

## 3.02 Immunisation (child and adult)

*Vaccination coverage rates among Indigenous Australian children and adults*

### Data sources

Data for this measure come from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and the Australian Childhood Immunisation Register (ACIR).

#### **National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)**

The 2004–05 NATSIHS collected information from 10,439 Indigenous Australians of all ages. This sample was considerably larger than the supplementary Indigenous samples in the 1995 and 2001 National Health Surveys. The survey was conducted in remote and non-remote areas of Australia and collected a range of information from Indigenous Australians about health-related issues including health-related actions, health risk factors, health status, socioeconomic circumstances and women's health. It is planned to repeat the NATSIHS at six-yearly intervals, with the next NATSIHS to be conducted in 2010–11. Selected non-Indigenous comparisons are available through the 2004–05 National Health Survey (NHS).

#### **The Australian Childhood Immunisation Register (ACIR)**

The Australian Childhood Immunisation Register (ACIR), managed by Medicare Australia, holds information on childhood immunisation coverage. All children under 7 years of age, enrolled in Medicare, are automatically included on the ACIR. Children who are not eligible to enrol in Medicare can be added to the ACIR when details of a vaccination are received from a doctor or immunisation provider.

Only data from New South Wales, Victoria, Western Australia, South Australia and the Northern Territory are used to calculate vaccination coverage rates of Indigenous children and have been presented in this measure. Data from the Australian Capital Territory, Queensland and Tasmania have not been included in this measure because Indigenous status data from these jurisdictions are not routinely reported or transferred to the ACIR.

It should be noted that coverage estimates for Aboriginal and Torres Strait Islander children include only those who identify as such and are registered on the ACIR. Children identified as Indigenous on the ACIR may not be representative of all Aboriginal and Torres Strait Islander children, and thus coverage estimates should be interpreted with caution.

Children for whom Indigenous status was 'not stated' are included with the 'non-Indigenous' under the 'other' category.

Vaccination coverage is a measure of the proportion of people in a target population who have received the recommended course of vaccinations at a particular age.

# Analyses

## Self-reported data

### Childhood immunisation

The 2004–05 National Aboriginal and Torres Strait Islander Health Survey provides information on the immunisation status of Indigenous children aged 0–6 years in non-remote areas of Australia. Data from this survey and the 2001 National Health Survey which collected information on the immunisation status of Indigenous and non-Indigenous children are presented below.

- Of Indigenous children aged 0–6 years in non-remote areas who had immunisation records available, approximately 94% were fully immunised in 2001 and 93% were fully immunised in 2004–05. Around 4% of Indigenous children aged 0–6 years were partially immunised in 2001 and 7% were partially immunised in 2004–05 (Table 3.02.1).
- In 2004–05, 78% of Indigenous children aged 0–6 years in non-remote areas were fully immunised against diphtheria/tetanus, 74% against whooping cough, 82% against hepatitis B, 78% against polio, 72% against HIB and 84% against measles, mumps and rubella.
- The proportion of Indigenous children fully immunised in 2001 was similar to 2004–05 for all diseases with the exception of polio, for which coverage was higher in 2001 (88%), and HIB, for which coverage was lower in 2001 (67%).
- In 2001 in non-remote areas, the proportion of Indigenous and non-Indigenous children who were fully immunised was similar, however Indigenous children were around twice as likely to be partially immunised.
- The most common factors influencing the decision to immunise children aged 0–6 years for Indigenous people in non-remote areas in 2004–05 were for the child’s health (88%), it was believed to be the right thing to do (51%) and the child must be immunised to go to child care/school (29%) (Table 3.02.2). Similar proportions of Indigenous and non-Indigenous people in non-remote areas reported these factors as influencing their decision to immunise children in 2001.

**Table 3.02.1: Immunisation status of children aged 0–6 years, by Indigenous status, non-remote areas, 2001 and 2004–05**

Immunisation status	2001			2004–05
	Indigenous	Non-Indigenous	Ratio <sup>(a)</sup>	Indigenous
	%	%		%
<b>Self-reported status</b>				
<b>Immunisation records not available</b>				
Fully immunised	88	92	1.0	89
Partially immunised	6 <sup>(b)</sup>	3	2.1	7 <sup>(b)</sup>
Not immunised	3 <sup>(c)</sup>	5 <sup>(b)</sup>	0.7	2 <sup>(c)</sup>
Not known if immunised	2 <sup>(c)</sup>	1 <sup>(b)</sup>	2.7	2 <sup>(b)</sup>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Immunisation records available</b>				
Fully immunised	94	97	1.0	93
Partially immunised	4 <sup>(b)</sup>	2	1.9	7 <sup>(d)</sup>
Not immunised	n.p.	1 <sup>(b)</sup>	—	—
Not known if immunised	n.p.	— <sup>(b)</sup>	—	—
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Status for selected vaccinations<sup>(f)(g)</sup></b>				
<b>Diphtheria, tetanus</b>				
Fully immunised	79	85	0.9	78
Partially immunised	19	14	1.4	16
Not immunised	1 <sup>(c)</sup>	1 <sup>(b)</sup>	1.4	— <sup>(c)</sup>
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Whooping cough</b>				
Fully immunised	74	79	0.9	74
Partially immunised	24	19	1.3	23
Not immunised	1 <sup>(c)</sup>	1	1.3	1 <sup>(b)</sup>
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Hepatitis B<sup>(d)</sup></b>				
Fully immunised	78	78	1.0	82
Partially immunised	18 <sup>(b)</sup>	16	1.1	12
Not immunised	n.p.	3 <sup>(b)</sup>	n.p.	1 <sup>(c)</sup>
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Polio</b>				
Fully immunised	88	90	1.0	78
Partially immunised	9 <sup>(b)</sup>	8	1.2	18
Not immunised	2 <sup>(c)</sup>	1	1.3	2 <sup>(b)</sup>
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>

(continued)

**Table 3.02.1 (continued): Immunisation status of children aged 0–6 years, by Indigenous status, non-remote areas, 2001 and 2004–05**

Immunisation status	2001			2004–05
	Indigenous	Non-Indigenous	Ratio <sup>(a)</sup>	Indigenous
	%	%		%
<b>HIB</b>				
Fully immunised	67	82	0.8	72
Partially immunised	16	9	1.8	15
Not immunised	13 <sup>(b)</sup>	5	2.7	8
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
<b>Measles, mumps, rubella</b>				
Fully immunised	88	90	1.0	84
Partially immunised	5 <sup>(b)</sup>	7	0.7	10 <sup>(b)</sup>
Not immunised	6 <sup>(b)</sup>	2	2.4	4 <sup>(b)</sup>
<b>Total<sup>(e)</sup></b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>

(a) Ratio—immunisation rate for Indigenous children divided by immunisation rate for non-Indigenous children.

(b) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(c) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(d) Introduced in the recommended immunisation schedule from 1 May 2000 and therefore only applies to children born from that date.

(e) Includes immunisation status not known.

(f) Children who had immunisation records available.

(g) Status derived based on schedule started.

Source: ABS 2006 (2001 National Health Survey and 2004–05 NATSIHS).

**Table 3.02.2: Factors influencing decision to immunise children aged 0–6 years, by Indigenous status, 2001 and 2004–05**

Factors influencing decision to immunise	2001		Rate ratio <sup>(a)</sup>	2004–05	
	Indigenous (non-remote)	Non-Indigenous		Indigenous (non-remote)	
	%	%		%	
For child's health	88	91	1.0	88	
The right thing to do	45	49	0.9	51	
Child must be immunised to go to child care/school	23	25	0.9	29	
More awareness of immunisation schedule	6 <sup>(b)</sup>	8	0.7	11	
Reminder notification	5 <sup>(b)</sup>	3	2.0	8	
Local access to clinic or doctor	4 <sup>(b)</sup>	3	1.2	6 <sup>(b)</sup>	
Promotion through TV/radio/other media/clinic	3 <sup>(b)</sup>	4	0.9	5 <sup>(b)</sup>	
Payment	0 <sup>(c)</sup>	1	0.3	3 <sup>(b)</sup>	
Other	3 <sup>(b)</sup>	3	0.9	3 <sup>(b)</sup>	
<b>Total</b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>	
Total number	46,344	1,402,291	..	48,903	

(a) Ratio Indigenous:non-Indigenous.

(b) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(c) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

Note: The sum of components will add to more than 100% as more than one factor can be reported.

Source: ABS and AIHW analysis of 2001 National Health Survey (Indigenous supplement) and 2004–05 NATSIHS.

## Adult immunisation

Data on immunisation of Indigenous persons aged 50 years and over come from the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and are presented below.

### Immunisation status by sex and Indigenous status

- In 2004–05, approximately 60% of Indigenous persons aged 50 years and over had been vaccinated against influenza in the last 12 months and 15% had been vaccinated against influenza but not in the last 12 months. These proportions were higher than those reported in 2001 (51% and 10% respectively) (Table 3.02.3).
- A slightly higher proportion of Indigenous females aged 50 years and over had been vaccinated against influenza in the last 12 months (61%) than Indigenous males (58%).
- A significantly higher proportion of Indigenous persons aged 50 years and over in remote areas had been vaccinated against influenza in the last 12 months (80%) than in non-remote areas (52%).
- In 2004–05, approximately 34% of Indigenous persons aged 50 years and over had been vaccinated against pneumonia in the last 5 years, which was significantly higher than the proportion recorded in 2001 (25%).
- A higher proportion of Indigenous females aged 50 years and over had been vaccinated against pneumonia in the last 5 years (37%) than Indigenous males (31%).

- Indigenous persons aged 50 years and over in remote areas were more than twice as likely to have been vaccinated against pneumonia in the last 5 years as Indigenous persons in non-remote areas (56% compared to 26%).
- In 2004–05, a higher proportion of Indigenous persons aged 65 years and over had been vaccinated against influenza and pneumonia (84% and 48% respectively) than non-Indigenous persons of the same age (73% and 43% respectively) (Table 3.02.4).
- However, comparisons of vaccination coverage among Indigenous and non-Indigenous Australians for pneumococcal and influenza need to take into account differences in the age at which vaccinations are funded and provided free to charge for the different population groups. The National Indigenous Pneumococcal and Influenza Immunisation Program provides free pneumococcal and influenza vaccines for all Indigenous people aged 50 years and over and those in the 15–49 years age group who are deemed at ‘high risk’ (for example, those with debilitating diseases or illnesses). For all other Australians, vaccinations are recommended and provided free of charge from the age of 65 years. In 2004–05, a lower proportion of Indigenous persons aged 50 years and over had been vaccinated against influenza and pneumonia in the last 12 months (60% and 34% respectively) than non-Indigenous persons aged 65 years and over (73% and 43% respectively) (Figure 3.02.1).

**Table 3.02.3: Immunisation status, by sex and remoteness, Indigenous persons aged 50 years and over, 2001 and 2004–05**

Immunisation status	2001			2004–05		
	Remote	Non-remote	Total	Remote	Non-remote	Total
<b>Per cent</b>						
<b>Males</b>						
Had vaccination for influenza in last 12 months	75	39	46	81	49	58
Had vaccination for influenza but not in last 12 months	5 <sup>(a)</sup>	14 <sup>(b)</sup>	12 <sup>(b)</sup>	8 <sup>(b)</sup>	18	15
Never had vaccination for influenza	19 <sup>(b)</sup>	46	40	10	32	26
<b>Total<sup>(c)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Had vaccination for pneumonia in last 5 years	58	16 <sup>(b)</sup>	24	53	23	31
Had vaccination for pneumonia but not in last 5 years	n.p.	8 <sup>(a)</sup>	6 <sup>(a)</sup>	—	n.p.	n.p.
Never had vaccination for pneumonia	34 <sup>(b)</sup>	74	66	38	70	61
<b>Total<sup>(c)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Females</b>						
Had vaccination for influenza in last 12 months	74	51	56	80	54	61
Had vaccination for influenza but not in last 12 months	6 <sup>(b)</sup>	9 <sup>(b)</sup>	8 <sup>(b)</sup>	8 <sup>(b)</sup>	17	15
Never had vaccination for influenza	13 <sup>(b)</sup>	40	34	12	28	24
<b>Total<sup>(d)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Had vaccination for pneumonia in last 5 years	39	22	26	59	28	37
Had vaccination for pneumonia but not in last 5 years	—	n.p.	n.p.	—	1 <sup>(a)</sup>	1 <sup>(a)</sup>
Never had vaccination for pneumonia	41	76	68	36	65	56
<b>Total<sup>(c)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Persons</b>						
Had vaccination for influenza in last 12 months	75	45	51	80	52	60
Had vaccination for influenza but not in last 12 months	6 <sup>(a)</sup>	11	10	8	18	15
Never had vaccination for influenza	16 <sup>(b)</sup>	43	37	11	30	25
<b>Total<sup>(d)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Had vaccination for pneumonia in last 5 years	48	19	25	56	26	34
Had vaccination for pneumonia but not in last 5 years	n.p.	4 <sup>(a)</sup>	3 <sup>(a)</sup>	—	1 <sup>(b)</sup>	1 <sup>(b)</sup>
Never had vaccination for pneumonia	38	75	67	37	67	58
<b>Total<sup>(c)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

(continued)

**Table 3.02.3 (continued): Immunisation status, by sex and remoteness, Indigenous persons aged 50 years and over, 2001 and 2004–05**

- (a) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.  
 (b) Estimate has a relative standard error of 25% to 50% and should be used with caution.  
 (c) Includes 'pneumonia vaccination status' not known and not applicable.  
 (d) Includes 'influenza vaccination status' not known and not applicable.

Source: 2004–05 NATSIHS.

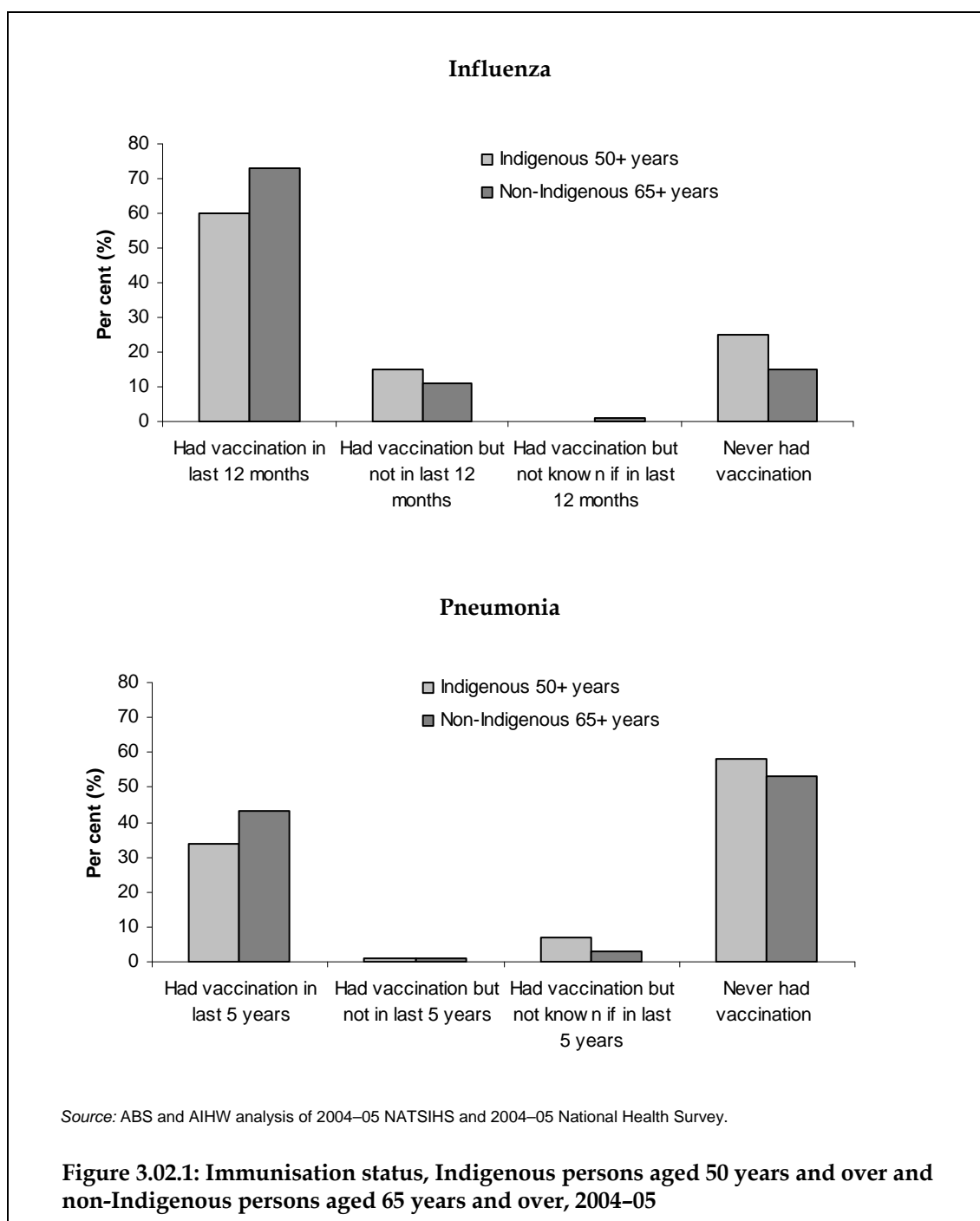
**Table 3.02.4: Immunisation status, Indigenous persons aged 50 years and over and non-Indigenous persons aged 65 years and over, 2004–05**

Immunisation status	Indigenous		Non-Indigenous
	50–64 years	65+ years	65+ years
	(per cent)		
Had vaccination for influenza in last 12 months	52	84	73
Had vaccination for influenza but not in last 12 months	18	7 <sup>(a)</sup>	11
Had influenza vaccination but not known if in last 12 months <sup>(b)</sup>	0 <sup>(a)</sup>	1 <sup>(c)</sup>	1 <sup>(a)</sup>
Never had vaccination for influenza	30	9 <sup>(a)</sup>	15
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>
Had vaccination for pneumonia in last 5 years	30	48	43
Had vaccination for pneumonia but not in last 5 years	1 <sup>(a)</sup>	n.p.	1
Had vaccination for pneumonia but not known if in last 5 years <sup>(d)</sup>	7	n.p.	3
Never had vaccination for pneumonia	63	45	53
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Total number</b>	36,917	12,237	2,430,253

n.p. Not for publication.

- (a) Estimate has a relative standard error of 25% to 50% and should be used with caution.  
 (b) Includes not known if ever had influenza vaccination.  
 (c) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.  
 (d) Includes not known if ever had pneumonia vaccination.

Source: ABS and AIHW analysis of 2004–05 NATSIHS and 2004–05 National Health Survey.



### Immunisation status by access to health care and selected population characteristics

- In 2004–05, over half of all Indigenous Australians who had never been vaccinated against influenza or pneumonia had accessed health care in the last 2 weeks (53% and 58% respectively). Approximately 25% of Indigenous Australians who had never been vaccinated against influenza had been admitted to hospital in the last 12 months and 26% had consulted with other health professionals in the last 2 weeks. Approximately 26% of Indigenous people aged 50 years and over who had never been vaccinated against pneumonia had been admitted to hospital in the last 12 months, 34% had

consulted with a doctor in the last 2 weeks and 22% had consulted with other health professionals (Table 3.02.5).

- A higher proportion of Indigenous Australians who spoke a language other than English at home had had an influenza vaccination in the last 12 months and a pneumonia vaccination in the last 5 years than Indigenous Australians who spoke English as their main language at home (Table 3.02.6). Indigenous Australians who were in the lowest quintile of household income and index of disparity and were renters were more likely to have had influenza and pneumonia vaccinations than those in the highest quintiles of income and disparity and who were home owners.

**Table 3.02.5: Immunisation status, by access to health care, Indigenous persons aged 50 years and over, non-remote areas 2004–05<sup>(a)</sup>**

Accessing health care <sup>(b)</sup>	Influenza				Pneumonia			
	Had vaccination in last 12 months	Had vaccination but not in last 12 months	Never had vaccination	Total	Had vaccination in last 5 years	Had vaccination but not in last 5 years	Never had vaccination	Total
	Per cent							
Admitted to hospital	30	28 <sup>(c)</sup>	25 <sup>(c)</sup>	28	33	56 <sup>(d)</sup>	26	28
Visited casualty	3 <sup>(c)</sup>	1 <sup>(d)</sup>	0 <sup>(d)</sup>	2 <sup>(c)</sup>	2 <sup>(c)</sup>	0	2 <sup>(c)</sup>	2 <sup>(c)</sup>
Visited outpatients	8	8 <sup>(d)</sup>	3 <sup>(c)</sup>	7	9 <sup>(c)</sup>	0	5 <sup>(c)</sup>	7
Visited day clinic	6 <sup>(c)</sup>	3 <sup>(d)</sup>	3 <sup>(d)</sup>	4	8 <sup>(c)</sup>	7 <sup>(d)</sup>	3 <sup>(c)</sup>	4
Doctor consultation (GP)	45	30	29	37	43	61 <sup>(d)</sup>	34	37
Specialist consultation	12 <sup>(c)</sup>	14 <sup>(c)</sup>	4 <sup>(c)</sup>	10	12 <sup>(c)</sup>	8 <sup>(d)</sup>	9 <sup>(c)</sup>	10
Dental consultation	6 <sup>(c)</sup>	1 <sup>(d)</sup>	5 <sup>(d)</sup>	5 <sup>(c)</sup>	4 <sup>(c)</sup>	0	6 <sup>(c)</sup>	5 <sup>(c)</sup>
Consultation with other health professional	20	17 <sup>(c)</sup>	26 <sup>(c)</sup>	21	20	13 <sup>(d)</sup>	22	21
<b>Total accessing health care<sup>(e)</sup></b>	<b>67</b>	<b>55</b>	<b>53</b>	<b>61</b>	<b>67</b>	<b>71<sup>(d)</sup></b>	<b>58</b>	<b>61</b>
Not accessing /not stated	33	45	47	39	33	29 <sup>(d)</sup>	42	39
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number	18,119	6,224	10,599	35,128	8,963	304	23,498	35,128

(a) Self-reported data from the 2004–05 NATSIHS.

(b) Health-related actions in last 2 weeks except hospital admissions (in last 12 months).

(c) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(d) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(e) Components may not add to total as persons may have reported more than one type of action.

Source: ABS and AIHW analysis of 2004–05 NATSIHS

**Table 3.02.6: Immunisation status, by selected population characteristics, Indigenous persons aged 50 years and over, 2004–05**

Accessing health care <sup>(a)</sup>	Influenza				Pneumonia			
	Had vaccination in last 12 months	Had vaccination but not in last 12 months <sup>(b)</sup>	Never had vaccination	Total <sup>(c)</sup>	Had vaccination in last 5 years	Had vaccination but not in last 5 years <sup>(d)</sup>	Never had vaccination	Total <sup>(e)</sup>
per cent								
<b>Main language spoken at home</b>								
English	55	17	28	100	29	1 <sup>(f)</sup>	63	100
Language other than English	84	5 <sup>(f)</sup>	11 <sup>(f)</sup>	100	60	—	33	100
<b>Household income</b>								
1st quintile	66	13	20	100	39	n.p.	54	100
4th and 5th quintile	41	23 <sup>(f)</sup>	36	100	19 <sup>(f)</sup>	n.p.	76	100
<b>Index of disparity</b>								
1st quintile	63	16	20	100	38	n.p.	54	100
5th quintile	46 <sup>(g)</sup>	3 <sup>(g)</sup>	51 <sup>(g)</sup>	100	10 <sup>(g)</sup>	n.p.	90 <sup>(f)</sup>	100
<b>Location</b>								
Remote	80	8	11	100	56	— <sup>(f)</sup>	37	100
Non-remote	52	18	30	100	26	1 <sup>(f)</sup>	67	100
<b>Private health insurance</b>								
With private cover	38 <sup>(f)</sup>	19 <sup>(f)</sup>	43 <sup>(f)</sup>	100	16 <sup>(f)</sup>	n.p.	80	100
Without private cover	54	18	28	100	27	1 <sup>(f)</sup>	65	100
<b>Employment</b>								
Employed CDEP	71	14 <sup>(g)</sup>	14 <sup>(f)</sup>	100	52	—	41	100
Employed non-CDEP	41	21	38	100	18	1 <sup>(g)</sup>	75	100
<i>Subtotal employed</i>	47	19	33	100	25	1 <sup>(g)</sup>	68	100
Unemployed	75 <sup>(g)</sup>	8 <sup>(g)</sup>	17 <sup>(g)</sup>	100	25 <sup>(g)</sup>	—	75 <sup>(f)</sup>	100
Not in the labour force	65	13	21	100	39	—	53	100
<b>Housing tenure type</b>								
Owner	42	14	43	100	18	n.p.	77	100
Renter	67	15	17	100	42	1 <sup>(f)</sup>	50	100
Other <sup>(h)</sup>	68 <sup>(f)</sup>	16 <sup>(g)</sup>	15 <sup>(g)</sup>	100	40 <sup>(f)</sup>	n.p.	56 <sup>(f)</sup>	100

(continued)

**Table 3.02.6 (continued): Immunisation status, by selected population characteristics, Indigenous persons aged 50 years and over, 2004–05**

Accessing health care <sup>(a)</sup>	Influenza				Pneumonia			
	per cent							
	Had vaccination in last 12 months	Had vaccination but not in last 12 months <sup>(b)</sup>	Never had vaccination	Total <sup>(c)</sup>	Had vaccination in last 5 years	Had vaccination but not in last 5 years <sup>(d)</sup>	Never had vaccination	Total <sup>(e)</sup>
per cent								
<b>Treatment when seeking health care in last 12 months compared to non-Indigenous people</b>								
Worse	55 <sup>(f)</sup>	26 <sup>(f)</sup>	19 <sup>(f)</sup>	100	46 <sup>(f)</sup>	n.p.	46 <sup>(f)</sup>	100
The same or better	62	13	25	100	36	1 <sup>(g)</sup>	58	100
Other <sup>(a)</sup>	42	28 <sup>(f)</sup>	28 <sup>(f)</sup>	100	18	n.p.	68	100
<b>Total</b>	<b>60</b>	<b>15</b>	<b>25</b>	<b>100</b>	<b>34</b>	<b>1<sup>(f)</sup></b>	<b>58</b>	<b>100</b>
Total number	29,394	7,397	12,173	49,154	16,880	28,695	304	49,154

n.p. Not for publication.

(a) Includes 'don't know' responses.

(b) Includes 'Had influenza vaccination but not known if in the last twelve months'.

(c) Includes not known if ever had influenza vaccination and not applicable responses.

(d) Includes 'Had pneumonia vaccination but not known if in the last twelve months'.

(e) Includes not known if ever had pneumonia vaccination and not applicable responses.

(f) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(g) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(h) Includes life tenure scheme, participant or rent/buy scheme, boarder, rent free, other and not stated.

Source: ABS and AIHW analysis of 2004–05 NATSIHS.

### How influenza vaccination was obtained

- In 2004–05, for approximately 43% of Indigenous Australians aged 50 years and over in non-remote areas, influenza vaccination was provided free of charge (Table 3.02.7). In 2001, approximately 30% of Indigenous Australians aged 50 years and over in non-remote areas received influenza vaccinations free of charge compared to 67% of non-Indigenous Australians.



- In South Australia and Western Australia, Indigenous children aged 1 year had lower coverage for all vaccines than non-Indigenous children (Table 3.02.9). In New South Wales, Victoria and the Northern Territory, coverage rates were similar.
- Vaccination coverage for all vaccines for Indigenous children aged 2 years ranged from 88% in Western Australia to 93% in Victoria (Table 3.02.10).
- Vaccination coverage rates were similar for Indigenous and non-Indigenous children aged 2 years in each state and territory.
- Vaccination coverage rates for all vaccines for Indigenous children aged 6 years ranged from 79% in Western Australia to 89% in the Northern Territory (Table 3.02.11).
- Vaccination coverage rates were similar for Indigenous and non-Indigenous children aged 6 years in each state and territory.

**Table 3.02.8: Vaccination coverage estimates for children at age 1, 2 and 6 years, by Indigenous status, NSW, Vic, WA, SA and NT, as at 31 December 2005<sup>(a)(b)</sup>**

Vaccine	1 year			2 years			6 years		
	Indigenous	Non-Indigenous	Ratio <sup>(c)</sup>	Indigenous	Non-Indigenous	Ratio <sup>(c)</sup>	Indigenous	Non-Indigenous	Ratio <sup>(c)</sup>
	%	%		%	%		%	%	
Hepatitis B	93.9	94.8	1.0	97.9	95.9	1.0	—	—	—
DTP (diphtheria, tetanus and pertussis)	86.0	92.6	0.9*	94.9	95.2	1.0	85.3	85.5	1.0
OPV (oral polio vaccine)	85.6	92.5	0.9*	94.7	95.2	1.0	85.6	85.7	1.0
HIB (Haemophilus influenza type B)	93.1	94.5	1.0	91.6	93.6	1.0	—	—	—
MMR (measles, mumps, rubella)	0.0	0.0	—	93.1	93.8	1.0	85.4	85.7	1.0
<b>All vaccines</b>	<b>84.6</b>	<b>91.1</b>	<b>0.9*</b>	<b>89.9</b>	<b>92.1</b>	<b>1.0</b>	<b>84.3</b>	<b>84.6</b>	<b>1.0</b>

\* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons.

(a) Three-month cohorts, for cohorts born between 1 July and 30 September 2004, 1 July and 30 September 2003, and 1 July and 30 September 1999 respectively.

(b) Includes data from NSW, Vic, WA, SA and NT only.

(c) Ratio—coverage estimate for Indigenous children divided by coverage estimate for non-Indigenous children.

Note: Data for Victoria contain an error in the number of Aboriginal children aged 72–75 months appearing on the register.

Source: AICR, Medicare Australia.

**Table 3.02.9: Vaccination coverage estimates for selected diseases for children 'fully vaccinated' at 1 year of age, by Indigenous status, NSW, Vic, WA, SA and NT, as at 31 December 2005<sup>(a)</sup>**

Vaccines	State/territory																	
	NSW			Vic			WA			SA			NT			NSW, Vic, WA, SA, NT <sup>(b)</sup>		
	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	96.0	95.2	1.0	94.2	94.9	1.0	90.8	93.2	1.0	90.1	95.0	0.9	93.4	95.9	1.0	93.9	94.8	1.0
DTP (diphtheria, tetanus and pertussis)	88.9	92.4	1.0	88.4	93.5	0.9	80.0	91.1	0.9*	76.0	92.4	0.8	87.6	93.5	0.9	86.0	92.6	0.9*
OPV (oral polio vaccine)	88.4	92.2	1.0	88.9	93.4	1.0	79.2	91.0	0.9*	76.0	92.4	0.8	87.3	93.3	0.9	85.6	92.5	0.9*
HIB (Haemophilus influenza type B)	95.0	94.2	1.0	93.7	95.1	1.0	90.5	93.4	1.0	88.4	94.7	0.9	92.8	95.5	1.0	93.1	94.5	1.0
MMR (measles, mumps, rubella)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>All vaccines</b>	<b>87.6</b>	<b>90.8</b>	<b>1.0</b>	<b>86.5</b>	<b>92.0</b>	<b>0.9</b>	<b>78.1</b>	<b>89.4</b>	<b>0.9*</b>	<b>74.4</b>	<b>91.7</b>	<b>0.8*</b>	<b>86.7</b>	<b>92.5</b>	<b>0.9</b>	<b>84.6</b>	<b>91.1</b>	<b>0.9*</b>

\* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons.

(a) Three-month cohort, for cohort born between 1 July and 30 September 2004.

(b) Data for these five jurisdictions should not be assumed to represent the immunisation experience in the other jurisdictions.

(c) Ratio—coverage estimate for Indigenous children divided by coverage estimate for non-Indigenous children.

Note: Includes data from NSW, Vic, WA, SA and NT only.

Source: ACIR, Medicare Australia.

**Table 3.02.10: Vaccination coverage estimates for selected diseases for children 'fully vaccinated' at 2 years of age, by Indigenous status, NSW, Vic, WA, SA and NT, as at 31 December 2005 <sup>(a)</sup>**

Vaccines	State/territory																	
	NSW			Vic			WA			SA			NT			NSW, Vic, WA, SA, NT <sup>(b)</sup>		
	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>	Indig.	Non-Indig.	Ratio <sup>(c)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	97.6	95.7	1.0	98.6	96.1	1.0	98.6	96.1	1.0	98.5	96	1.0	97.6	97.4	1.0	97.9	95.9	1.0
DTP (diphtheria, tetanus and pertussis)	94.3	95.1	1.0	95.7	95.4	1.0	95.2	95.2	1.0	94.7	95.5	1.0	96.1	96.6	1.0	94.9	95.2	1.0
OPV (oral polio vaccine)	94.3	94.9	1.0	95.7	95.4	1.0	94.9	95.2	1.0	93.9	95.4	1.0	95.5	96.4	1.0	94.7	95.2	1.0
HIB (Haemophilus influenza type B)	91.6	93.3	1.0	93.4	93.8	1.0	89.5	93.4	1.0	90.2	94.1	1.0	93.4	95.3	1.0	91.6	93.6	1.0
MMR (measles, mumps, rubella)	91.8	93.4	1.0	95.3	94.2	1.0	93.5	93.8	1.0	93.2	94.3	1.0	94.3	95.5	1.0	93.1	93.8	1.0
<b>All vaccines</b>	<b>89.1</b>	<b>91.8</b>	<b>1.0</b>	<b>92.9</b>	<b>92.5</b>	<b>1.0</b>	<b>88.4</b>	<b>91.6</b>	<b>1.0</b>	<b>90.2</b>	<b>92.7</b>	<b>1.0</b>	<b>91.6</b>	<b>94.1</b>	<b>1.0</b>	<b>89.9</b>	<b>92.1</b>	<b>1.0</b>

(a) Three-month cohort, for cohort born between 1 July and 30 September 2003.

(b) Data for these five jurisdictions should not be assumed to represent the immunisation experience in the other jurisdictions.

(c) Ratio—coverage estimate for Indigenous children divided by coverage estimate for non-Indigenous children.

Note: Includes data from NSW, Vic, WA, SA and NT only.

Source: ACIR, Medicare Australia.

**Table 3.02.11: Vaccination coverage estimates for selected diseases for children ‘fully vaccinated’ at 6 years of age, by Indigenous status, NSW, Vic, WA, SA and NT, as at 31 December 2005<sup>(a)</sup>**

Vaccines	State/territory																	
	NSW			Vic <sup>(b)</sup>			WA			SA			NT			NSW, Vic, WA, SA,NT <sup>(c)</sup>		
	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(d)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DTP (diphtheria, tetanus and pertussis)	84.9	85.7	1.0	88.6	88.0	1.0	80.5	80.9	1.0	86.4	82.7	1.0	90.7	81.1	1.1	85.3	85.5	1.0
OPV (oral polio vaccine)	85.4	85.8	1.0	88.3	88.2	1.0	80.5	81.3	1.0	86.4	82.7	1.0	91.8	82.8	1.1	85.6	85.7	1.0
HIB (Haemophilus influenza type B)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MMR (measles, mumps, rubella)	84.9	85.7	1.0	88.8	88.3	1.0	80.9	81.1	1.0	85.5	82.9	1.0	91.0	82.4	1.1	85.4	85.7	1.0
<b>All vaccines</b>	<b>84.0</b>	<b>84.7</b>	<b>1.0</b>	<b>88.1</b>	<b>87.3</b>	<b>1.0</b>	<b>79.2</b>	<b>79.6</b>	<b>1.0</b>	<b>85.0</b>	<b>81.7</b>	<b>1.0</b>	<b>89.2</b>	<b>80.0</b>	<b>1.1</b>	<b>84.3</b>	<b>84.6</b>	<b>1.0</b>

(a) Three-month cohort, for cohort born between 1 July and 30 September 2003.

(b) Data for Vic contain an error in the number of Aboriginal children aged 72–75 months appearing on the register. Vaccination coverage rates presented here should therefore be interpreted with caution. Vaccination coverage rates for all vaccines was reported as 87.3% for Aboriginal children and 86.1% for non-Aboriginal children in 2004–05 in the report, Victorian Government Department of Human Services 2006, *Aboriginal Services Plan key indicators 2004–05*.

(c) Data for these five jurisdictions should not be assumed to represent the immunisation experience in the other jurisdictions.

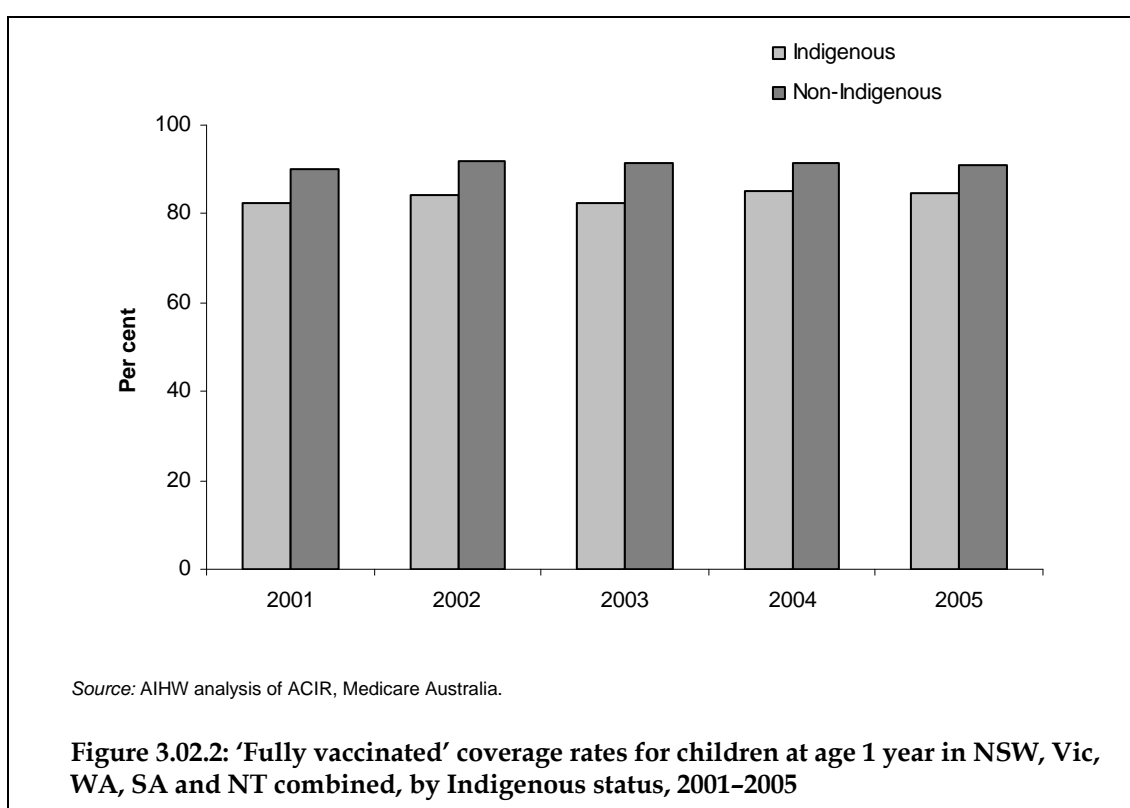
(d) Ratio—coverage estimate for Indigenous children divided by coverage estimate for non-Indigenous children.

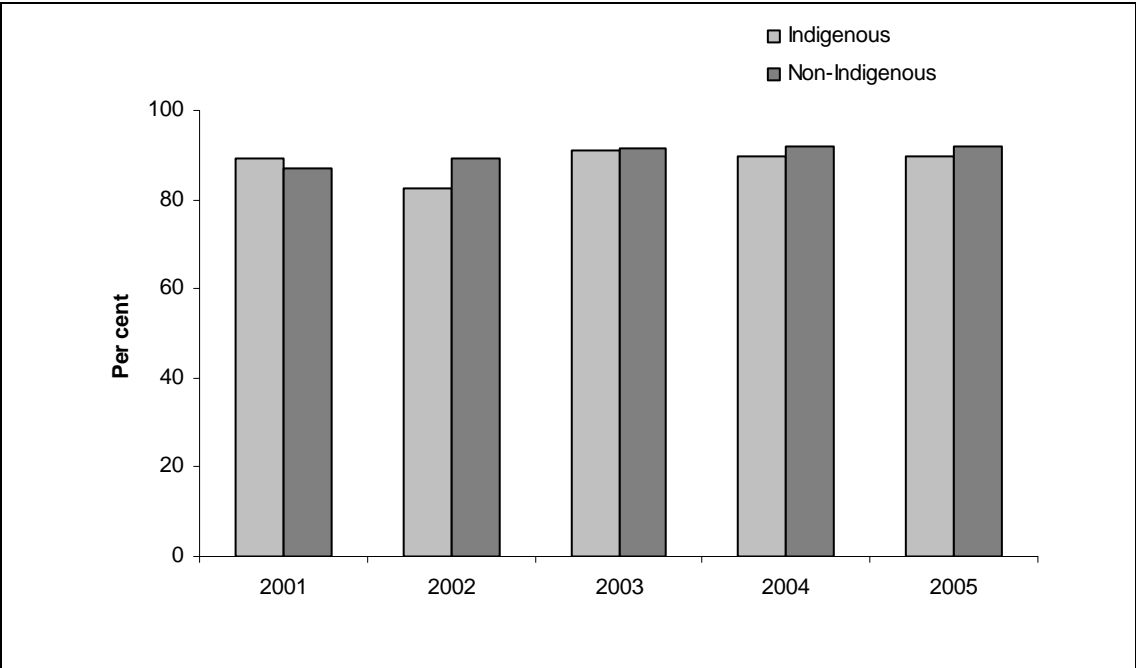
Note: Includes data from NSW, Vic, WA, SA and NT only.

Source: ACIR, Medicare Australia.

## Time series analyses

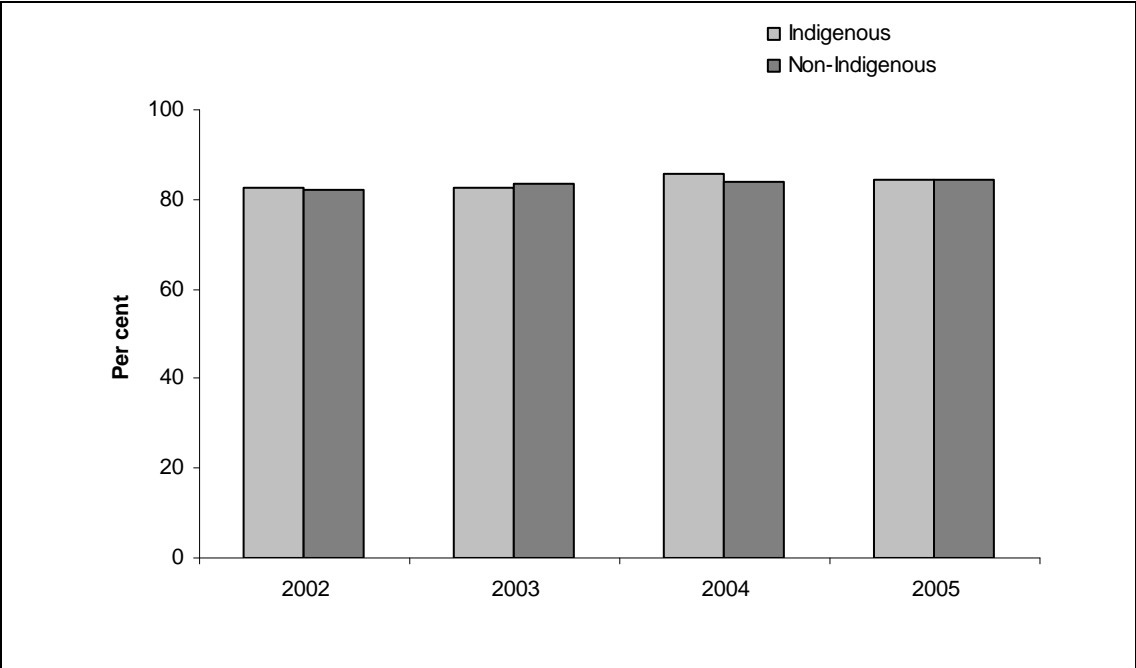
- Between 2001 and 2005 there were no significant changes in the proportion of Indigenous and non-Indigenous children who were fully vaccinated at 1 year of age (Figure 3.02.2).
- Between 2001 and 2005, there were non-significant increases in the proportion of Indigenous children who were fully immunised at 2 years of age and significant increases in the proportion of non-Indigenous children who were fully immunised at 2 years of age (Figure 3.02.3).
- Between 2002 and 2005, there were non-significant increases in the proportion of Indigenous children who were fully immunised at 6 years of age and significant increases in the proportion of non-Indigenous children who were fully immunised at 6 years of age (Figure 3.02.4).





Source: AIHW analysis of ACIR, Medicare Australia.

**Figure 3.02.3: 'Fully vaccinated' coverage rates for children at age 2 years in NSW, Vic, WA, SA and NT combined, by Indigenous status, 2001-2005**



Note: Data not available for children at age 6 years for 2001.

Source: AIHW analysis of ACIR, Medicare Australia.

**Figure 3.02.4: 'Fully vaccinated' coverage rates for children at age 6 years in NSW, Vic, WA, SA and NT combined, by Indigenous status, 2002-2005**

## **Data quality issues**

### **National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)**

*The NATSIHS uses the standard Indigenous status question. The NATSIHS sample was specifically designed to select a representative sample of Aboriginal and Torres Strait Islander Australians and thus overcomes the problem inherent in most national surveys with small and unrepresentative Indigenous samples. As with other surveys, the NATSIHS is subject to sampling and non-sampling errors. Calculations of standard errors and significance testing help to identify the accuracy of the estimates and differences.*

*Information recorded in this survey is essentially 'as reported' by respondents. The ABS makes every effort to collect accurate information from respondents, particularly through careful questionnaire design, pre-testing of questionnaires, use of trained interviewers and assistance from Indigenous facilitators. Nevertheless, some responses may be affected by imperfect recall or individual interpretation of survey questions.*

*Non-Indigenous comparisons are available through the National Health Survey (NHS). The NHS was conducted in major cities, regional and remote areas, but very remote areas were excluded from the sample. Time series comparisons are available through the 1995 and 2001 National Health Survey.*

*In remote communities there were some modifications to the NATSIHS content in order to address language and cultural appropriateness in traditional communities, as well as to assist respondents in understanding the concepts. Some questions were excluded and some reworded. Also, paper forms were used in communities in remote areas and computer-assisted interview (CAI) instruments were used in non-remote areas. The CAI process included built in edit checks and sequencing.*

### **Immunisation data**

*The 2004–05 NATSIHS collected immunisation status data for Indigenous Australian children in non-remote areas only. The 2004–05 National Health Survey did not collect child immunisation data, therefore no comparative data are available for non-Indigenous children. The 2004–05 National Health Survey collected influenza and pneumococcal vaccination status data for all adults aged 50 years or more. The 2004–05 NATSIHS collected influenza and pneumococcal vaccination data for persons aged 15 years and over.*

*Further information on NATSIHS data quality issues can be found in the national publication (ABS 2006).*

### **Australian Childhood Immunisation Register**

#### **Registrations**

*The ACIR was established in 1996. When a vaccination is given to a child, details of that vaccination are sent to the Register by the immunisation provider. These details can be sent via a number of means:*

- *Medicare Australia online claiming – a software application that allows the transmission of ACIR data via the immunisation provider's desktop software*
- *the internet – approved immunisation providers can record an immunisation encounter through the ACIR secure area within Medicare Australia's website*
- *electronically – by using electronic data interchange*
- *manually – by completing either an immunisation encounter form or an immunisation history form and sending it to Medicare Australia.*

*(continued)*

### **Data quality issues (continued)**

*Some immunisation providers send vaccination details to the ACIR via their state or territory health department. Immunisation providers are encouraged to send vaccination details to the Register on a weekly basis (Australian Government: Medicare Australia 2006).*

*The ACIR automatically includes all children aged under seven years who are enrolled in Medicare as its denominator to calculate vaccine coverage rate (ABS and AIHW 2006). It is estimated that approximately 99% of children are registered with Medicare by twelve months of age. However, it is not currently possible to accurately determine whether this is true of the Indigenous Australian child population, or whether Indigenous Australian children are less likely to be enrolled in Medicare. Children not registered with Medicare are added to the ACIR when details of an eligible immunisation are supplied by a recognised immunisation provider (DoHA 2006).*

#### **Indigenous status question**

*Indigenous identification is collected via a 'yes/no' flag on immunisation encounter forms, and through Medicare offices when any changes are made to personal details. Medicare uses the standard definition of Indigenous status, however, these details are converted to a 'yes' or 'no' when reports on vaccination coverage are produced from the ACIR. The immunisation encounter form method of Indigenous identification is voluntary and relies on the immunisation provider seeking the information. Improving Indigenous identification on the ACIR database is an issue currently being investigated by the Australian Government.*

#### **Under-identification**

*General limitations of data available from the ACIR must be considered when used to estimate vaccination coverage. A study conducted in 2001 found that the ACIR underestimated overall Australian immunisation coverage by 2.7% at 12 months of age and 5% at 24 months (Hull et al. 2004). However, for Indigenous Australian children these estimates may not be valid, as there is the issue of both under-reporting of vaccinations given to the ACIR and incomplete identification of Indigenous Australian children. This means that ACIR coverage estimates could overestimate or underestimate coverage, depending on whether those children not identified as Indigenous Australian have higher or lower than average vaccination coverage. The ACIR holds records only for children up to 7 years of age.*

*At the time of writing its report Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia 1999 to 2002 the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases stated that: 'Indigenous status is currently either not routinely reported or not transferred to the ACIR from the Australian Capital Territory, Queensland and Tasmania, so these jurisdictions were not included in this report' (Menzies et al. 2004).*

*Vaccination coverage data from the ACIR and the NATSIHS are not directly comparable due to the differences in the cohort used, population coverage, data collection method, method of calculating 'fully immunised' and vaccines included.*

## **References**

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