

## 3.02 Immunisation (child and adult)

### Vaccination coverage rates among Indigenous Australian children and adults

#### Data sources

Data for this measure come mainly 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 NATSIHS 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 6-yearly intervals, with the next survey 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), which is managed by Medicare Australia, holds information on childhood immunisation coverage. All children under 7 years of age, who are 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.

Note 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

#### Immunisation register data

The ACIR collects information on childhood immunisation coverage.

## Childhood immunisation

In May 2005, the National Immunisation Program (NIP) schedule replaced the Australian Vaccination Schedule, with all recommended vaccines to be funded. From November 2005, the NIP schedule for Aboriginal and Torres Strait Islander children included vaccines for hepatitis B, diphtheria-tetanus-pertussis (DTP), haemophilus influenza type B (Hib), measles, mumps, rubella (MMR) and polio (NCIRS 2008).

Vaccination coverage rates for children aged 1 year, 2 years and 6 years as at 31 December 2007 for New South Wales, Victoria, Western Australia, South Australia and the Northern Territory are presented below.

- As at 31 December 2007, Aboriginal and Torres Strait Islander children had lower coverage for all vaccines at 1 year of age (83% compared with 92%), although at 2 and 6 years of age they had similar vaccination coverage to non-Indigenous children (91% and 93% at 2 years of age and 85% and 89% at 6 years of age). This suggests that there is either a greater delay in the receipt of vaccines for Indigenous children or in the transfer of data to ACIR for Indigenous children.
- Vaccination coverage for Indigenous children aged 1 year was lower than for non-Indigenous children for DTP and polio and was similar for hepatitis B and HIB. At 2 and 6 years of age, the proportion of Indigenous and non-Indigenous children who were fully vaccinated against these diseases was similar (Table 3.02.1).
- Vaccination coverage for all vaccines for Indigenous children aged 1 year ranged from 78% in Western Australia to 87% in the Northern Territory (Table 3.02.2).
- In New South Wales and Western Australia, Indigenous children aged 1 year had significantly lower coverage for all vaccines than non-Indigenous children (Table 3.02.2). In Victoria, South Australia and the Northern Territory, Indigenous children aged 1 year had lower coverage for all vaccines than non-Indigenous children, but these differences were not statistically significant.
- Vaccination coverage for all vaccines for Indigenous children aged 2 years ranged from 87% in Western Australia and South Australia to 94% in the Northern Territory (Table 3.02.3).
- 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 69% in South Australia to 93% in the Northern Territory (Table 3.02.4).
- Vaccination coverage rates for DTP, polio and MMR were lower for Indigenous children aged 6 years than non-Indigenous children aged 6 years in South Australia. In New South Wales, Western Australia, Victoria and the Northern Territory, vaccination coverage rates for Indigenous and non-Indigenous children aged 6 years were similar.

**Table 3.02.1: Vaccination coverage estimates for children at age 1, 2 and 6 years, by Indigenous status, NSW, Vic, WA, SA and NT combined, as at 31 December 2007<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	91.8	94.6	1.0	96.7	96.1	1.0	..	..	..
DTP	83.5	92.3	0.9*	94.0	95.4	1.0	86.1	89.9	1.0
Polio vaccine	83.4	92.3	0.9*	93.9	95.4	1.0	86.1	90.0	1.0
HIB	91.2	94.6	1.0	92.2	95.2	1.0	..	..	..
MMR	..	..	..	93.3	94.4	1.0	86.6	89.9	1.0
<b>All vaccines</b>	82.7	91.8	0.9*	90.6	93.2	1.0	85.2	89.3	1.0

\* 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 2006, 1 July and 30 September 2005, and 1 July and 30 September 2001, respectively.

(b) 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.

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

Source: AIHW analysis of ACIR Medicare Australia data.

**Table 3.02.2: 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 2007<sup>(a)(b)</sup>**

Vaccines	State/territory																	
	NSW			Vic			WA			SA			NT			NSW, Vic, WA, SA, NT <sup>(c)</sup>		
	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	92.7	94.9	1.0	93.8	94.8	1.0	88.6	93.2	1.0	87.2	94.7	0.9	94.5	96.1	1.0	91.8	94.6	1.0
DTP	83.8	92.3	0.9*	87.0	93.2	0.9	79.6	90.1	0.9*	82.6	92.6	0.9	86.6	94.2	0.9	83.5	92.3	0.9*
Polio vaccine	83.5	92.3	0.9*	87.0	93.1	0.9	79.6	90.0	0.9*	82.6	92.6	0.9	86.6	94.2	0.9	83.4	92.3	0.9*
HIB	92.7	94.9	1.0	93.8	94.8	1.0	86.5	93.1	0.9	86.6	94.9	0.9	94.2	96.1	1.0	91.2	94.6	1.0
MMR	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<b>All vaccines</b>	<b>83.5</b>	<b>92.0</b>	<b>0.9*</b>	<b>86.4</b>	<b>92.3</b>	<b>0.9</b>	<b>78.2</b>	<b>89.5</b>	<b>0.9*</b>	<b>78.5</b>	<b>92.0</b>	<b>0.9</b>	<b>86.6</b>	<b>93.8</b>	<b>0.9</b>	<b>82.7</b>	<b>91.8</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 2006.

(b) 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.

(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.

Source: AIHW analysis of ACIR Medicare Australia data.

**Table 3.02.3: 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 2007** <sup>(a)(b)</sup>

Vaccines	State/territory																	
	NSW			Vic			WA			SA			NT			NSW, Vic, WA, SA, NT <sup>(c)</sup>		
	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>	Indig.	Non-Indig.	Ratio <sup>(d)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	96.4	96.0	1.0	96.9	96.6	1.0	95.9	95.2	1.0	96.6	95.6	1.0	97.9	96.6	1.0	96.7	96.1	1.0
DTP	93.0	95.3	1.0	93.8	96.0	1.0	93.5	94.6	1.0	95.0	95.2	1.0	96.1	95.5	1.0	94.0	95.4	1.0
Polio vaccine	92.9	95.3	1.0	93.8	95.9	1.0	93.5	94.6	1.0	95.0	95.1	1.0	96.1	95.5	1.0	93.9	95.4	1.0
HIB	92.9	95.5	1.0	91.9	95.1	1.0	89.5	94.7	0.9	89.1	94.4	0.9	94.8	94.8	1.0	92.2	95.2	1.0
MMR	92.7	94.1	1.0	95.7	95.3	1.0	91.9	93.3	1.0	89.9	94.3	1.0	96.1	95.2	1.0	93.3	94.4	1.0
<b>All vaccines</b>	<b>90.9</b>	<b>93.0</b>	<b>1.0</b>	<b>91.3</b>	<b>94.1</b>	<b>1.0</b>	<b>87.3</b>	<b>91.7</b>	<b>1.0</b>	<b>87.4</b>	<b>93.0</b>	<b>0.9</b>	<b>94.1</b>	<b>94.1</b>	<b>1.0</b>	<b>90.6</b>	<b>93.2</b>	<b>1.0</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 2005.

(b) 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.

(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.

Source: AIHW analysis of ACIR Medicare Australia data.

**Table 3.02.4: 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 2007<sup>(a)(b)</sup>**

Vaccines	State/territory																	
	NSW			Vic <sup>(c)</sup>			WA			SA			NT			NSW, Vic, WA, SA, NT <sup>(d)</sup>		
	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>	Indig.	Non-Indig.	Rate ratio <sup>(e)</sup>
	%	%		%	%		%	%		%	%		%	%		%	%	
Hepatitis B	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
DTP	88.1	89.8	1.0	88.5	91.8	1.0	80.5	86.3	0.9	69.9	88.5	0.8*	93.6	85.3	1.1	86.1	89.9	1.0
Polio vaccine	87.7	89.8	1.0	88.5	92.0	1.0	81.2	86.7	0.9	69.2	88.7	0.8*	93.6	85.5	1.1	86.1	90.0	1.0
HIB	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
MMR	88.9	89.8	1.0	89.2	91.9	1.0	81.2	86.5	0.9	69.9	88.7	0.8*	93.6	85.1	1.1	86.6	89.9	1.0
<b>All vaccines</b>	<b>86.7</b>	<b>89.1</b>	<b>1.0</b>	<b>88.5</b>	<b>91.4</b>	<b>1.0</b>	<b>79.5</b>	<b>85.5</b>	<b>0.9</b>	<b>69.2</b>	<b>88.1</b>	<b>0.8*</b>	<b>93.3</b>	<b>84.7</b>	<b>1.1</b>	<b>85.2</b>	<b>89.3</b>	<b>1.0</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 2001.

(b) 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.

(c) 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 were 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*.

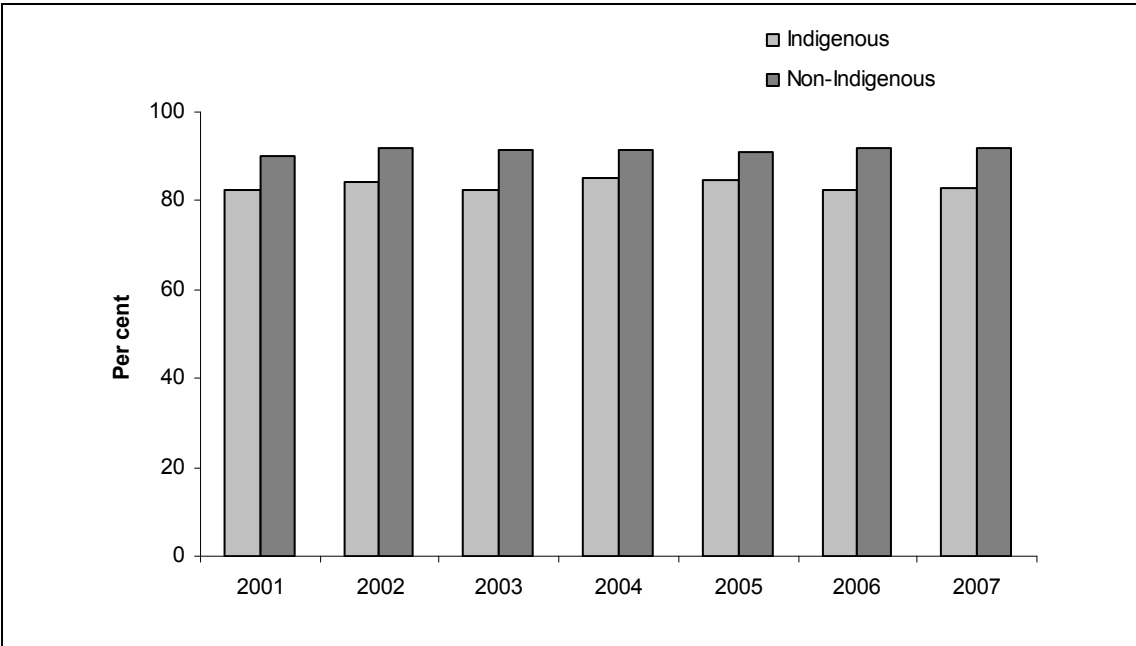
(d) Data for these five jurisdictions should not be assumed to represent the immunisation experience in the other jurisdictions.

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

Source: AIHW analysis of ACIR Medicare Australia data.

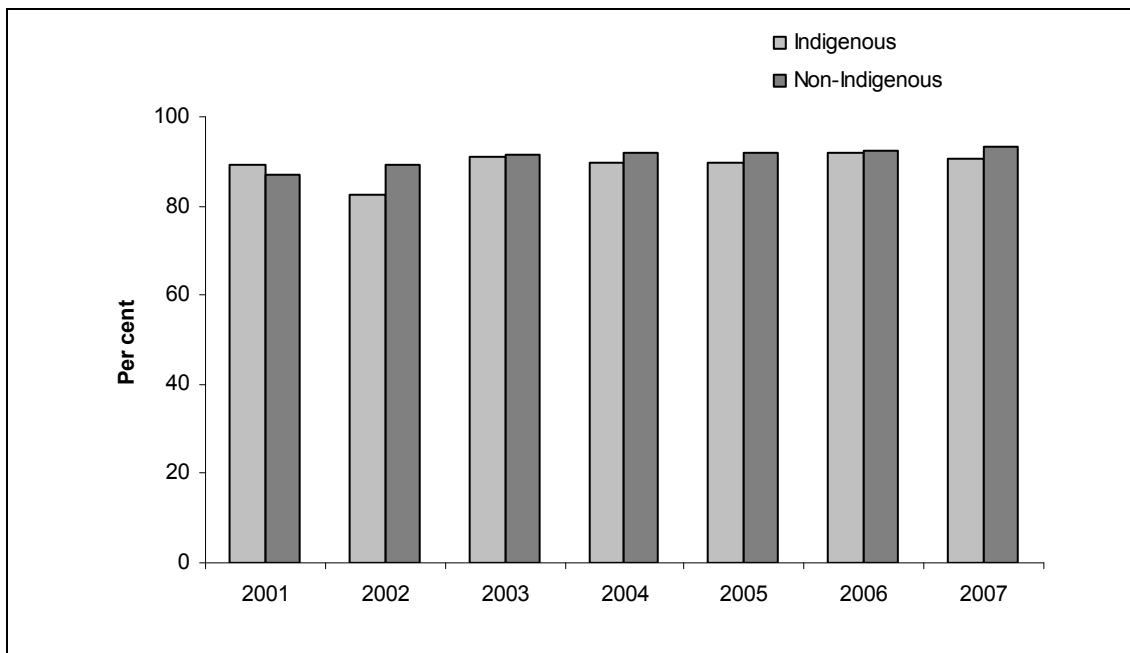
**Time series analyses**

- Between 2001 and 2007, there were no significant changes in the proportion of Indigenous and non-Indigenous children who were fully vaccinated at 1 year of age (Figure 3.02.1).
- Between 2001 and 2007, there was a non-significant increase in the proportion of Indigenous children who were fully immunised at 2 years of age and a significant increase in the proportion of non-Indigenous children who were fully immunised at 2 years of age (Figure 3.02.2).
- Between 2002 and 2007, there were significant increases in the proportion of Indigenous children and non-Indigenous children who were fully immunised at 6 years of age (Figure 3.02.3).



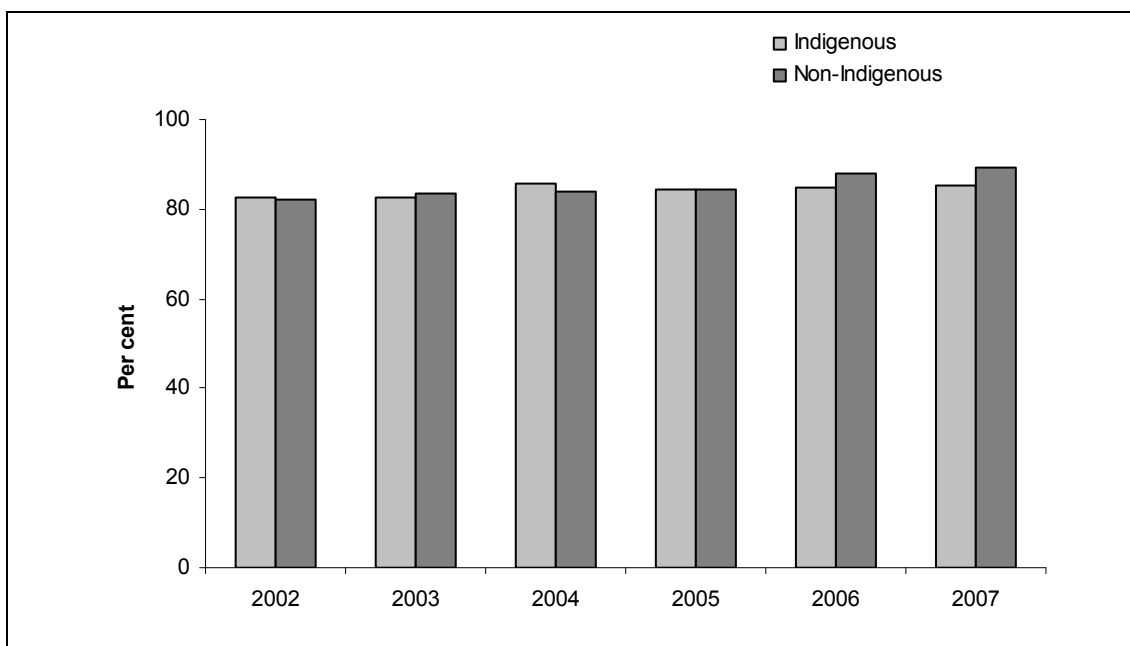
Source: AIHW analysis of ACIR Medicare Australia data.

**Figure 3.02.1: Coverage rates for children fully vaccinated at age 1 year in NSW, Vic, WA, SA and NT combined, by Indigenous status, 2001-2007**



Source: AIHW analysis of ACIR Medicare Australia data.

**Figure 3.02.2: Coverage rates for children fully vaccinated at age 2 years in NSW, Vic, WA, SA and NT combined, by Indigenous status, 2001-2007**



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

Source: AIHW analysis of ACIR Medicare Australia data.

**Figure 3.02.3: Coverage rates for children fully vaccinated at age 6 years in NSW, Vic, WA, SA and NT combined, by Indigenous status, 2002-2007**

## Self-reported data

### Childhood immunisation

The 2004–05 NATSIHS 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 NHS, 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 3.02.5).
- 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, but 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 3.02.6). 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 3.02.5: Immunisation status of children aged 0–6 years in non-remote areas, by Indigenous status, 2001 and 2004–05**

Immunisation status	2001		Ratio <sup>(a)</sup>	2004–05
	Indigenous	Non-Indigenous		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>(b)</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 3.02.5 (continued): Immunisation status of children aged 0–6 years in non-remote areas, by Indigenous status, 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 vaccination schedule started.

Source: ABS 2006 (2001 NHS and 2004–05 NATSIHS).

**Table 3.02.6: Factors influencing decision to immunise children aged 0–6 years in non-remote areas, 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: AIHW analysis of ABS 2001 NHS (Indigenous supplement) and 2004–05 NATSIHS.

## Adolescent immunisation

From September 2003, the NIP schedule recommended catch-up hepatitis B vaccination for adolescents of one cohort within the age range of 10–13 years who had no prior history of disease or vaccination (NCIRS 2008).

The 2004–05 NATSIHS and NHS provide data on coverage for the hepatitis B vaccine for adolescents aged 10–17 years living in non-remote areas, which is not covered by the ACIR.

- In 2004–05, the proportions of Indigenous and non-Indigenous adolescents who had completed hepatitis B vaccination were comparable (51% and 50%, respectively).
- There were some variations across the states/territories, and generally the coverage estimates were lower in Indigenous adolescents, although the differences were not statistically significant (NCIRS 2008).

## Adult immunisation

Aboriginal and Torres Strait Islander adults aged 50 years or more, and those aged 15 to 49 years with medical conditions putting them at high risk of disease or complications, are recommended for vaccination against influenza and pneumococcal disease. These two vaccines have been provided through the National Indigenous Pneumococcal and Influenza Immunisation (NIPII) Program since 1999. For other (non-Indigenous) adult Australians, the recommended age to receive these two vaccines is 65 years or over, and is funded through the Influenza vaccine program for older Australians since 1999 and Pneumococcal vaccination program for older Australians since January 2005 (NCIRS 2008).

The 2004–05 NATSIHS and NHS provide data on coverage for the influenza and pneumococcal vaccines in adults, as well as the presence of high-risk medical conditions that are indicators for vaccination in younger adults.

## Risk factors

### *Influenza*

The risk factors for which the influenza vaccine is recommended include at least one of many chronic medical conditions including severe asthma, diabetes mellitus, and chronic cardiovascular, respiratory and kidney conditions (NCIRS 2008).

- In 2004–05, approximately 17% of Indigenous Australians aged 18–49 years reported at least one of the chronic medical conditions that were considered risk factors of influenza for which vaccination was recommended. The proportion with at least one risk factor rose to 29% when current asthma was included (Table 3.02.7).
- Influenza vaccination coverage varied across jurisdictions. The highest influenza vaccination coverage was reported in the Northern Territory, where 55% of those who reported at least one risk factor, and 48% of the total Indigenous population aged 18–49 years, reported having the influenza vaccination in the last 12 months (Table 3.02.7).
- Of the 23% of the Indigenous population aged 18–49 who reported having the influenza vaccination in the last 12 months, 8.4% had at least one risk factor and 14.6% had no risk factors (NCIRS 2008).

**Table 3.02.7 Prevalence of self-reported risk factors and proportion of population who had influenza vaccination in 12 months prior to survey, Indigenous adults aged 18 to 49 years, by state/territory, 2004–05**

	NSW/ACT	Vic	Qld	WA	SA	Tas	NT	Aust
	Per cent							
<b>Prevalence of risk factor(s)</b>								
Chronic conditions	15	16	17	20	16	15	22	17
Chronic conditions and asthma	28	29	31	29	25	30	26	29
<b>Proportion who had influenza vaccination in the last 12 months</b>								
Of those who reported at least one risk factor	14	23	35	31	33	17	55	29
Of total population	10	16	29	20	21	11	48	23

Source: NCIRS 2008.

### *Pneumococcal*

The risk factors for which the pneumococcal vaccine is recommended include at least one of many chronic medical conditions (but not including asthma), heavy alcohol use and tobacco smoking (NCIRS 2008).

- In 2004–05, the proportion of Indigenous Australians aged 18–49 years who reported at least one of the chronic medical conditions or heavy alcohol use was 32%, and then rose to 66% when tobacco smoking was added (Table 3.02.8).
- Pneumococcal vaccination coverage varied across jurisdictions. The highest pneumococcal vaccination coverage was reported in the Northern Territory, where 25% of those who reported at least one risk factor, and 26% of the total Indigenous population aged 18–49 years reported having the influenza vaccination in the last 5 years (Table 3.02.8).

- Of the 12% of the Indigenous population aged 18–49 who reported having the pneumococcal vaccination in the last 5 years, 8.6% reporting had at least one risk factor and 3.4% had no risk factors (NCIRS 2008).

**Table 3.02.8 Prevalence of self-reported risk factors and proportion of population who had pneumococcal vaccination in 5 years prior to survey, Indigenous adults aged 18 to 49 years, by state/territory, 2004–05**

	NSW/ACT	Vic	Qld	WA	SA	Tas	NT	Aust
	Per cent							
<b>Prevalence of risk factor(s)</b>								
Chronic conditions	15	16	17	20	16	15	22	17
Chronic conditions and heavy alcohol	31	30	34	38	30	26	28	32
Chronic conditions, heavy alcohol and tobacco	67	62	65	67	67	62	69	66
<b>Proportion who had pneumococcal vaccination in the last 5 years</b>								
Of those who reported at least one risk factor	4	10	20	9	10	3	25	13
Of total population	4	8	17	7	12	3	26	12

Source: NCIRS 2008.

### Immunisation for adults aged 50 years and over

Data on immunisation of Indigenous persons aged 50 years and over come from the 2004–05 NATSIHS 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 3.02.9).
- 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 with 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 3.02.10).
- 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. In 2004–05, a lower proportion of Indigenous persons aged 50 years and over had been vaccinated against influenza in the last 12 months and pneumonia in the last 5 years (60% and 34%, respectively) than non-Indigenous persons aged 65 years and over (73% and 43%, respectively) (Figure 3.02.4).

**Table 3.02.9: 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>(d)</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>(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	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>(d)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

(continued)

**Table 3.02.9 (continued): 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>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>(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	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>(d)</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

(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 'influenza vaccination status' not known and not applicable.

(d) Includes 'pneumonia vaccination status' not known and not applicable.

Source: AIHW analysis of 2004–05 NATSIHS.

**Table 3.02.10: 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
	<b>Per cent</b>		
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

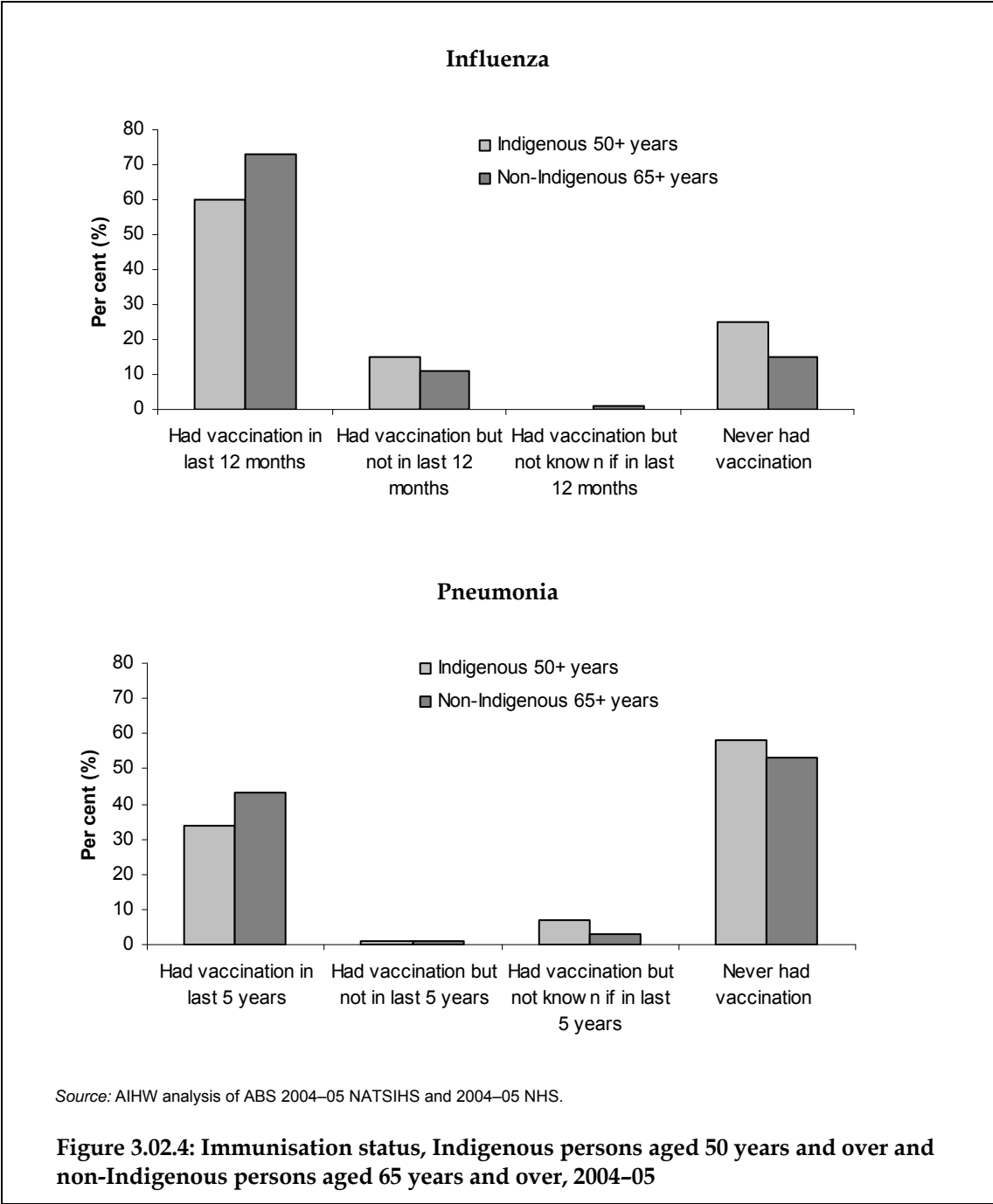
(a) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(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: AIHW analysis of 2004–05 NATSIHS and 2004–05 NHS.



*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 3.02.11).
- 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 3.02.12). 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 3.02.11: 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
	Percent							
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: AIHW analysis of 2004–05 NATSIHS

**Table 3.02.12: 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 (lowest income)	66	13	20	100	39	n.p.	54	100
4th and 5th quintile (highest income)	41	23 <sup>(f)</sup>	36	100	19 <sup>(f)</sup>	n.p.	76	100
<b>Index of disparity</b>								
1st quintile (most disadvantaged)	63	16	20	100	38	n.p.	54	100
5th quintile (least disadvantaged)	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 3.02.12 (continued): 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>Treatment when seeking health care in last 12 months compared with 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

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

(b) Includes 'Had influenza vaccination but not known if in the last 12 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 12 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: 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 vaccinations were provided free of charge (Table 3.02.13). In 2001, approximately 30% of Indigenous Australians aged 50 years and over in non-remote areas received influenza vaccinations free of charge compared with 67% of non-Indigenous Australians.

**Table 3.02.13: How influenza vaccination was obtained, persons aged 50 years and over, by Indigenous status, 2001 and 2004–05**

Whether influenza vaccination free	2001				2004–05
	Indigenous remote	Indigenous (non-remote)	Non-Indigenous (non-remote)	Rate ratio <sup>(a)</sup> (non-remote)	Indigenous non-remote
				<b>Per cent</b>	
Not applicable	68	55	25	2.2*	48
Influenza and vaccination free of charge	27 <sup>(a)</sup>	30	67	0.5*	43
Influenza vaccination not free	n.p.	15	7	2.0*	6
Not stated	n.a.	n.a.	n.a.	n.a.	n.p.
Not known	n.p.	—	1 <sup>(b)</sup>	n.a.	n.p.
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>..</b>	<b>100</b>
Total number	10,219	378,78	2,223,805	..	35,128

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

(a) Ratio Indigenous: non-Indigenous.

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

Source: AIHW analysis of 2001 NHS (Indigenous supplement) and 2004–05 NATSIHS.

## **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 establish 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, Inner and Outer Regional and Remote areas, but Very Remote areas were excluded from the sample. Time series comparisons are available through the 1995 and 2001 NHS.*

*In remote communities there were some modifications to the NATSIHS content in order to accommodate language and cultural appropriateness in traditional communities and help respondents understand 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 NHS did not collect child immunisation data, so no comparative data are available for non-Indigenous children. The 2004–05 NHS 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 2004–05 NATSIHS 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 7 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 12 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. 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. A recent study (Rank and Menzies 2007) found that the reporting of Indigenous status on the ACIR has improved from 42% of the estimated national cohort of Indigenous children aged 12 to 14 months in 2002 to 95% in 2005. 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 because of the differences in the cohort used, population coverage, data collection method, method of calculating 'fully immunised' and vaccines included.*

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