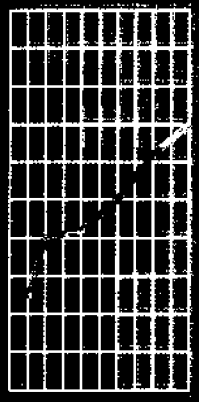
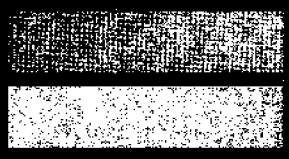
April 1995

Children's Immunisation Australia





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CHILDREN'S IMMUNISATION AUSTRALIA APRIL 1995

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AUSTRALIAN BUREAU OF STATISTICS

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INQUIRIES

- *for further information about these statistics and the availability of related unpublished statistics,* contact Brian Richings on Canberra (06) 252 5786.
- *for information about other* ABS *statistics and services,* please refer to the back page of this publication.

PREFACE

This publication provides statistics on the immunisation levels of children in Australian against vaccine preventable diseases. These statistics were compiled from a national survey conducted by the ABS in April 1995.

Immunisation coverage goals for the year 2000, recommended by the National Health and Medical Research Council (NH&MRC), call for 90 per cent or more coverage of children at two years of age and near universal coverage of children at school-entry age against Diphtheria, Tetanus, Pertussis (Whooping Cough), Poliomyelitis, Measles, Mumps, Rubella and Hib (*Haemophilus influenzae* type b).

Immunisation levels described in this publication have been calculated mainly using the current NH&MRC Standard Childhood Vaccination Schedule, introduced in August 1994. For comparison purposes, some statistics of immunisation levels calculated using the 1991 edition of the Schedule are also provided.

The statistics contained in this publication represent a selection of those available from the survey.

W. McLennan
Australian Statistician

Australian Bureau of Statistics
January 1996

SUMMARY OF FINDINGS

IMMUNISATION STATUS

In this publication immunisation status is described as fully, partly or not immunised, and may refer to immunisation status against a particular condition or status against all conditions covered by the Standard Childhood Vaccination Schedule. A child is classified as fully immunised against a particular condition if he/she has received the number of vaccinations for that condition appropriate to his/her age as specified in the Schedule. A child who has received some vaccinations against a condition, but not the required number of vaccinations for his/her age is classified as partly immunised against that condition. Only those children who have received all the vaccinations appropriate to their age for all the conditions covered in the Schedule are considered fully immunised overall.

The derivation of immunisation status does not take account of any factors which may compromise the immunity of a child, such as problems in maintenance of the cold chain (during vaccine distribution or storage) or reduced vaccine efficacy, nor does it take account of immunity acquired through exposure to a disease.

In April 1995, proportionately more children aged 3 months to 6 years were fully immunised against Measles and Mumps (91.6% and 89.6%, respectively) than against other conditions covered by the Schedule. This in part reflects the single dose vaccine used for these conditions, although the proportion of children fully immunised against Rubella, which is also covered by a single dose vaccine, was substantially lower (75.5%). The lowest proportion of fully immunised children (50.5%) was recorded for *Haemophilus influenzae* type b (Hib), which may be due to the relatively recent inclusion (April 1993) of this vaccine in the Schedule.

Levels of immunisation cover were similar for males and females for all conditions, except Rubella. A higher proportion of females than males were fully immunised against Rubella (80.3% and 71.0%), reflecting a perception that Rubella vaccination is only required for females (see Table 11).

1 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 6 YEARS: CONDITION BY SEX, AUSTRALIA, APRIL 1995

	Diphtheria/ Tetanus	*Pertussis*	*Polio*	*Measles*[1]	*Mumps*[1]	*Rubella*[1]	*Hib*
	%	%	%	%	%	%	%
Males	67.9	59.5	81.8	91.2	88.6	71.0	49.9
Females	69.4	60.4	83.4	92.0	90.6	80.3	50.5
Total	**68.6**	**59.9**	**82.6**	**91.6**	**89.6**	**75.5**	**50.2**

[1] Children aged one year or less have been excluded from estimates for Measles, Mumps and Rubella.

The following table shows the proportion of children at April 1995 who were fully immunised in terms of the current (1994) and previous (1991) Schedules, and those identified as fully immunised in a previous survey conducted by the ABS in 1989-90. Results from the April 1995 survey are not directly comparable with estimates of immunisation status from the earlier survey due to changes in the Schedule which have occurred

between the surveys, and to differences in the collection methodologies used.

2 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 6 YEARS: CONDITION BY IMMUNISATION SCHEDULE, AUSTRALIA, 1989–90 AND APRIL 1995

Period/schedule	Diphtheria/ Tetanus	Pertussis[1]	Polio	Measles[2]	Mumps[2]	Rubella[2,3]	Hib[4]	All conditions
	%	%	%	%	%	%	%	%
April 1995 — current	68.6	59.9	82.6	91.6	89.6	75.5	50.2	33.1
— previous	68.6	66.8	82.6	91.6	89.6	75.5	..	52.1
1989–90 — previous	88.5	72.6	74.0	86.0	80.5	..	..	54.1

[1] CDT booster at 4 - 5 years (or prior to school entry) was replaced by DTP, August 1994.
[2] Children aged one year or less have been excluded from estimates for Measles, Mumps and Rubella.
[3] Vaccination against Rubella at one year of age was introduced from 1991.
[4] Requirement for vaccination against Hib was introduced in April 1993.

The impact of changes in the recommended immunisation schedule on immunisation levels can be seen in the differences in the April 1995 estimates calculated using the current and previous schedules. These changes have led to an overall fall from 52.1% to 33.1% of children in this age group classified as fully immunised. Introduction of the Hib vaccine was the major factor contributing to this fall in immunisation cover. Other changes between the current and the previous schedules are explained in paragraph 11 of the Explanatory notes.

The marked fall between 1989-90 and April 1995 in the proportion of children fully immunised against Diphtheria and Tetanus, and to a lesser extent against Pertussis, may result from the collection of more detailed information on age of child in the 1995 survey, enabling immunisation status to be derived more accurately than was possible from the earlier survey.

STATES AND TERRITORIES

The proportion of children who were fully immunised against all conditions covered by Schedule differed between States and Territories (Table 3); the highest levels were recorded in the Australian Capital Territory and Western Australia, the lowest in Tasmania and Queensland.

3 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 6 YEARS: TYPE OF IMMUNISATION SCHEDULE BY STATES AND TERRITORIES, APRIL 1995

Schedule	NSW	Vic.	Qld	SA	WA	Tas.	NT[1]	ACT	Australia	
	%	%	%	%	%	%	%	%	%	'000s
Current schedule[2]										
Males	31.4	33.4	27.9	27.8	39.1	24.0	40.5	49.0	31.9	284.1
Females	32.8	35.3	30.1	36.1	44.0	29.6	32.2	45.9	34.4	290.8
Total	*32.1*	*34.3*	*28.9*	*31.8*	*41.5*	*26.8*	*36.5*	*47.5*	*33.1*	*574.9*
Previous schedule[2]										
Males	50.5	50.1	45.6	45.5	55.0	38.5	48.8	64.7	49.5	440.7
Females	57.3	52.4	49.4	54.1	63.8	47.7	58.5	62.2	54.9	463.8
Total	*53.9*	*51.2*	*47.5*	*49.7*	*59.3*	*43.0*	*53.5*	*63.5*	*52.1*	*904.5*

[1] Estimates relate to predominantly urban areas only.
[2] For differences between the current (1994) and previous (1991) schedules see Table 2 or Explanatory notes.

RECORDS/CARDS

Respondents were encouraged to refer to immunisation or child health records when answering the questions in the survey, in order to ensure the accuracy of the information reported. Records were consulted for just over 60.0% of children aged 3 months to 6 years in the survey.

As shown in Table 4, the use of records at interview had a marked effect on the immunisation status recorded. For all conditions covered by the Schedule, a substantially higher proportion of children for whom records were consulted were classified fully immunised, than children for whom records were not consulted. This should be considered when interpreting the other statistics contained in this publication. For example, of those children aged 3 months to 6 years for whom records were consulted, 46.2% were fully immunised against all conditions covered by the Schedule, which is well above the 33.1% fully immunised calculated for all children in this age group (see Table 2).

4 CHILDREN AGED 3 MONTHS TO 6 YEARS: IMMUNISATION STATUS BY CONDITION BY WHETHER CONSULTED CARDS/RECORDS, AUSTRALIA, APRIL 1995

	Diphtheria/ Tetanus	*Pertussis*	*Polio*	*Measles*[1]	*Mumps*[1]	*Rubella*[1]	*Hib*
	%	%	%	%	%	%	%
Fully Immunised							
Cards/records consulted	72.2	74.4	67.6	61.6	62.6	66.2	73.9
Cards/records not consulted	27.8	25.6	32.4	38.4	37.4	33.8	26.1
Partly Immunised							
Cards/records consulted	43.3	46.8	41.4	..	..	..	72.1
Cards/records not consulted	56.7	53.2	58.6	..	..	..	27.9
Not Immunised							
Cards/records consulted	23.6	38.0	15.4	32.5	31.1	40.3	46.3
Cards/records not consulted	76.4	62.0	84.6	67.5	68.9	59.7	53.7
Not Known							
Cards/records consulted	5.9	5.9	6.2	*6.5	7.5	14.9	39.2
Cards/records not consulted	94.1	94.1	93.8	93.5	92.5	85.1	60.8

[1] Children aged one year or less were excluded from estimates for Measles, Mumps and Rubella.

The percentage of children for whom records were consulted during interview varied between States and Territories (Table 5). The highest levels of record use were in the Australian Capital Territory and Western Australia (73.2% and 71.8%, respectively). Records were consulted for fewer than half (47.2%) of the children surveyed in Queensland. These differences may, in part, explain the variations between States and Territories in the proportions of children fully immunised, as reported in Table 3.

5 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 6 YEARS: WHETHER RECORDS CONSULTED AND IMMUNISATION STATUS BY WHETHER CONSULTED RECORDS, STATES AND TERRITORIES, APRIL 1995

	NSW	Vic.	Qld	SA	WA	Tas.	NT[1]	ACT	Australia
	%	%	%	%	%	%	%	%	%
Whether consulted cards/records									
Yes	60.4	64.8	47.2	65.0	71.8	53.9	61.9	73.2	60.6
No	39.6	35.2	52.8	35.0	28.2	46.1	38.1	26.8	39.4
Cards/records consulted									
Fully immunised	44.7	46.1	45.1	42.3	53.4	40.7	54.7	55.5	46.2
Cards/records not consulted									
Fully immunised	12.8	12.6	14.4	12.3	10.9	10.5	*7.0	25.4	13.0

[1] Estimates relate to predominantly urban areas only.

AGE OF CHILDREN

Estimates showed that the proportion of children considered fully immunised declined with age (Table 6). The general decline with age in the proportions of fully immunised children is evident for all diseases covered by the Schedule except Measles and Mumps. For both these diseases, the proportions of fully immunised children remained relatively high for most age groups in comparison to other diseases. The single dose vaccine used for these conditions may be a factor in this result.

6 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 6 YEARS: CONDITION BY AGE, AUSTRALIA, APRIL 1995

	Diphtheria/ Tetatnus	Pertussis	Polio	Measles	Mumps	Rubella	Hib
Age of child	%	%	%	%	%	%	%
3 to 6 months	92.5	92.0	92.0	..	..	..	76.3
Total under 1 year	84.0	82.7	83.1	..	..	..	55.4
1 year	88.5	86.2	86.3	85.5	84.7	79.6	62.3
2 years	63.0	57.5	86.9	91.4	90.1	81.1	52.4
3 years	61.5	55.6	87.9	92.8	90.7	79.7	54.7
4 years	64.5	57.4	86.9	93.9	90.7	77.6	57.8
5 years	77.3	68.4	86.5	93.7	92.2	72.5	43.2
6 years	45.2	17.2	60.2	91.7	88.4	62.8	26.6

For Diphtheria, Tetanus and Pertussis the proportion of fully immunised children dropped noticeably at two years of age. For example, whereas 88.5% of children one year old were fully immunised against Diphtheria/Tetanus, only 63.0% of children two years of age were fully immunised against these conditions. A possible explanation for this decline is the omission of the DTP (Triple Antigen) booster, required at 18 months.

7 FULLY IMMUNISED CHILDREN: CONDITION BY SELECTED AGE GROUPS, STATES AND TERRITORIES, APRIL 1995

State/Territory	Diphtheria/ Tetanus	Pertussis	Polio	Measles	Mumps	Rubella	Hib	All conditions: current schedule[1]	All conditions: previous schedule[1]
	%	%	%	%	%	%	%	%	%
CHILDREN AGED 1 YEAR									
New South Wales	88.2	87.1	87.9	90.7	90.3	83.4	63.1	53.7	73.7
Victoria	91.7	89.6	87.9	87.4	86.9	84.9	65.6	54.4	76.7
Queensland	83.4	79.3	82.7	84.2	82.5	77.6	52.5	41.2	61.6
South Australia	89.7	86.1	85.1	80.4	80.4	78.9	57.2	45.4	66.5
Western Australia	88.3	86.7	83.9	83.1	83.1	77.0	71.0	60.1	69.0
Tasmania	91.2	86.8	91.2	75.0	72.1	67.6	63.2	44.1	61.8
Northern Territory[2]	88.9	85.2	70.4	88.9	85.2	81.5	70.4	*59.3	*63.0
Australian Capital Territory	91.1	86.7	86.7	86.7	86.7	86.7	68.9	55.6	71.1
Australia	*88.5*	*86.2*	*86.3*	*86.8*	*86.0*	*81.4*	62.3	51.4	70.8
CHILDREN AGED 2 YEARS									
New South Wales	63.2	59.7	85.9	89.3	86.9	76.3	48.7	33.6	54.2
Victoria	58.4	52.4	88.2	92.5	92.0	85.2	55.6	34.4	47.6
Queensland	68.2	59.5	86.9	93.2	92.4	79.0	53.6	33.1	50.4
South Australia	57.9	50.8	89.3	91.9	90.9	87.8	52.8	31.0	47.2
Western Australia	70.4	66.0	90.3	91.5	91.1	81.8	58.3	42.5	58.3
Tasmania	52.2	47.8	77.6	89.6	86.6	79.1	40.3	*23.9	37.3
Northern Territory[2]	65.4	65.4	61.5	99.9	99.9	99.9	46.2	38.5	53.8
Australian Capital Territory	62.2	60.0	84.4	93.3	93.3	93.3	55.6	42.2	57.8
Australia	*63.0*	*57.5*	*86.9*	*91.5*	*90.1*	*81.1*	52.4	34.3	51.3
CHILDREN AGED 6 YEARS									
New South Wales	47.4	20.0	59.6	87.8	84.9	58.7	22.8	*2.4	23.3
Victoria	39.4	15.5	56.0	94.9	93.1	72.5	30.1	*2.9	18.6
Queensland	44.8	18.4	58.7	90.6	84.2	55.7	20.1	*3.2	18.2
South Australia	44.2	15.6	70.9	94.5	94.5	57.8	32.2	*5.5	22.1
Western Australia	54.8	14.7	67.6	96.1	90.7	67.2	34.4	2.3	29.7
Tasmania	32.9	*8.6	48.6	92.9	90.0	61.4	22.9	**2.9	*10.0
Northern Territory[2]	39.1	**	69.6	82.6	82.6	78.3	43.5	**0.0	*21.7
Australian Capital Territory	61.4	*15.9	72.7	99.9	97.7	70.5	50.0	*11.4	36.4
Australia	*45.2*	*17.2*	*60.2*	*91.7*	*88.4*	*62.8*	26.6	3.1	21.6

[1] For differences between the current (1994) and previous (1991) schedules see Table 2 or Explanatory notes.

[2] Estimates relate to predominantly urban areas only.

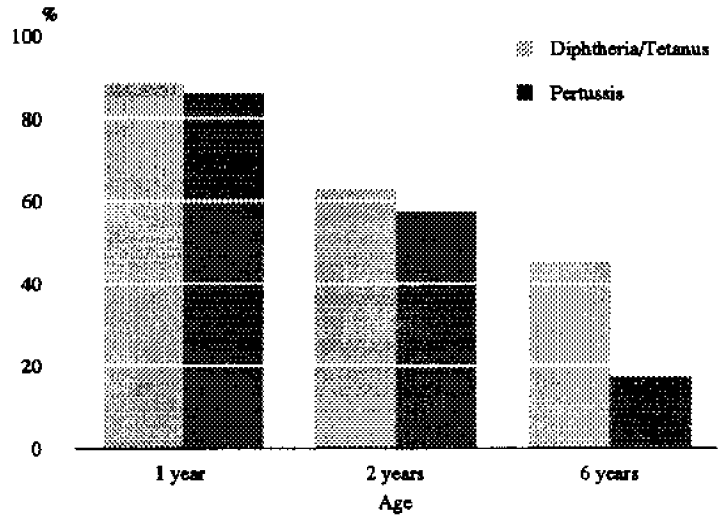
One of the changes between the current and previous immunisation schedules was the introduction of a DTP booster at four to five years of age (or prior to school entry). Previously a Combined Diphtheria Tetanus (CDT) vaccine was recommended for this age group. This difference may explain the relatively low proportions of children aged six years who were fully immunised against Pertussis. If status of immunisation against Pertussis is derived using the CDT rather than the DTP (as recommended

by the previous schedule), the proportion of children (aged six years) who were fully immunised against Pertussis increases to 64.2%.

The proportion of those fully immunised against Polio remained similar for children of all ages, except for those aged six years. Unlike the schedule for DTP, vaccination against Polio does not require a booster at 18 months of age, however one is required at four to five years (or prior to school entry).

Proportions of children fully immunised against Hib were lower than for any other disease on the schedule at all ages.

CHILDREN: FULLY IMMUNISED AGAINST DIPHTHERIA, TETANUS AND PERTUSSIS



WHERE IMMUNISED

As shown in the Table below, more children had received their vaccinations at a doctor's surgery than any other location. The higher proportion of children who had received a Hib vaccine at a doctor's surgery compared with other vaccines, reflects the relatively recent inclusion of this vaccine in the recommended schedule.

8 CHILDREN 3 MONTHS TO 6 YEARS WHO HAD BEEN IMMUNISED: WHERE IMMUNISED BY TYPE OF VACCINE, AUSTRALIA, APRIL 1995

	DTP (TA)	*OPV*[1]	*Measles*	*Mumps*	*Rubella*	*Hib*	*CDT*	*Total*
Location[2]	%	%	%	%	%	%	%	'000s
Doctor's surgery	63.3	62.4	61.4	61.1	61.2	73.6	64.3	1 255.7
Local council	22.5	22.5	18.7	19.0	19.2	14.3	15.1	417.2
Baby health clinic	17.3	18.3	14.8	14.8	14.5	10.0	12.8	332.1
School/kindergarten	1.5	1.8	0.2	0.2	0.3	0.2	3.8	42.1
Hospital	2.4	2.5	2.1	2.1	2.0	2.0	2.5	62.5
Other health establishment	2.2	2.3	2.0	2.0	2.0	1.8	2.7	47.3
Other	0.7	0.8	1.3	1.3	1.4	0.7	0.9	23.6
Not known	*0.0	*0.1	0.2	0.2	*0.2	*0.2	*0.4	6.6

[1] Sabine vaccine.

[2] Respondents may have reported more than one location of vaccination, therefore components cannot be added to a total.

BABY HEALTH CLINICS

In addition to immunisation details, the survey collected information about the use of baby health clinics (centres). In an attempt to establish patterns of clinic usage and regularity of visits, questions were asked about whether children, aged from one month to three years, had been examined at specific ages. A child who had been seen at each of the specific times appropriate for his/her age as recommended in ***Review of Child Health Surveillance and Screening***, (NH & MRC 1993) was considered to have had regular checks at the clinics. Children who had not been to each examination were considered irregular and those who had not visited a clinic were considered to be not checked.

For all diseases covered by the recommended immunisation schedule, a higher proportion of those children who had been regularly checked at the clinics were fully immunised.

9 FULLY IMMUNISED CHILDREN AGED 3 MONTHS TO 3 YEARS : CONDITION BY VISITS TO BABY HEALTH CLINICS, AUSTRALIA, APRIL 1995

	Diphtheria/ Tetanus	*Pertussis*	*Polio*	*Measles*[1]	*Mumps*[1]	*Rubella*[1]	*Hib*	*Total*
Visits[2]	%	%	%	%	%	%	%	'000s
Regular	77.8	74.1	90.1	93.3	91.6	84.4	62.1	542.0
Irregular	71.0	67.2	83.9	87.9	87.0	78.0	52.7	301.9
Not checked	61.7	56.9	75.5	80.8	78.8	64.7	37.0	97.8
Not known	55.7	47.9	70.1	79.4	79.4	70.6	45.7	19.1

[1] Children aged one year or less were excluded from estimates for Measles, Mumps and Rubella.

[2] Age groups selected in deriving type of checks were approximate to those recommended by the Schedule of Child Health Surveillance, *Review of Child Health Surveillance and Screening, NH & MRC 1993.*

FAMILY CHARACTERISTICS

When immunisation status of children is examined in terms of selected family characteristics notable differences in the proportions of children identified as fully immunised occur by family type, language spoken at home and income (Table 10).

Higher proportions of children from couple families were considered fully immunised against all diseases recommended on the current schedule. For example, 84.9% of children from couple families were fully immunised against Polio, compared with 69.2% from one–parent families. This difference between children from couple and one–parent families remained consistent when other family characteristics such as country of origin and parental labour force status were examined.

For all conditions, the proportions of children fully immunised were higher among children from families where English was spoken at home than families where other languages were spoken. For example, of those children from families who usually spoke English at home 51.5% were fully immunised against Hib compared with 33.6% of children from other families.

Children from families with higher weekly income were also more likely to be fully immunised than those children from families with a lower weekly income.

10 CHILDREN AGED 3 MONTHS TO 6 YEARS FULLY IMMUNISED : CONDITION BY SELECTED FAMILY CHARACTERISTICS, AUSTRALIA, APRIL 1995

Family characteristic	*Diphtheria/ Tetanus* %	*Pertussis* %	*Polio* %	*Measles*[1] %	*Mumps*[1] %	*Rubella*[1] %	*Hib* %	*Total* '000s
Family type								
Couple families	71.2	62.3	84.9	92.4	90.5	76.7	52.7	1 473.6
One–parent families	54.2	46.3	69.2	87.5	84.5	69.0	35.9	261.6
Language usually spoken at home								
English	69.3	60.5	83.5	92.1	90.1	75.9	51.5	1 604.0
Language other than English	59.5	52.7	71.2	85.1	82.4	70.7	33.6	131.3
Country of origin of parent(s)								
Couple families								
Both parents born in Australia	73.1	64.3	86.9	93.9	92.1	77.1	55.6	963.7
Both parents born in other main English speaking countries[2]	67.5	56.1	84.2	90.6	89.6	80.7	47.4	63.3
Both parents born in non-English speaking countries	60.7	52.3	74.7	87.2	84.4	71.8	38.4	195.5
One parent born in main English speaking country	72.7	64.2	85.5	91.4	89.5	78.3	54.2	251.1
One–parent families								
Parent born in Australia or other main English speaking country[2]	54.7	46.3	70.4	87.3	84.4	67.9	37.3	227.4
Parent born in non-English speaking country	51.1	45.6	61.2	89.0	84.5	76.8	26.5	34.2
Labour force status of parent(s)								
Couple families								
Both employed full–time	64.0	55.9	82.9	91.5	88.4	75.5	46.6	194.1
Both employed other[3]	73.7	64.4	87.4	94.3	93.0	78.5	58.4	472.8
One employed	73.3	64.2	85.6	92.5	90.6	77.3	53.8	665.5
One or both unemployed	64.5	57.0	77.2	86.8	85.7	72.9	37.4	95.8
Both not in labour force	58.1	51.5	74.7	84.9	81.9	63.7	36.9	45.4
One–parent families								
Employed full–time	54.4	47.0	72.5	88.4	86.2	68.9	37.3	31.5
Employed other	54.4	43.1	70.3	86.5	82.3	66.8	38.2	46.4
Unemployed	54.2	48.5	65.3	93.9	91.5	75.7	36.2	28.4
Not in labour force	54.1	46.6	68.8	86.4	83.4	68.5	34.9	155.3
Weekly income of parent(s)								
Under $240	61.0	52.9	73.1	87.5	85.2	69.9	39.7	108.9
$240 – $499	62.6	54.5	77.3	89.7	87.6	72.9	42.4	433.9
$500 – $759	71.1	61.9	85.8	91.9	89.1	75.8	52.4	471.4
$760 – $1 000	76.3	67.7	86.9	92.8	91.7	78.5	56.5	283.6
Over $1 000	72.2	62.9	87.3	94.4	93.0	78.2	58.7	326.9
Not stated	58.4	50.4	73.6	90.3	87.4	74.1	40.1	110.5

[1] Children aged one year or less were excluded from estimates for Measles, Mumps and Rubella.
[2] Other main English speaking countries include: Canada, Repulic of Ireland, New Zealand, South Africa, United Kingdom and United States of America.
[3] One or both parents employed part-time.

REASONS NOT IMMUNISED

For those children who had not been immunised against a particular disease, information on the main reason for not being immunised was collected. Too young was the main reason most commonly stated for all conditions except Rubella and Hib. However, all children represented in the table below were over the required age for 1st dose for all vaccines recommended by the schedule. The most commonly reported reason for children not being immunised against Hib was that the parent (or person responsible for the child) had not heard of the vaccine (37.8%). For almost a third (32.3%) of children who had not been immunised against Rubella, the main reason given was that it was only for girls.

11 CHILDREN AGED 3 MONTHS TO 6 YEARS NOT IMMUNISED : CONDITION BY MAIN REASON NOT IMMUNISED, AUSTRALIA, APRIL 1995

Reasons not vaccinated	*Diphtheria/ Tetanus or Pertussis* %	*Polio* %	*Measles*[1] %	*Mumps*[1] %	*Rubella*[1] %	*Hib* %
Advised against it	*8.3	*5.6	*2.3	*1.8	1.1	3.4
Concerned about side effects	*6.6	*3.3	6.5	5.6	2.2	3.2
Hadn't heard of it	10.1	*6.7	6.6	10.6	5.3	37.8
Hadn't got around to it	14.5	19.7	26.2	24.4	14.0	11.3
Opposed to immunisation	18.4	16.7	5.7	4.7	1.9	1.8
Sick when due for immunisation	*7.4	*6.7	9.8	8.0	3.3	1.5
Too expensive	..	..	**0.4	**0.3	*0.3	3.0
Too young	25.4	31.6	30.0	29.7	28.9	7.8
Vaccine not available/given	**0.9	*2.2	3.1	3.5	5.7	7.8
Boy (rubella injection for girls only)	..	..	..	..	32.3	..
Hib – too old/out of danger age	..	..	..	..	..	16.8
Other	*7.4	*7.4	9.3	11.4	5.1	5.7

[1] Children aged one year or less were excluded from estimates for Measles, Mumps and Rubella.

OTHER VACCINATIONS

In addition to information about vaccinations recommended in the Standard Childhood Vaccination Schedule, the survey collected information about selected other types of vaccination. As shown in Table 12, 22.3% of children aged less than 15 years had received a tetanus vaccination, other than in DTP or CDT form. However, as no information about the immunisation history of children aged more than six years was collected, assumptions about the immunisation status of these children against Tetanus cannot be made. Some 16.0% had received at least one vaccination against Hepatitis B, and less than 2% had received a vaccination against Hepatitis A.

12 CHILDREN AGED 0 TO 14 YEARS: TYPE OF OTHER VACCINATION BY AGE, AUSTRALIA, APRIL 1995

	0–2 years	*3–4 years*	*5–6 years*	*7–8 years*	*9–10 years*	*11–12 years*	*13–14 years*	*Total*
Type of other vaccine	%	%	%	%	%	%	%	'000s
Tetanus[1]	1.5	4.2	9.0	18.9	28.8	45.9	58.2	857.3
Hepatitis B	18.3	19.3	16.4	15.0	13.1	14.1	14.6	614.9
Tuberculosis	1.8	2.1	3.1	4.4	5.3	7.2	12.4	190.9
Monovalent Pertussis[2]	2.0	2.1	3.2	5.2	5.6	6.4	6.9	166.0
Influenza	1.2	2.0	3.3	3.2	4.1	3.6	5.2	118.3
Hepatitis A	0.8	1.6	1.7	1.7	1.9	2.3	2.2	64.9

[1] Relates to a vaccine against Tetanus only: excludes Tetanus vaccination received in DTP or CDT form.

[2] Excludes Pertussis vaccination received in DTP form.

Proportions of children who had received other vaccinations were similar between States and Territories for most vaccines (Table 13). For all types of other vaccinations asked about in the survey, a higher proportion of children in the Northern Territory had received a vaccination than children elsewhere in Australia. This was particularly evident for Hepatitis B and Tuberculosis.

13 CHILDREN AGED 0 TO 14 YEARS: TYPE OF OTHER VACCINATION, STATES AND TERRITORIES, APRIL 1995

	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*[1]	*ACT*	*Total*
Type of other vaccine	%	%	%	%	%	%	%	%	'000s
Tetanus[2]	22.0	20.5	26.3	20.4	21.4	23.4	28.9	19.7	857.3
Hepatitis B	22.5	12.0	17.3	8.3	8.1	6.3	31.9	18.7	614.9
Tuberculosis	4.3	4.3	7.2	4.7	4.2	3.3	18.2	4.5	190.9
Monovalent Pertussis[3]	6.1	3.0	3.7	3.7	2.9	4.0	8.4	3.5	166.0
Influenza	2.8	2.6	3.6	3.5	3.9	2.9	4.2	3.2	118.3
Hepatitis A	1.6	1.5	2.0	1.0	2.2	1.3	5.0	2.9	64.9

[1] Estimates relate to predominantly urban areas only.

[2] Relates to a vaccine against Tetanus only: excludes Tetanus vaccination received in DTP or CDT form.

[3] Excludes pertussis vaccination received in DTP form.

EXPLANATORY NOTES

INTRODUCTION

1 In April 1995, a survey was conducted throughout Australia to obtain information on children's immunisation and health screening. National information on these topics was previously collected by the ABS in the 1989–90 National Health Survey, 1983 Children's Immunisation Survey and the Sight, Hearing and Dental Health Survey, conducted in 1979.

SCOPE

2 The survey was conducted as part of the regular monthly population survey, which is based on a national multi-stage area sample of about 30,000 private dwellings covering about one-half of 1% of the population of Australia.

3 Information relating to children's immunisation and health screening was obtained only for those children:

- who were aged less than 15 years;
- who were usual residents of private dwellings; and
- whose parents (guardians) were in on scope and coverage.

4 Persons excluded from the survey under scope and coverage rules were:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments customarily excluded from census and estimated populations;
- overseas residents in Australia;
- members of non-Australian defence forces (and their dependents) stationed in Australia; and
- visitors to private dwellings.

METHODOLOGY

5 Interviews were conducted over a period of two weeks in April 1995. Trained interviewers obtained information about children's immunisation and health screening from occupants of selected dwellings, where there was at least one child aged 14 years or less. Some 14,800 children aged 0 to 14 years were covered by the survey.

6 Where possible the information was obtained from the child's mother or a female guardian, otherwise the father or a male guardian responded. Information was provided by the mother/female guardian for 88.5% of children covered by the survey. If a parent or guardian of the child was not available, another adult who was identified as being responsible for the child was interviewed.

RELIABILITY OF ESTIMATES

7 In an effort to ensure the accuracy of the information provided about immunisation and screening checks, respondents were encouraged to refer to children's personal health records during interview whenever possible. Records were consulted for 60.6% of children aged from 3 months to 6 years covered by the survey. However, where records were consulted, no indication of the currency of the records/cards was obtained.

8 Estimates derived from the survey are obtained using a complex ratio estimation procedure which ensures that the estimates conform to an independently estimated distribution of the population by age and sex rather than to the age and sex distribution within the sample itself.

Estimates for the Northern Territory relate only to children in predominantly urban areas.

9 Estimates in this publication are subject to two sources of error:

- Non-sampling error: inaccuracies may occur because of imperfections in reporting by respondents and interviewers, and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and efficient operating procedures.

- Sampling error: since the estimates in this publication are based on information obtained from occupants of a sample of dwellings they are subject to sampling variability; that is they may differ from the figures that would have been produced if all dwellings had been included in this survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included, and about nineteen chances in twenty that the difference will be less than two standard errors. Another measure of the likely difference is the relative standard error (RSE), which is obtained by expressing the standard error as a percentage of the estimate. For example, from Table 4 the estimated number of persons aged 3 months to 6 years who were not immunised and who reported consulting cards during interview was 251,800. From the following table it will be seen that an estimate of this size has a standard error of about 3,800. Therefore, there are about two chances in three that the value that would have been produced if all dwellings had been included in the survey will fall within the range of 248,000 to 255,600 and about nineteen chances in twenty that the value will fall within the range 244,200 to 259,400.

STANDARD ERRORS AND RELATIVE STANDARD ERRORS FOR ESTIMATES OF CHILDREN AGED 0 TO 6 YEARS, STATES AND TERRITORIES, APRIL 1995

Size of estimate	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Australia	
									SE	RSE %
100				150		100	90	90	100	100.9
200			240	200	210	130	120	120	150	76.1
300	340	340	280	230	250	150	140	150	190	64.1
400	400	390	320	260	280	160	160	160	230	56.4
500	440	430	360	290	310	170	170	180	260	51.1
600	480	470	390	310	330	180	180	190	280	47.0
700	520	500	420	330	350	190	190	200	310	43.8
800	560	530	440	340	370	200	200	210	330	41.1
900	590	560	460	360	390	210	210	220	350	38.9
1 000	620	590	480	370	400	220	220	230	370	37.0
1 100	640	610	500	390	420	220	230	240	390	35.3
1 200	670	630	520	400	430	230	230	250	410	33.9
1 300	700	660	540	410	440	240	240	250	420	32.6
1 400	720	680	560	420	460	240	250	260	440	31.4
1 500	740	700	570	430	470	250	260	270	460	30.4
1 600	760	720	590	440	480	250	260	270	470	29.4
1 700	790	730	610	450	490	260	270	280	490	28.6
1 800	810	750	620	460	500	260	270	280	500	27.8
1 900	830	770	630	470	510	270	280	290	510	27.0
2 000	840	780	650	480	520	270	280	290	530	26.3
2 100	860	800	660	490	530	270	290	300	540	25.7
2 200	880	810	670	490	540	280	300	300	550	25.1
2 300	900	830	690	500	540	280	300	310	560	24.5
2 400	910	840	700	510	550	290	310	310	580	24.0
2 500	930	860	710	520	560	290	310	320	590	23.5
3 000	1 000	920	760	550	600	300	330	340	640	21.4
3 500	1 050	970	810	580	630	320	350	350	690	19.8
4 000	1 150	1 000	860	610	650	330	370	370	740	18.4
4 500	1 200	1 050	900	630	680	340	390	380	780	17.3
5 000	1 250	1 100	940	650	700	350	410	400	820	16.4
6 000	1 350	1 200	1 000	690	750	370	440	420	890	14.8
8 000	1 500	1 300	1 150	760	810	400	490	460	1 000	12.7
10 000	1 650	1 400	1 250	810	870	430	530	490	1 100	11.2
20 000	2 150	1 750	1 600	990	1 050	510	700	590	1 500	7.5
30 000	2 450	2 000	1 850	1 100	1 200	560	830	660	1 750	5.9
40 000	2 700	2 150	2 050	1 200	1 250	600	930	710	2 000	5.0
50 000	2 950	2 250	2 200	1 300	1 350	630	1 000	750	2 150	4.3
100 000	3 650	2 700	2 800	1 500	1 550	730	1 350	880	2 800	2.8
200 000	4 500	3 150	3 500	1 800	1 800	840	1 850	1 050	3 550	1.8
300 000	5 100	3 400	3 950	1 950	1 900	910		1 100	4 000	1.3
400 000	5 500	3 550	4 350	2 050	2 000	950			4 400	1.1
500 000	5 800	3 700	4 650	2 150	2 100	990			4 700	0.9
1 000 000	6 900	4 100	5 700	2 450	2 300				5 700	0.6
2 000 000	8 000	4 450	6 900						6 800	0.3

STANDARD ERRORS AND RELATIVE STANDARD ERRORS FOR ESTIMATES OF CHILDREN AGED 0 TO 6 YEARS, SINGLE YEAR AGE GROUP, AUSTRALIA, APRIL 1995

Size of estimate	*0 – 11 months*	*1 year*	*2 years*	*3 years*	*4 years*	*5 years*	*6 years*	*Total children 0 to 6 years* SE	RSE %
100		100			100	90			
200	160	160	160	160	150	140	160	160	80.0
400	240	240	240	240	230	220	250	240	60.0
500	280	280	270	280	270	250	280	270	54.0
600	300	310	290	310	290	280	320	300	50.0
700	330	330	320	340	320	300	350	320	45.7
800	350	360	340	360	350	320	370	350	43.8
900	370	380	360	390	370	340	400	370	41.1
1 000	390	410	380	410	390	370	420	390	39.0
1 100	400	430	400	430	410	380	440	410	37.3
1 200	420	450	420	450	430	400	460	430	35.8
1 300	430	460	440	470	450	420	480	440	33.8
1 400	450	480	450	490	470	440	500	460	32.9
1 500	460	500	470	510	480	450	520	480	32.0
1 600	470	510	480	530	500	470	540	490	30.6
1 700	490	530	500	540	510	480	560	510	30.0
1 800	500	540	510	560	530	500	570	520	28.9
1 900	510	560	520	580	540	510	590	530	27.9
2 000	520	570	540	590	560	530	600	550	27.5
2 100	530	590	550	610	570	540	620	560	26.7
2 200	540	600	560	620	580	550	630	570	25.9
2 300	550	610	570	640	600	570	650	580	25.2
2 400	560	620	580	650	610	580	660	590	24.6
2 500	560	630	590	660	620	590	670	610	24.4
3 000	600	690	640	730	680	650	740	660	22.0
3 500	640	730	690	780	730	700	790	710	20.3
4 000	660	780	730	830	780	740	850	750	18.8
4 500	690	810	760	880	820	790	890	790	17.6
5 000	710	850	800	930	860	830	940	820	16.4
6 000	750	910	850	1 010	930	900	1 020	890	14.8
8 000	810	1 010	950	1 150	1 060	1 030	1 150	1 000	12.5
10 000	860	1 090	1 030	1 270	1 160	1 140	1 270	1 090	10.9
20 000	980	1 360	1 300	1 700	1 530	1 540	1 680	1 400	7.0
30 000	1 040	1 510	1 460	1 990	1 770	1 820	1 950	1 600	5.3
40 000	1 080	1 620	1 580	2 220	1 950	2 040	2 160	1 750	4.4
50 000	1 100	1 700	1 670	2 400	2 100	2 220	2 330	1 870	3.7
100 000	1 130	1 920	1 950	3 050	2 600	2 870	2 900	2 260	2.3
200 000	1 110	2 090	2 200	3 770	3 140	3 630	3 520	2 650	1.3
300 000	1 070	2 160	2 330	4 230	3 460	4 120	3 890	2 870	1.0
400 000	1 040	2 190	2 410	4 570	3 690	4 490	4 160	3 030	0.8

IMMUNISATION

10 Immunisation status is defined as the degree to which the recommended course of vaccinations for a particular disease has been received (as appropriate to the age of the child). The NH & MRC Standard Childhood Vaccination Schedules were used to derive immunisation status of children covered in this and previous surveys. The following table is the current recommended childhood vaccination schedule for children aged 6 years and less, as introduced by the NH & MRC in August 1994.

Age	*Disease*	*Vaccine*
2 months	Diphtheria, Tetanus, Pertussis	DTP — Triple Antigen
	Poliomyelitis	OPV — Sabin vaccine
	Haemophilus influenzae type b (Hib) (Schedule 1 or 2) **	Hib vaccine (a or b or c)*
4 months	Diphtheria, Tetanus, Pertussis	DTP — Triple Antigen
	Poliomyelitis	OPV — Sabin vaccine
	Hib (Schedule 1 or 2) **	Hib vaccine (a or b or c)*
6 months	Diphtheria, Tetanus, Pertussis	DTP — Triple Antigen
	Poliomyelitis	OPV — Sabin vaccine
	Hib (Schedule 1 only) **	Hib vaccine (a or b)*
12 months	Measles, Mumps and Rubella	MMR
	Hib (Schedule 2 only)**	Hib vaccine (c)*
18 months	Diphtheria, Tetanus, Pertussis	DTP — Triple Antigen
	Hib (Schedule 1 only) **	Hib vaccine (a or b)*
Prior to school entry	Diphtheria, Tetanus, Pertussis	DTP — Triple Antigen
(4 – 5 years)	Poliomyelitis	OPV — Sabin vaccine

* Abbreviations for Hib vaccines – (a) is Hboc ('HibTITER'); (b) is PP–T ('Act–HIB'); (c) is PRP–OMP ('PedvaxHIB').
** Schedule 1 Hib vaccination refers to the use of HbOC and PRP–T.
Schedule 2 Hib vaccination refers to the use of PRP–OMP.
A fourth vaccine (PRP–D; 'ProHIBit') is approved for use as a single injection for children over the age of 18 months.

11 The following major changes have been made to the schedule since the ABS last collected information on immunisation status in the 1989-90 NHS (which used the 1986 version of the schedule):

- Introduction of a DTP vaccination to replace the CDT vaccination at 5 years or prior to school entry;
- Introduction of vaccination against Hib, not previously included in the schedule. This vaccine was recommended for inclusion in 1993. For the purpose of measuring uptake of the vaccine and its effect on the overall immunisation status of the child, the Hib vaccine was excluded in the derivation of overall status against the previous schedule; and
- Introduction of a combined Measles, Mumps and Rubella vaccination at one year of age.

UNPUBLISHED DATA

12 Statistics on children's immunisation contained in this publication represent a selection of those available from the survey. Standard sets of unpublished tablulations, for Australia and for each State, are available from any office of the ABS. In addition, special tabulations can be produced on request to meet individual user requirements. Such tables will be subject to confidentiality and sampling variability constraints. Inquiries about obtaining special tabulations from this survey should be made to Brian Richings on (06) 252 5786.

13 The following table shows the estimated population figures at April 1995, which have been used in the calculation of percentages contained in this publication.

CHILDREN AGED 0 TO 14 YEARS: AGE CATEGORIES BY STATES AND TERRITORIES, APRIL 1995

	NSW	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Australia*
Age category	'000s	'000s	'000s	'000s	'000s	'000s	'000s	'000s	'000s
Less than 3 months	21.6	15.7	11.6	4.8	6.2	1.7	*0.7	1.1	63.3
Under 6 months	42.9	31.3	23.0	9.5	12.2	3.4	1.4	2.1	125.9
6 months to less than 12 months	44.2	32.2	23.6	9.8	12.6	3.5	1.0	2.2	129.1
Total less than 1 year	*87.1*	63.5	46.6	*19.4*	*24.8*	6.9	2.4	4.3	255.0
1 year	87.0	63.6	46.9	19.4	24.8	6.8	2.7	4.5	255.5
2 years	87.5	63.7	47.2	19.7	24.7	6.7	2.6	4.5	256.5
3 years	87.3	63.6	47.6	19.8	24.9	6.8	2.6	4.5	257.1
Total 0 to 3 years	*348.8*	*254.3*	*188.4*	78.2	99.2	*27.2*	10.3	*17.8*	*1 024.2*
4 to 6 years	262.2	190.1	142.7	60.1	77.6	21.0	7.0	13.6	774.4
Total 0 to 6 years	611.0	444.4	331.1	138.3	176.8	48.3	17.3	31.4	1 798.6
3 months to 6 years	589.4	428.6	319.5	133.5	170.7	46.5	16.6	30.3	1 735.3
Total 0 to 14 years	1 294.8	940.5	716.7	300.8	385.6	106.4	35.7	66.4	3 846.9

RELATED PUBLICATIONS

14 Other ABS publications which may be of interest include:

Children's Health Screening (4337.0) (expected to be released early in 1996)

1989–90 National Health Survey, Children's Immunisation (4379.0)

1989–90 National Health Survey, Health Related Actions (4375.0)

15 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products, Australia* (1101.0).

ROUNDING

16 Estimates have been rounded and discrepancies may occur between sums of the component items and totals.

SYMBOLS AND OTHER USAGES

* relative standard error between 25% and 50%.
** subject to sampling variability too high for most practical uses (see paragraph 8).
n.a. not available
. . not applicable

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