

# AUSTRALIAN CHILDHOOD IMMUNISATION COVERAGE, 1 JULY TO 30 SEPTEMBER COHORT, ASSESSED AS AT DECEMBER 2014

Brynley P Hull for the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases

## Introduction

The National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS) provides commentary on the trends in ACIR data. For further information please contact NCIRS at: telephone +61 2 9845 1435, email: brynley.hull@health.nsw.gov.au

Tables 1, 2 and 3 provide the latest quarterly report on childhood immunisation coverage from the Australian Childhood Immunisation Register (ACIR) for all children.

The data show the percentage of children 'fully immunised' at 12 months, 24 months and 60 months, for 3-month birth cohorts of children assessed at the stated ages between 1 July and 30 September 2014 using ACIR data as at 31 December 2014 'Fully immunised' refers to vaccines on the National Immunisation Program Schedule, but excludes rotavirus, varicella, and meningococcal C conjugate vaccines.

'Fully immunised' at 12 months of age is defined as a child having a record on the ACIR of three doses of a diphtheria (D), tetanus (T) and pertussis-containing (P) vaccine, 3 doses of polio vaccine, 2 or 3 doses of PRP-OMP containing *Haemophilus influenzae* type b (Hib) vaccine or 3 doses of any other *Haemophilus influenzae* type b (Hib) vaccine, 3 doses of hepatitis B vaccine, and 3 doses of 13-valent pneumococcal conjugate vaccine. 'Fully immunised' at 24 months of age is defined as a child having a record on the ACIR of 3 doses of a DTP-containing vaccine, 3 doses of polio vaccine,

3 or 4 doses of PRP-OMP Hib vaccine or 4 doses of any other Hib vaccine, 3 doses of hepatitis B vaccine, 1 dose of a measles, mumps and rubella-containing (MMR) vaccine, 1 dose of meningococcal C vaccine, and 1 dose of varicella vaccine. 'Fully immunised' at 60 months of age is defined as a child having a record on the ACIR of 4 doses of a DTP-containing vaccine, 4 doses of polio vaccine, and 2 doses of an MMR-containing vaccine.

A full description of the basic methodology used can be found in *Commun Dis Intell* 1998;22(3):36–37.

## Results

The percentage of children 'fully immunised' by 12 months of age for Australia decreased from the previous quarter by 0.9 of a percentage point to 90.6% (Table 1). Most jurisdictions experienced small decreases in the percentage of children 'fully immunised' by 12 months of age. For individual vaccines due by 12 months of age a majority of jurisdictions achieved coverage greater than 90%, except for Tasmania where coverage decreased by more than 2 percentage points for all individual vaccines.

The percentage of children 'fully immunised' by 24 months of age for Australia decreased significantly from the previous quarter by 5.5 percentage points to 87.3% (Table 2) There were also significant decreases in fully immunised coverage at 24 months of age in all jurisdictions (range: 2.6–9.4 percentage points). This drop was likely to be due to the inclusion of the varicella vaccine into the algorithm to calculate fully immunised coverage for this age group for the December 2014 quarter. Coverage for

**Table 1. Percentage of children immunised at 12 months of age for the birth cohort 1 July to 30 September 2013, preliminary results, by disease and state or territory; assessment date 31 December 2014**

Vaccine	State or territory								Aust
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	
Total number of children	1,399	24,806	923	15,934	4,990	1,488	19,180	8,507	77,227
Diphtheria, tetanus, pertussis (%)	93.9	90.9	90.8	92.3	91.2	89.9	91.3	91.9	91.5
Poliomyelitis (%)	93.8	90.8	90.8	92.3	91.1	89.8	91.3	91.9	91.4
<i>Haemophilus influenzae</i> type b (%)	93.6	90.7	90.8	92.1	91.0	89.7	91.2	91.6	91.3
Hepatitis B (%)	93.7	90.6	90.8	92.0	90.9	89.6	90.9	91.4	91.1
Pneumococcal	93.7	90.5	90.6	92.0	90.8	89.4	91.0	91.2	91.1
Fully immunised (%)	93.1	90.1	90.2	91.7	90.4	89.0	90.4	90.7	90.6
Change in fully immunised since last quarter (%)	+0.6	-1.0	+2.5	-0.4	-1.0	-2.7	-1.3	-1.0	-0.9

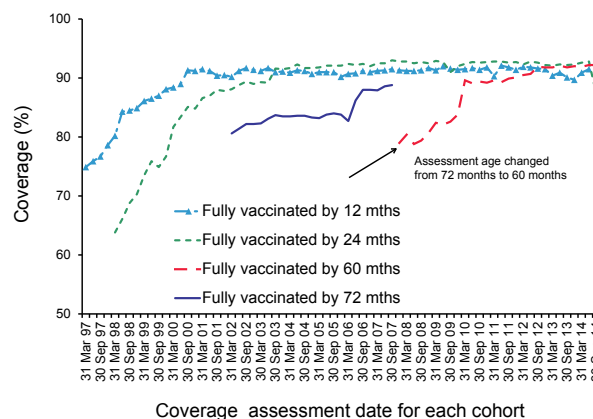
all individual vaccines that are due by 24 months remained high in all jurisdictions except for MMR, which experienced decreases in all jurisdictions (range: 2.5–7.3). This was likely due to the introduction of the MMRV vaccine onto the National Immunisation Program Schedule in July 2013.

The percentage of children ‘fully immunised’ by 60 months of age for Australia remained the same as the previous quarter at 92.2% (Table 3). This maintains the improvement in coverage for this age milestone. There were also only marginal changes in fully immunised coverage at 60 months of age in all jurisdictions. Coverage for individual vaccines due by 60 months remained greater than 90% in all jurisdictions.

The Figure shows the trends in vaccination coverage from the first ACIR-derived published coverage estimates in 1997 to the current estimates. There is a clear trend of increasing vaccination coverage over time for children aged 12 months, 24 months and 60 months (from December 2007). However, in late 2014 coverage at 24 months of age dropped below coverage at 12 and 60 months of age. This is likely due to the change in the immunisation coverage

assessment algorithm for the 24 month milestone age, which was amended to include meningococcal dose 1 and varicella dose 1 in the assessment of ‘fully immunised’. The 24 month assessment algorithm has also been amended to look for MMR dose 2 instead of MMR dose 1.

**Figure: Trends in vaccination coverage, Australia, 1997 to September 2014, by age cohorts**



**Table 2. Percentage of children immunised at 24 months of age for the birth cohort 1 July to 30 September 2012, preliminary results, by disease and state or territory; assessment date 31 December 2014\***

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,433	25,729	891	16,018	5,177	1,484	19,330	8,519	78,581
Diphtheria, tetanus, pertussis (%)	95.8	95.0	94.8	94.8	94.4	94.9	95.5	94.4	95.0
Poliomyelitis (%)	95.9	94.9	94.8	94.8	94.3	94.7	95.4	94.4	94.9
<i>Haemophilus influenzae</i> type b (%)	94.6	93.0	95.2	93.9	92.3	92.1	93.9	92.9	93.4
Measles, mumps, rubella (%)	93.2	89.2	91.4	90.7	88.5	87.2	89.7	86.9	89.4
Hepatitis B (%)	95.7	94.6	95.1	94.4	94.1	94.5	95.1	94.0	94.6
Meningococcal C (%)	94.5	93.0	94.3	93.9	92.4	92.5	93.6	92.4	93.3
Varicella (%)	94.8	90.9	92.0	91.6	89.7	87.5	91.8	88.8	91.0
Fully immunised (%)	91.1	86.7	87.2	89.2	86.0	83.6	87.8	85.1	87.3
Change in fully immunised since last quarter (%)	-2.6	-5.7	-7.5	-4.1	-6.3	-9.4	-5.5	-6.9	-5.5

\* The 12 months age data for this cohort were published in *Commun Dis Intell* 2014;38(2):E158.

**Table 3. Percentage of children immunised at 60 months of age for the birth cohort 1 July to 30 September 2009, preliminary results, by disease and state or territory; assessment date 31 December 2014**

Vaccine	State or territory								
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Aust
Total number of children	1,439	25,810	844	16,353	5,147	1,612	19,187	8,500	78,892
Diphtheria, tetanus, pertussis (%)	93.6	93.2	92.4	92.4	91.4	92.2	93.1	91.3	92.7
Poliomyelitis (%)	93.7	93.1	92.5	92.5	91.4	92.1	93.1	91.2	92.6
Measles, mumps, rubella (%)	93.4	93.1	93.2	92.5	91.3	92.4	93.1	91.2	92.7
Fully immunised (%)	93.3	92.6	91.9	92.1	90.8	91.5	92.6	90.6	92.2
Change in fully immunised since last quarter (%)	+0.3	0.0	+0.3	-0.4	-0.8	-1.4	0.0	+0.5	0.0