994.

TABLE 3: DECIDUOUS TEETH: AGE-SPECIFIC CARIES EXPERIENCE¹

This table uses Statewide data to describe the dmft index and its components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, the information derived from examinations other than the first is excluded. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period **January-December 1994**

Date of report: **7th November 1995**

Age (years)	Number of children in sample	decayed ²		dmft		d/dmf %	Children with dmft=0 %
		mean	sd	mean	sd		
4	138	0.62	1.50	0.75	1.70	86.5	75.5
5	193	0.41	1.01	0.67	1.45	66.6	73.4
6	164	0.58	1.77	1.17	2.20	42.9	59.7
7	312	0.49	1.04	1.49	2.31	36.5	55.6
8	485	0.42	1.01	1.86	2.41	25.5	47.5
9	463	0.29	0.81	1.75	2.42	17.2	52.0
10	460	0.26	0.70	1.71	2.38	16.1	49.5

¹ Legend: d - decayed deciduous teeth
 dmft - decayed, missing or filled deciduous teeth
 sd - standard deviation

² Filled but otherwise sound teeth which needed a replacement filling were included in the decayed index resulting in a very small over-estimation of the decayed and dmft indices of four per cent or less.

TABLE 4: PERMANENT TEETH: AGE-SPECIFIC CARIES EXPERIENCE¹

This table uses Statewide data to describe the DMFT index and its components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, the information derived from examinations other than the first is excluded. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period **January-December 1994**

Date of report: **7th November 1995**

Age (years)	Number of children in sample	DECAYED ²		DMFT		D/DMFT	Children with DMFT=0
		mean	sd	mean	sd	%	%
5	193	*	*	*	*	*	97.9
6	164	*	*	0.05	0.21	58.7	95.2
7	312	0.07	0.38	0.11	0.45	67.7	92.6
8	485	0.10	0.37	0.21	0.58	44.4	85.0
9	463	0.06	0.25	0.22	0.59	32.2	85.0
10	460	0.13	0.39	0.40	0.88	35.6	74.9
11	397	0.11	0.41	0.52	1.02	25.7	72.1
12	423	0.13	0.50	0.62	1.13	23.3	65.8
13	359	0.18	0.48	0.82	1.33	24.2	58.9
14	333	0.22	0.52	1.26	1.61	20.3	48.1
15	275	0.21	0.57	1.29	1.63	16.4	44.4
16	222	0.30	0.70	1.74	2.10	19.2	37.2
17	116	0.31	0.87	1.92	2.24	13.8	38.8
18	4	-	-	3.78	1.83	0.00	0.0

¹ Legend: D - decayed permanent teeth
DMFT - decayed, missing or filled permanent teeth
sd - standard deviation

² Filled but otherwise sound teeth which needed a replacement filling were included in the decayed index resulting in a very small over-estimation of the decayed and DMF indices of two per cent or less.

TABLE 5: ALL TEETH: AGE-SPECIFIC PREVALENCE¹

This table uses Statewide data to describe the combined dmft and DMFT indices and their components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, the information derived from examinations other than the first is excluded. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period **January-December 1994**

Date of report: **7th November 1995**

Age (years)	Number of children in sample	% of children with d+D=					% of children with		
		0	1	2	3	≥4	m+M=0	f+F=0	dmft+DMFT=0
4	138	77.6	6.7	8.3	*	5.7	99.6	96.5	75.5
5	193	79.9	6.9	8.9	*	*	99.7	89.1	72.7
6	164	75.9	8.9	6.5	6.5	*	97.5	72.1	58.5
7	312	72.8	14.4	3.3	6.0	3.6	98.1	64.3	54.0
8	485	71.0	16.4	6.9	4.3	1.4	99.0	52.3	43.2
9	463	78.4	14.3	3.7	2.8	*	98.2	51.8	47.4
10	460	75.3	17.3	3.6	2.2	1.6	97.7	46.2	38.9
11	397	75.6	15.3	3.5	3.6	1.9	98.7	52.1	43.6
12	423	82.8	12.4	3.0	*	*	99.3	58.9	50.6
13	359	81.6	13.5	3.6	*	*	99.2	62.7	53.4
14	333	80.9	15.0	3.8	*	*	99.0	52.2	46.4
15	275	85.5	10.3	2.4	*	0.0	98.8	49.2	43.7
16	222	79.6	14.3	*	3.4	*	98.3	43.0	36.9
17	116	82.3	11.4	*	0.0	*	99.1	41.6	38.4
18	4	64.0	*	0.0	0.0	0.0	100	0.0	0.0

¹ Legend:

- d - decayed deciduous teeth
- D - decayed permanent teeth
- m - deciduous teeth missing due to caries
- M - permanent teeth missing due to caries
- f - deciduous teeth restored due to caries
- F - permanent teeth restored due to caries
- dmft - decayed, missing or filled deciduous teeth
- DMFT - decayed, missing or filled permanent teeth

TABLE 6: FISSURE SEALANTS: AGE-SPECIFIC PREVALENCE¹

This table uses State-specific data to describe the distribution of fissure sealants for individual (year of birth) ages, along with the caries experience of those who have fissure sealants and those who do not. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, the information derived from examinations other than the first is excluded. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period **January-December 1994**

Date of report: **7th November 1995**

Age (years)	Number of children in sample	Number of sealants		CHILDREN WITH DMFT=0		CHILDREN WITH DMFT=1+	
		mean	sd	number	% with F/S=1+	number	% with F/S=1+
6	164	*	*	156	0.0	8	6.7
7	312	0.18	0.66	289	8.5	23	23.1
8	485	0.42	1.00	413	15.4	73	39.3
9	463	0.92	1.38	393	30.6	70	71.8
10	460	1.19	1.48	344	40.6	116	65.6
11	397	1.08	1.43	286	37.5	111	68.1
12	423	1.45	1.62	279	48.8	145	64.9
13	359	1.49	1.72	211	46.4	148	73.3
14	333	1.67	1.99	160	39.8	173	71.8
15	275	1.88	2.15	122	54.5	153	67.9
16	222	2.18	2.30	83	59.8	140	68.3
17	116	2.34	2.49	45	34.8	71	84.0
18	4	*	*	0	-	4	*

¹ Legend: DMFT - decayed, missing or filled permanent teeth

TABLE 7: IMMEDIATE TREATMENT NEEDS: AGE-SPECIFIC DISTRIBUTION¹

This table, based on State-wide data, describes the number and proportion of children in immediate need of dental treatment. This classification is accorded to children who have, or who are likely to develop within four weeks, oral pain or infection. The dental caries experience of this group of children is also described. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, the information derived from examinations other than the first is excluded. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these indices are statistically unreliable.

State/Territory: **South Australia**

Sampling ratio: **1:19**

Data for period **January-December 1994**

Date of report: **7th November 1995**

CHILDREN IN NEED OF IMMEDIATE TREATMENT

Age (years)	Number of children in sample	No.	% of all children	dmft		DMFT		% with d+D=				
				mean	sd	mean	sd	0	1	2	3	4+
4	210	1	*	8.00	-	-	-	0.0	0.0	0.0	0.0	100
5	188	0	0.0	-	-	-	-	-	-	-	-	-
6	161	2	*	2.11	-	0.30	-	*	0.0	0.0	*	0.0
7	309	3	*	2.50	0.64	-	-	0.0	*	0.0	*	0.0
8	490	4	*	*	*	-	-	*	66.7	0.0	0.0	0.0
9	458	2	*	*	*	*	*	*	77.1	0.0	0.0	0.0
10	463	3	*	-	-	1.50	0.64	0.0	100	0.0	0.0	0.0
11	401	1	*	6.00	-	1.00	-	0.0	0.0	0.0	100	0.0
12	426	1	*	-	-	6.00	-	0.0	0.0	0.0	0.0	100
13	361	0	0.0	-	-	-	-	-	-	-	-	-
14	335	3	*	-	-	*	*	0.0	*	*	0.0	0.0
15	618	2	*	-	-	*	*	100	0.0	0.0	0.0	0.0

¹ Legend: dmft - number of decayed, missing or filled deciduous teeth
 DMFT - number of decayed, missing or filled permanent teeth
 d - number of decayed deciduous teeth
 D - number of decayed permanent teeth

**TABLE 8: SCHOOL DENTAL SERVICE EXAMINATIONS:
AGE-SPECIFIC DISTRIBUTION**

This table describes the percentage distribution of children who have received initial and subsequent dental examinations in the School Dental Service. Data from all examinations of children who were examined during the report period are included in this table; percentage estimates denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these percentages are statistically unreliable.

State/Territory: South Australia

Sampling ratio: 1:19

Data for period January-December 1994

Date of report: 7th November 1995

Age (years)	Number of children examined	Previous examination in School Dental Service (%)			CHILDREN WITH PREVIOUS EXAMINATION			
		No	Yes	Unknown	Months since last examination ¹ (%)			
					0-6	7-12	13-24	25+
2	11	100	0.0	0.0	-	-	-	-
3	63	75.8	22.6	*	*	50.0	35.7	0.0
4	136	68.1	26.7	5.2	16.7	36.1	44.4	*
5	182	38.1	56.9	5.0	*	32.0	64.1	0.0
6	158	10.8	88.6	*	7.1	20.0	70.7	*
7	316	3.8	94.6	*	4.4	36.2	56.7	2.7
8	500	*	98.8	*	3.0	25.3	70.4	1.2
9	491	*	98.8	*	3.1	27.2	67.0	2.7
10	488	*	99.0	*	3.1	20.7	72.9	3.3
11	433	0.0	100	0.0	2.1	21.5	74.3	2.1
12	448	*	99.1	*	2.3	15.1	79.7	2.9
13	385	0.0	99.7	*	2.3	16.7	77.5	3.4
14	340	0.0	100	0.0	1.8	11.2	83.5	3.5
15	286	*	99.3	0.0	*	13.7	79.2	5.6
116	237	0.0	100	0.0	*	16.0	78.9	3.4
17	111	0.0	100	0.0	*	17.1	75.7	5.4
18	4	0.0	100	0.0	0.0	*	75.0	0.0

¹ Excludes those with no previous examination and where the date of previous examination is unknown.

**FIGURE 1: PERCENTAGE OF CHILDREN WITH
dmft=0, DMFT=0 and d+D=4+**

