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## The Child Dental Health Survey New South Wales, 1989

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by

The AIH Dental Statistics  
and Research Unit

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## THE CHILD DENTAL HEALTH SURVEY - NEW SOUTH WALES 1989

### Purpose of this report

This report provides descriptive findings from the New South Wales component of the Child Dental Health Survey. 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, immediate treatment needs and children's history of school dental service examinations. These data were collected between August and December 1989 by a sampling procedure which randomly selected one in sixteen children. This was achieved by selecting those children whose birthday was on the 3rd or 30th of any month. Where a child's date of birth was unknown, they were fully enumerated, and the data in all tables are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown. The following sections briefly describe each table.

### Table 1: Demographic composition of the sample

The age composition of the sample is closely related to the main target groups of children served by the School Dental Service in New South Wales. For this reason, and because of the short collection period for the present report, children aged 4 years or 13 years and over are represented in smaller proportions than they would appear in the New South Wales population. Moreover, the small numbers of sampled children in these age groups results in less reliability of several computed statistics in subsequent tables and they have been suppressed where indicated. It is also important to note that the children who are outside the main target groups may differ on other key characteristics and statistics relating to children aged 4 years or 13 years and over may be less representative of the New South Wales population.

### Table 2: Country of birth including Aboriginality

This table describes the distribution of children and their mothers according to the stated country of birth or Aboriginality of each. Australian born children comprised 88.5 per cent (91.9 per cent when unknowns are excluded) of the sample, and 71.4 per cent of mothers (78.9 per cent excluding unknowns) were born in Australia. These figures are in line with the Australian population estimates for these age ranges (Australian Bureau of Statistics, 1990 Estimated Resident Population by Country of Birth, Age and Sex Australia Catalogue No 3221.0). In addition, the estimate of 1.2 per cent of children who are Aboriginal (1.3 per cent excluding unknowns) is comparable to the 1986 Population Census estimate of 1.8 per cent for children aged 5-14 years (Australian Bureau of Statistics, 1986 Census Table CA0029: Age by Aboriginal Origin by Sex [microfiche])

### Table 3: Deciduous teeth: age-specific prevalence

The dmft prevalence in children aged 5 to 9 varies across a reasonably narrow range, with an average of between 2.21 and 2.45. In contrast, there is a more than two fold difference in the mean number of decayed teeth among these ages, ranging from 0.92 to 1.96. The decline in dmft over the age of 7 should clearly be interpreted as an effect due to exfoliation of deciduous teeth as children grow older. It will be noted that the dmft prevalence is generally higher than that observed in 1986. While these differences may be due in part to differences in the sampled population, it should also be recalled that the index now includes teeth which are missing due to caries - a category which was not recorded in 1986. This modification to the index may account for much of the observed increase in dmft in these ages. Also apparent from this table is the magnitude of the d/dmf percentage,

particularly in the youngest children aged 5 and 6 years where more than sixty percent of the dmft index is due to decayed teeth.

#### **Table 4: Permanent teeth: age specific prevalence**

Compared with the deciduous dentition, there is a smaller mean number of decayed teeth in the permanent dentition for all ages up to 12 years. The mean DMFT increases fairly consistently across age groups, although the sharper increase in DMFT after the age of 12 probably reflects some special characteristics of School Dental Service patients in these ages. That is, they are probably less representative of the New South Wales population than the younger age groups. This table also demonstrates that a relatively high percentage of the DMFT index is attributable to untreated decay in younger children as reflected in the D/DMFT percentage. However children aged 11 and 12 year olds, less than 40 per cent of the DMFT index is due to untreated decay. In most ages, the D/DMFT percentage is similar to the corresponding percentage in the deciduous dentition.

#### **Table 5: All teeth: age specific prevalence**

The information in this table indicates firstly that 30 per cent or more of children in all ages have at least one actively decayed tooth in the permanent or deciduous dentition. Generally, younger children are more likely to have one or more decayed teeth, and this is a consequence of the relatively higher prevalence of active deciduous decay. Younger children are also more likely to be extensively affected with decay, as indicated by the range from 10.4 per cent to 21.1 per cent of 5 to 8 year olds with four or more decayed teeth in the combined deciduous and permanent dentition. It is encouraging to observe that older children are more likely to have no active decay, and that fewer than 10 per cent have four or more teeth affected by active decay.

This table also shows the very high percentage of children of all ages who have no teeth missing due to caries. Again, the statistics with respect to children aged 14 and over need to be interpreted with caution, since these patients may represent a relatively specialized group. Finally, this table demonstrates the clear pattern of age-associated reduction in the percentage of children who are free of filled or decayed, missing and filled teeth.

#### **Table 6: Fissure sealants**

It is apparent that fissure sealants are present in meaningful numbers of children aged between 7 and 12 years inclusive. It is worth noting that the mean number of fissure sealants in these ages is very similar to the mean number of decayed permanent teeth (Table 4). The table further divides the sample into children with no caries experience in the permanent dentition (DMFT=0) and those with some caries experience (DMFT=1+). Fissure sealants are approximately twice as frequent in children who have some caries experience, and this may indicate the preferential use of fissure sealants in cases of high risk.

#### **Table 7: Immediate treatment needs**

The categorisation of immediate treatment needs is a new item in the redesigned Child Dental Health Survey, and in this table the distribution of children with immediate treatment needs and some of their oral health characteristics are displayed. High percentages of children in need of immediate treatment were reported in all age groups, ranging from 11.7 to 20.4 per cent. There was a tendency for immediate treatment needs to

be more frequent among younger age groups. Moreover, there is some congruence between the need for immediate treatment and other indicators of oral health. The mean dmft and DMFT prevalence among those with immediate treatment needs was substantially higher than the population average (tables 3 and 4) and there was a very high percentage of children with four or more decayed teeth (combining deciduous and permanent dentitions). While it is not possible to conclusively ascertain the greatest cause of immediate treatment needs, it is apparent that the mean prevalence of deciduous caries experience (dmft) is particularly high among those with immediate treatment needs.

### Table 8: School Dental Service examinations

This table divides into a left and right portion. The percentage of all children who have had a previous School Dental Service examination is shown in columns 3 to 5. More than one half of children in the youngest ages (4 and 5) had not been previously examined, indicating that they received their first School Dental Service examination during 1989. It is surprising that this figure is not even higher since all children must be initially enrolled at some stage. There is a sharp age-associated decrease in the percentage of children receiving their first examination for those aged 6 to 8, and fewer than 10 per cent of children aged over 8 received an initial examination during 1989.

In columns 6 to 9, the group of children with a known previous examination in the School Dental Service are described with regard to the time since their last examination. The vast majority of re-examined children had been previously examined within 12 months. In the youngest ages, more than half of them had been examined within 6 months, although it needs to be recognized that this figure refers to only 89 children who had previously been examined.

There are no clear patterns of association with age, although there may be a tendency for older children to have received a previous examination more than 12 months ago. In most age groups, the majority of previous examinations had been conducted more than 12 months previously. A notable exception is the five year old group, where 51.9 per cent had attended within the previous 6 months. However it needs to be recognized that this percentage refers to only 89 children (29.9 per cent of 299 children) who were receiving a subsequent examination and where the time since last examination was known

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**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. The sampling procedure selects a constant proportion of children for whom date of birth is known by selecting only those children born on particular dates. In NSW the sampling ratio for children whose date of birth is known is 1:16. This ratio is achieved by selecting children whose date of birth is on the 3rd or 30th of any month. In addition, all children for whom date of birth is unknown are included in the sample.

The following table describes the number of records processed from children in New South Wales, as well as the number of children in the sample. The latter figure is weighted to attach more weight to those records which are sampled, and less weight to those records which are fully enumerated. The weighting corrects for the over-representation in the sample of children for whom date of birth is unknown.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

Age	NUMBER OF RECORDS PROCESSED						NUMBER OF CHILDREN IN SAMPLE <sup>1</sup>		
	TYPE OF SAMPLING						Males	Females	Persons
	Known Date of Birth			Age Only Known					
	Males	Females	Persons	Males	Females	Persons			
4 or less	10	13	23	1	0	1	10	13	24
5	142	138	280	18	12	30	150	145	295
6	204	193	397	16	25	41	215	204	419
7	235	222	457	16	12	28	247	233	481
8	255	247	502	9	12	21	268	260	527
9	234	218	452	10	5	15	246	229	475
10	232	208	440	11	9	20	244	219	462
11	211	194	405	3	3	6	221	203	425
12	132	107	239	3	1	4	138	112	251
13	36	34	70	1	0	1	38	36	73
14	13	14	27	1	1	2	14	15	28
15 or more	6	11	17	0	0	0	6	11	18
<b>Total</b>	<b>1710</b>	<b>1599</b>	<b>3309</b>	<b>89</b>	<b>80</b>	<b>169</b>	<b>1797</b>	<b>1680</b>	<b>3478</b>

<sup>1</sup> The number of children included in the sample equals the number of records sampled where date of birth is known plus the product of the number of records of children with unknown birthdate and sampling ratio. Second and subsequent examinations of children within the reporting period are eliminated. These are rounded numbers of children.

**TABLE 2: COUNTRY OF BIRTH (INCLUDING ABORIGINALITY)**

The country of birth of children is determined from information concerning birthplace of the child and mother. The coding scheme is described in Appendix A. The number and percentage of children in each group is provided in this State-specific report.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

COUNTRY OF BIRTH	CHILDREN		MOTHERS	
	Number <sup>1</sup>	%	Number <sup>1</sup>	%
1. Australia (non-Aboriginal)	3079	88.5	2,369	71.4
2. Australia (Aboriginal or TSI)	43	1.2	33	1.0
3. United Kingdom and Eire	30	.9	96	2.9
4. Other English-speaking	31	.9	52	1.6
5. Southern Europe	20	.6	128	3.9
6. Other European	14	.4	49	1.5
7. Middle East	33	.9	110	3.3
8. South East Asia	48	1.4	69	2.1
9. Other Asia	25	.7	51	1.5
10. Other	27	.8	46	1.4
11. Not known	111	3.2	265	8.0
12. Blank	17	.5	50	1.5
<b>Total</b>	<b>3,478</b>	<b>100.0</b>	<b>3,319</b>	<b>100.0</b>

<sup>1</sup> Data are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown. Data relating to second or subsequent examinations of children within this reporting period are eliminated.

**TABLE 3: DECIDUOUS TEETH: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

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 6 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 25 per cent, and population estimates of these indices are statistically unreliable.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

Age (years)	Number of Children in Sample <sup>2</sup>	decayed		dmft		d/dmft	Children with dmft=0
		mean	sd	mean	sd	%	%
4	24	*	*	*	*	64.5	56.4
5	295	1.96	3.43	2.45	3.75	76.6	48.2
6	419	1.38	2.39	2.21	3.24	66.6	47.7
7	481	1.22	1.99	2.34	2.90	53.7	42.4
8	527	0.92	1.58	2.22	2.72	42.7	42.0
9	475	0.94	1.64	2.21	2.66	44.8	40.9
10	462	0.65	1.19	1.80	2.49	38.8	49.3
11	425	0.43	1.09	1.13	2.01	38.6	62.9
12	251	0.22	0.67	0.75	1.45	31.4	70.7

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

<sup>2</sup> Data are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown. Data relating to second or subsequent examinations of children within this reporting period are eliminated.



**TABLE 4: PERMANENT TEETH: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

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 6 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 25 per cent, and population estimates of these indices are statistically unreliable.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

Age (years)	Number of Children in Sample <sup>2</sup>	DECAYED		DMFT		D/DMFT	Children with DMFT=0
		mean	sd	mean	sd	%	%
5	295	*	*	*	*	*	99.3
6	419	*	*	0.06	0.29	71.2	95.2
7	481	0.16	0.73	0.25	0.86	66.0	86.2
8	527	0.21	0.64	0.34	0.80	58.0	80.5
9	475	0.26	0.85	0.55	1.13	46.8	70.8
10	462	0.30	0.76	0.61	1.13	48.2	69.3
11	425	0.42	0.96	1.10	1.67	36.4	55.3
12	251	0.46	1.09	1.32	1.86	33.7	49.8
13	73	0.94	1.84	2.03	2.64	44.7	38.6
14	28	*	*	2.81	2.77	*	*
15	18	*	*	3.35	3.12	*	*

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

<sup>2</sup> Data are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown. Data relating to second or subsequent examinations of children within this reporting period are eliminated.



**TABLE 5: ALL TEETH: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

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 6 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 25 per cent, and population estimates of these indices are statistically unreliable.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

Age (years)	Number of Children in Sample <sup>2</sup>	% of Children with d+D=					% of Children with		
		0	1	2	3	4+	m+M=0	f+F=0	dmft+DMFT=0
4 or less	24	65.0	*	-	*	*	*	74.0	47.7
5	295	53.1	13.2	8.3	*	21.1	96.8	81.1	47.8
6	419	55.8	15.3	8.8	5.1	15.0	95.9	73.8	47.0
7	481	54.2	14.6	11.9	6.1	13.2	94.3	62.8	39.8
8	527	57.2	15.9	11.2	5.4	10.4	94.0	55.3	38.6
9	475	53.7	18.6	12.2	6.6	8.9	94.2	52.5	34.0
10	462	59.3	17.0	11.1	3.4	9.1	94.1	51.8	37.5
11	425	62.9	15.6	10.9	4.2	6.4	95.1	51.6	37.8
12	251	67.8	15.9	8.4	*	5.9	97.5	51.5	39.8
13	73	57.2	21.4	*	*	*	94.3	54.3	31.5
14	28	59.2	-	*	*	*	81.6	48.4	*
15 or more	18	*	*	*	*	*	82.4	*	*

- <sup>1</sup> 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

- <sup>2</sup> Data are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown. Data relating to second or subsequent examinations of children within this reporting period are eliminated.

**TABLE 6: FISSURE SEALANTS: AGE-SPECIFIC PREVALENCE<sup>1</sup>**

This table uses Statewide 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 6 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 25 per cent, and population estimates of these indices are statistically unreliable.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

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Age (years)	Number of Children in Sample <sup>2</sup>	Number of Sealants		CHILDREN WITH DMFT=0		CHILDREN WITH DMFT=1+	
		mean	sd	Number	% with F/S=1+	Number	% with F/S=1+
6	419	*	*	399	*	20	*
7	481	0.21	0.80	414	6.3	67	*
8	527	0.29	0.96	424	8.4	103	16.3
9	475	0.29	0.97	336	7.8	139	15.1
10	462	0.23	0.84	320	6.5	142	14.1
11	425	0.31	1.03	235	8.0	190	13.8
12	251	0.44	1.40	125	*	126	13.3
13	73	*	*	28	*	45	*
14	28	*	*	9	*	19	*
15	18	*	*	5	*	19	*

<sup>1</sup> Legend: DMFT - decayed, missing or filled permanent teeth

<sup>2</sup> Legend: F/S - number of fissure sealed teeth  
sd - standard deviation

**TABLE 7: IMMEDIATE TREATMENT NEEDS: AGE-SPECIFIC DISTRIBUTION<sup>1</sup>**

This table, based on Statewide 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 6 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 25 per cent, and population estimates of these indices are statistically unreliable.

State/Territory NEW SOUTH WALES

Sampling Ratio: 1:16

Data for period August-December 1989

Date of Report: August 23, 1990

**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	24	2	*	*	*	-	-	-	-	-	*	*
5	295	60	20.4	6.41	4.60	*	*	-	*	*	*	61.3
6	419	73	17.4	5.21	4.15	*	*	*	18.7	17.2	*	46.8
7	481	84	17.5	4.84	2.98	0.53	1.01	*	26.2	20.0	*	38.9
8	527	86	16.3	4.04	2.86	0.77	1.12	*	28.0	26.8	*	35.4
9	475	77	16.2	4.27	2.68	0.96	1.26	*	20.6	30.1	17.7	30.3
10	462	53	11.4	3.68	2.79	1.54	1.57	-	28.1	*	*	37.9
11	425	61	14.3	2.23	2.47	1.96	2.08	*	34.5	29.2	*	20.8
12	251	29	11.7	*	*	3.00	2.42	*	*	*	*	*
13	73	14	18.6	*	*	4.54	3.81	-	*	*	*	53.8
14	28	5	*	*	*	*	*	-	-	*	*	*
15	18	3	*	-	-	5.67	1.51	-	*	*	-	*

<sup>1</sup> 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<sup>1</sup>**

This table describes the percentage distribution of children who have received dental examination within specified time periods. 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 25 per cent, and population estimates of these percentages are statistically unreliable.

State/Territory NEW SOUTH WALES

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Age (years)	Number of Children Examined	PREVIOUS EXAMINATION IN SCHOOL DENTAL SERVICE			CHILDREN WITH KNOWN DATE OF PREVIOUS EXAMINATION			
		% of children			Months since last examination <sup>2</sup> (%)			
		No	Yes	Unknown	0-6	7-12	13-24	25+
4	24	56.6	39.0	*	*	*	*	8.0
5	299	60.2	29.9	9.9	51.9	41.1	*	*
6	422	35.2	52.7	12.1	29.0	48.3	19.4	*
7	488	19.4	69.5	11.1	28.2	46.1	18.2	7.4
8	534	11.6	78.1	10.3	23.1	48.5	19.1	9.3
9	481	10.7	79.1	10.1	27.0	45.2	19.3	8.6
10	466	9.7	80.8	9.5	22.9	42.9	22.9	11.4
11	431	5.3	85.9	8.8	21.0	41.9	21.8	15.3
12	257	*	86.9	9.8	27.2	37.1	22.5	13.2
13	75	*	82.0	*	*	44.1	32.2	*
14	29	*	64.2	*	*	*	*	44.6
15	18	*	82.4	*	*	*	*	*

<sup>1</sup> Data are weighted to correct for the over-representation in the sample of children for whom date of birth is unknown.

<sup>2</sup> Excludes those with no previous examination and where the date of previous examination is unknown.

**APPENDIX A: CODING SCHEME FOR COUNTRY OF BIRTH**

<b>CODE</b>	<b>BIRTHPLACE</b>	<b>CODE</b>	<b>BIRTHPLACE</b>
01	Australia - non-Aboriginal	07	Middle East (West Asia) includes: Cyprus Iraq Israel Lebanon Syria Turkey
02	Australia - Aboriginal/Torres Islander	08	South Eastern Asia includes: Burma Indonesia Kampuchea Malaysia Philippines Singapore Vietnam
03	United Kingdom and Ireland (includes Republic of Ireland)	09	Other Asia includes: China Hong Kong India Iran Japan Pakistan Sri Lanka
04	Other English speaking countries (i.e. New Zealand, South Africa, USA and Canada)	10	Other includes: Argentina Chile Egypt Fiji Mauritius Papua New Guinea Uruguay
05	Southern European includes: Greece Italy Malta Spain Yugoslavia	11	Not Known
06	Other European includes: Austria Czechoslovakia Germany Netherlands Poland Sweden USSR	12	Blank (not used)