



Healthy Communities: Immunisation rates for children in 2015–16

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In 2015–16, childhood immunisation rates continued to improve nationally and in most local areas. Although rates vary across local areas, the gap in rates between the highest and lowest areas is diminishing.

This report focuses on immunisation rates for 5 year olds and presents results since 2011–12. It also provides the latest information for 1, 2 and 5 year olds for Australia's 31 Primary Health Network (PHN) areas and smaller local areas.

From 2011–12 to 2015–16, there were notable improvements in rates for fully immunised 5 year olds. National rates increased from 90.0% to 92.9%. Rates increased for PHN areas too, as all areas reached rates above 90% in 2015–16.

Rates in smaller local areas (Statistical Areas Level 3, or SA3s) have also improved. In 2015–16, 282 of the 325 local areas had rates of fully immunised 5 year olds greater than or equal to 90%. This is up from 2011–12 when only 174 areas had rates in this range. Further, the difference in rates between the highest and lowest areas has decreased over time (Figure 1).

In 2015–16, the rate of fully immunised children varied across PHN areas for the three age groups:

- **1 year olds** – 95.0% to 89.8% (national rate 93.0%)
- **2 year olds** – 93.2% to 87.2% (national rate 90.7%)
- **5 year olds** – 96.1% to 90.3% (national rate 92.9%).

In 2015–16, the national rate of fully immunised Aboriginal and Torres Strait Islander children was 89.8% for 1 year olds, 87.7% for 2 year olds and 94.6% for 5 year olds.

In 2015–16

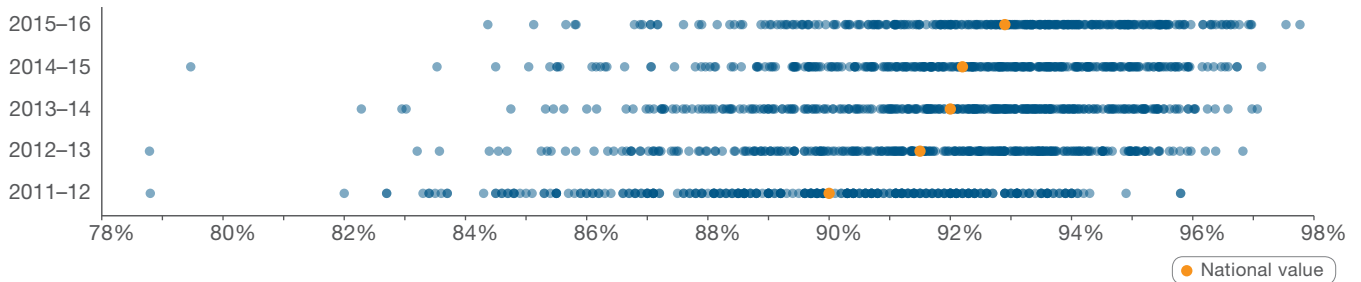
all 31 PHN areas

had rates of fully immunised 5 year olds above 90% compared with

in 2012–13

25 PHN areas

Figure 1: Percentage of 5 year old children fully immunised, by local area (SA3) and reporting year



Note Each blue circle represents the percentage fully immunised in a local area (SA3), excluding local areas with ≤100 registered children.
Source Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics.

Detailed results by PHN, local area (SA3 and SA4) and postcode for 1, 2 and 5 year olds are available at www.myhealthycommunities.gov.au

Sources and methods can be found in the Technical Note at www.myhealthycommunities.gov.au/publications

Immunisation rates for all children

Immunisation programs are a safe and effective way of reducing the spread of vaccine-preventable diseases in the community and protecting against potentially serious health problems.

Although the majority of Australian children are immunised, it is important to maintain high immunisation rates to reduce the risk of outbreaks of serious diseases.

This report presents local-level childhood immunisation information to help clinicians and health managers target their efforts to protect the health of children and the broader community.

Where possible, we give the numbers of children not fully immunised. There may still be a large number of children not fully immunised in areas where immunisation rates are high.

The percentages of all children fully immunised and the numbers of children not fully immunised in 2015–16 are outlined below, at a national level and showing the range across Australia's 31 PHN areas.

For **1 year olds**, 93.0% were fully immunised, while 21,527 children were not fully immunised nationally. Rates across PHN areas ranged from 95.0% in Murrumbidgee (NSW) to 89.8% in North Coast (NSW).

For **2 year olds**, 90.7% were fully immunised, while 28,614 children were not fully immunised nationally. Rates across PHN areas ranged from 93.2% in Murrumbidgee (NSW) to 87.2% in North Coast (NSW).

For **5 year olds**, 92.9% were fully immunised, while 22,128 children were not fully immunised nationally. Rates in PHN areas ranged from 96.1% in Western NSW to 90.3% in North Coast (NSW).

There was considerable variation across PHN areas in the percentage of children fully immunised among the three age groups in 2015–16, as shown in **Figure 3 (page 3)**.

All Australian children are expected to have received specific immunisations by a certain age according to the National Immunisation Program Schedule (**Figure 2**), to ensure that children have maximum protection for their age if they come into contact with harmful viruses and bacteria.

Fully immunised status is measured at ages 1, 2 and 5 years and means that a child has received all of the scheduled vaccinations appropriate for their age.

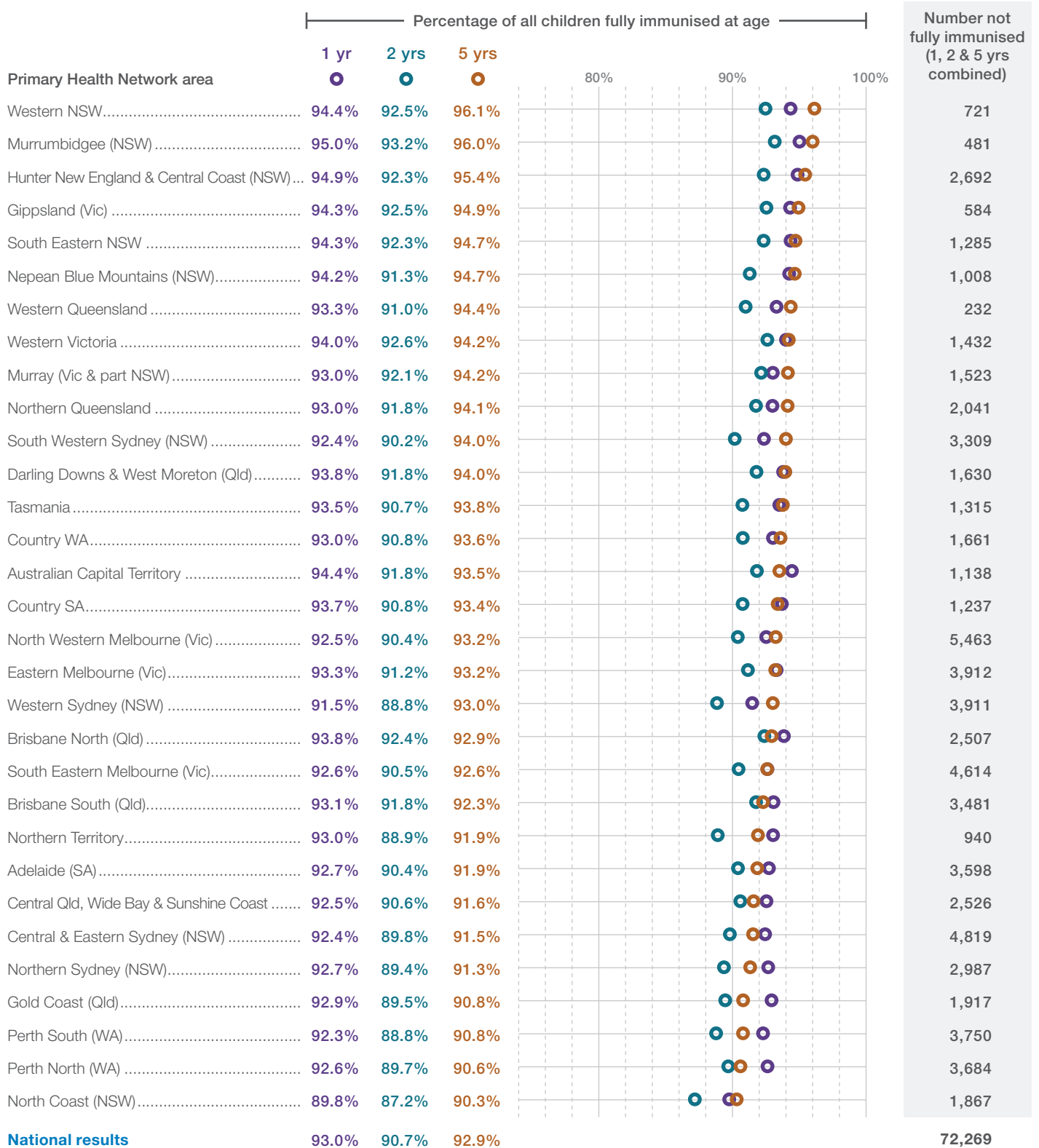
In 2014, the Australian Chief Medical Officer and all state and territory chief health officers agreed to the national aspirational target of 95% of all children fully immunised.

Figure 2: The National Immunisation Program Schedule – vaccinations required for fully immunised status for 1, 2 and 5 year old children in 2015–16

Age due	Vaccinations	Fully immunised status
2 mths	<ul style="list-style-type: none"> Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) <i>Haemophilus influenzae</i> type b (Hib) Polio (IPV) Pneumococcal conjugate 	
4 mths	<ul style="list-style-type: none"> Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) <i>Haemophilus influenzae</i> type b (Hib) Polio (IPV) Pneumococcal conjugate 	
6 mths	<ul style="list-style-type: none"> Hepatitis B (hepB) Diphtheria, tetanus and whooping cough (DTPa) <i>Haemophilus influenzae</i> type b (Hib) Polio (IPV) Pneumococcal conjugate 	1 year
12 mths	<ul style="list-style-type: none"> <i>Haemophilus influenzae</i> type b (Hib) Meningococcal C Measles, mumps and rubella (MMR) 	2 years
18 mths	<ul style="list-style-type: none"> Measles, mumps, rubella and varicella (chickenpox) (MMRV) 	
4 years	<ul style="list-style-type: none"> Diphtheria, tetanus and whooping cough (DTPa) Polio (IPV) Measles, mumps and rubella (MMR) (only if MMRV vaccine was not given at 18 months) 	5 years

Source Australian Government Department of Health, National Immunisation Program Schedule, www.immunise.health.gov.au

Figure 3: Percentage of all children fully immunised and numbers not fully immunised, by Primary Health Network area, 2015–16



Notes • Components may not add to totals due to rounding.

• Data are reported to one decimal place, however for graphical display and ordering they are plotted unrounded.

Source Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics, for the period 1 April 2015 to 31 March 2016 as at 30 June 2016. Data supplied 2 March 2017.

Improvements in immunisation rates for 5 year old children

The following information focuses on immunisation rates for 5 year old children, as this is the age when all routine childhood immunisations in the Schedule are expected to be complete (Figure 2, page 2).

Measuring immunisation rates over time is important to determine if rates are improving as a result of efforts at the national, state and local levels.

Various initiatives have helped improve childhood immunisation rates. These include new laws requiring children to be immunised to enrol in child care or for parents to receive government rebates, as well as state and territory government programs and local action by healthcare professionals. Public reporting of immunisation rates at the local level may also encourage improvements in the percentage of children fully immunised.

Nationally, the percentage of fully immunised 5 year olds has steadily improved from 90.0% in 2011–12 to 92.9% in 2015–16.

Primary Health Network areas

Similarly, rates have improved amongst PHN areas. Immunisation rates for 5 year olds in all 31 PHN areas improved between 2012–13 and 2015–16. In 2015–16, for the first time, all 31 PHN areas had fully immunised rates over 90%, compared with 25 of the 31 PHN areas in 2012–13 (Figure 4).

What does fully immunised at 5 years mean?

Fully immunised at 5 years means that a child has received four doses of diphtheria, tetanus and whooping cough vaccine, four doses of polio vaccine and two doses of measles, mumps and rubella vaccine.

It is assumed that all previous vaccinations were received.

Figure 4: Immunisation rates for 5 year old children, by Primary Health Network area, 2012–13 to 2015–16

Primary Health Network area	2012-13	2013-14	2014-15	2015-16
Western NSW	94.0	94.3	95.6	96.1
Murrumbidgee (NSW)	93.7	95.0	95.7	96.0
Hunter New Eng. & Cent. Coast (NSW)	93.9	94.5	94.8	95.4
Gippsland (Vic)	94.2	93.4	93.5	94.9
South Eastern NSW	93.1	93.9	93.5	94.7
Nepean Blue Mountains (NSW)	92.9	93.3	94.0	94.7
Western Queensland	92.2	94.5	92.9	94.4
Western Victoria	93.8	93.6	93.5	94.2
Murray (Vic & part NSW)	92.7	93.2	93.5	94.2
Northern Queensland	92.7	93.2	93.7	94.1
South Western Sydney (NSW)	92.5	93.0	93.8	94.0
Darling Downs & West Moreton (Qld)	93.0	93.2	93.3	94.0
Tasmania	92.9	92.7	92.6	93.8
Country WA	91.2	92.3	92.0	93.6
Australian Capital Territory	92.3	92.7	93.2	93.5
Country SA	92.0	92.5	91.7	93.4
North Western Melbourne (Vic)	92.4	92.5	92.5	93.2
Eastern Melbourne (Vic)	92.1	92.4	92.4	93.2
Western Sydney (NSW)	91.7	92.2	92.4	93.0
Brisbane North (Qld)	92.0	92.7	93.0	92.9
South Eastern Melbourne (Vic)	92.1	91.7	92.1	92.6
Brisbane South (Qld)	91.0	92.2	92.0	92.3
Northern Territory	90.9	91.4	92.4	91.9
Adelaide (SA)	90.4	90.4	90.5	91.9
Cent. Qld, Wide Bay & Sunshine Coast	90.8	91.6	91.0	91.6
Central & Eastern Sydney (NSW)	89.4	90.1	90.8	91.5
Northern Sydney (NSW)	89.0	89.9	90.4	91.3
Gold Coast (Qld)	89.3	90.1	90.7	90.8
Perth South (WA)	88.6	88.9	90.0	90.8
Perth North (WA)	89.2	89.1	90.3	90.6
North Coast (NSW)	88.0	88.7	89.2	90.3
National	91.5	92.0	92.2	92.9

■ 95.0–100.0% ■ 92.5–94.9% ■ 90.0–92.4% ■ 85.0–89.9%

Note Data for PHN areas are only available from 2012–13.
Source Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics, for the period 1 April to 31 March, assessed as at 30 June.

Immunisation rates for 5 year old children across local areas

This report provides data for more than 300 smaller local areas called Statistical Areas Level 3 (SA3s), which have their boundaries defined by the Australian Bureau of Statistics. Data are also available for around half of the approximately 2,700 Australian postcodes. These postcodes account for around 97% of children on the Australian Immunisation Register (AIR).

Data are only presented for areas with 26 or more registered children, to ensure representative and reliable results.

Statistical Areas Level 3 (SA3s)

In 2015–16, the percentage of 5 year olds fully immunised across local areas (SA3s), ranged from 97.8% in Broken Hill and Far West (NSW) to 84.4% in Richmond Valley–Coastal (NSW). **Figure 5** on **pages 6–7** maps the percentage of 5 year old children fully immunised by SA3.

There were 282 local areas (out of 325 reported) where the percentage of 5 year old children fully immunised was greater than or equal to 90%. This is a big improvement from 2011–12 where there were 174 local areas with rates greater than or equal to 90%. The difference in immunisation rates between the highest and lowest areas has also decreased over this five year period (**Figure 1, page 1**).

95% and above	57 (17.5%) of 325 local areas
90% to <95%	225 (69.2%) of 325 local areas
85% to <90%	42 (12.9%) of 325 local areas
<85%	1 (0.3%) of 325 local areas

Total of 325 local areas (SA3s) with 26 or more registered children.

Postcodes

In 2015–16, the percentage of 5 year olds fully immunised across postcodes ranged from 99.5% in postcode 2517 (NSW) to 70.5% in postcode 2000 (NSW) (**see Table 1 below**).

A total of 1,190 postcodes (of the 1,490 with 26 or more registered children) recorded immunisation rates for 5 year olds greater than or equal to 90%.

95% and above	441 (29.6%) of 1,490 postcodes
90% to <95%	749 (50.3%) of 1,490 postcodes
85% to <90%	224 (15.0%) of 1,490 postcodes
<85%	76 (5.1%) of 1,490 postcodes

Total of 1,490 postcodes with 26 or more registered children.

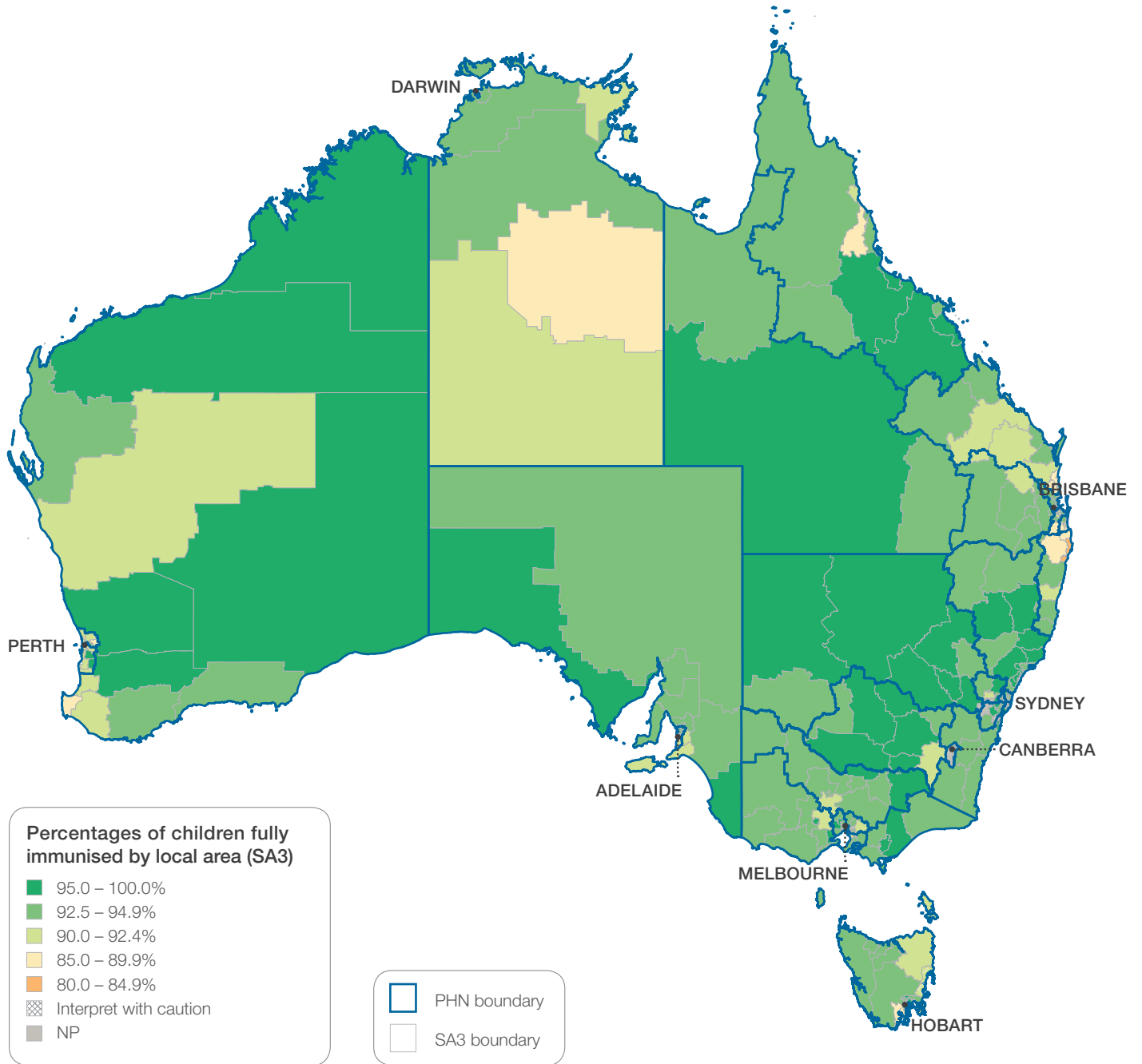
Results are available by Primary Health Network area, Statistical Area Level 3 (SA3) and postcode at www.myhealthycommunities.gov.au

Table 1: Postcodes with the highest and lowest percentage of 5 year old children fully immunised, 2015–16

Postcode	State	Suburb/Town	% Fully immunised
Lowest			
2000	NSW	Sydney, Haymarket, Millers Park, Dawes Point, The Rocks & 3 others	70.5
2134	NSW	Burwood, Burwood North	72.8
2481	NSW	Byron Bay, Suffolk Park, Myocum, Ewingsdale, Skinners Shoot & 4 others	73.2
Highest			
2517	NSW	Woonona, Russell Vale, Woonona East	99.5
6725	WA	Broome, Djugun, Roebuck, Dampier Peninsula, Lagrange & 5 others	99.2
3351	Vic	Smythes Creek, Haddon, Ross Creek, Smythesdale, Scarsdale & 22 others	99.1
3691	Vic	Baranduda, Leneva, Bandiana, Bethanga, Staghorn Flat & 29 others	99.1
4390	Qld	Goondiwindi, Lundavra, Billa Billa, Calingunee, Callandoon & 5 others	99.1

Note Excludes postcode areas with ≤100 registered children.

Figure 5: Percentage of 5 year old children fully immunised by local area (SA3), 2015–16

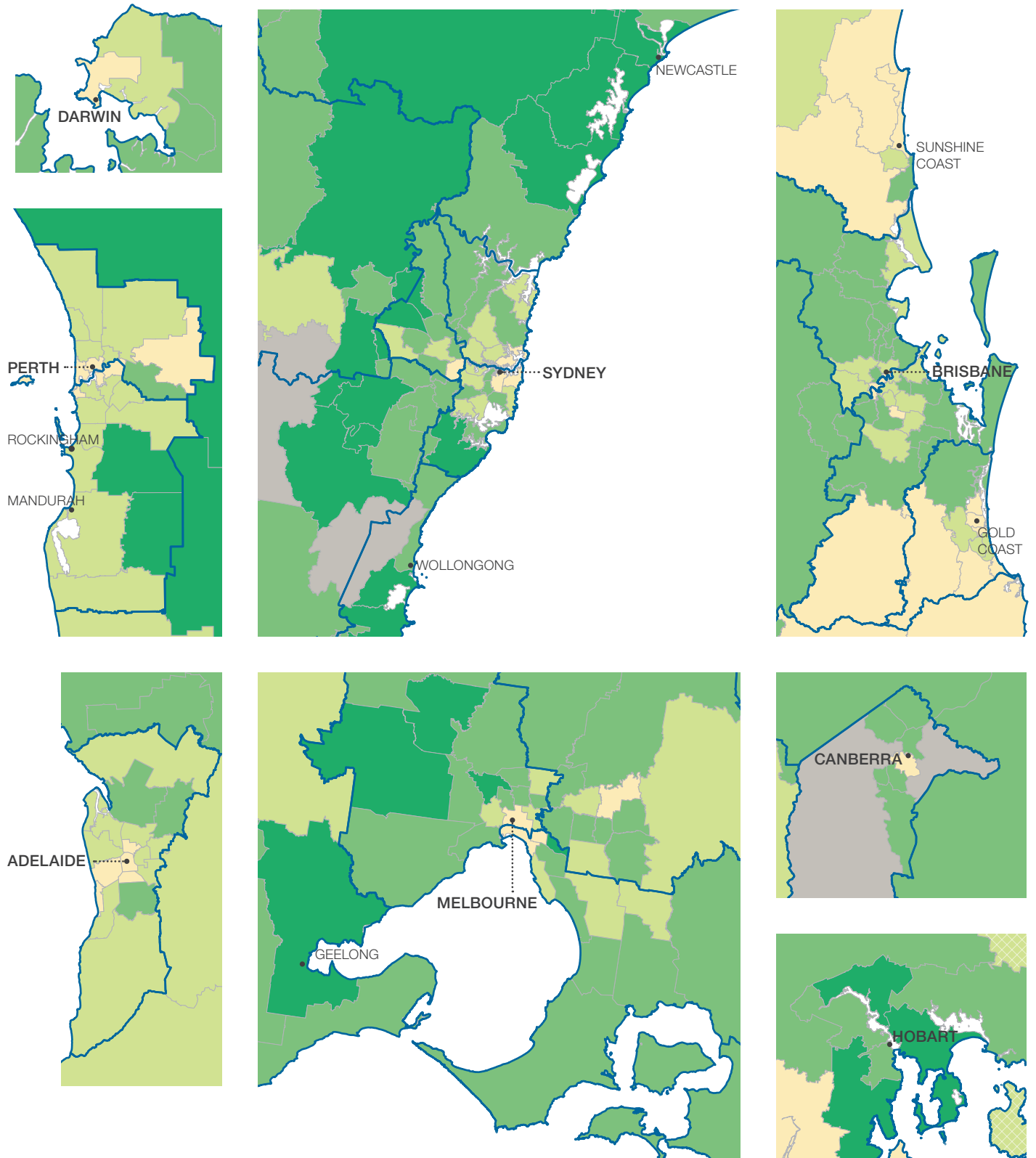


Interpret with caution: This area's eligible population is between 26 and 100 registered children.

NP Not available for publication

Source Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics, for the period 1 April 2015 to 31 March 2016, assessed as at 30 June 2016. Data supplied 2 March 2017.

Figure 5 (continued): Percentage of 5 year old children fully immunised by local area (SA3), 2015–16



Interpret with caution: This area's eligible population is between 26 and 100 registered children.
 NP Not available for publication
 Source Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics, for the period 1 April 2015 to 31 March 2016, assessed as at 30 June 2016. Data supplied 2 March 2017.

Aboriginal and Torres Strait Islander children

Aboriginal and Torres Strait Islander people suffer a disproportionate burden from communicable diseases (diseases that can be transmitted from person to person), with rates of hospitalisation and illness due to these conditions many times higher than other Australians.¹

This section presents results for children who were identified as Aboriginal and/or Torres Strait Islander on the AIR. These data are based on Medicare enrolment records.

For Aboriginal and Torres Strait Islander children, national immunisation rates in 2015–16 for 1 and 2 year olds were lower than the rates for all children (89.8% compared with 93.0% for 1 year olds, and 87.7% compared with 90.7% for 2 year olds). In contrast, the national immunisation rate for Aboriginal and Torres Strait Islander children aged 5 years was higher than the rate for all children (94.6% compared with 92.9%).

Primary Health Network areas

In 2015–16, the percentages of fully immunised Aboriginal and Torres Strait Islander children varied across PHN areas for all three age groups as shown in **Figure 6 (page 9)**. The range in immunisation rates across PHN areas for the three age groups is outlined below.

- **1 year olds** – 94.2% in Tasmania to 76.1% in Perth North (WA)
- **2 year olds** – 93.4% in South Western Sydney (NSW) to 76.0% in Perth South (WA)
- **5 year olds** – 98.8% in Gold Coast (Qld) to 89.4% in Western Victoria.

Statistical Areas Level 4 (SA4s)

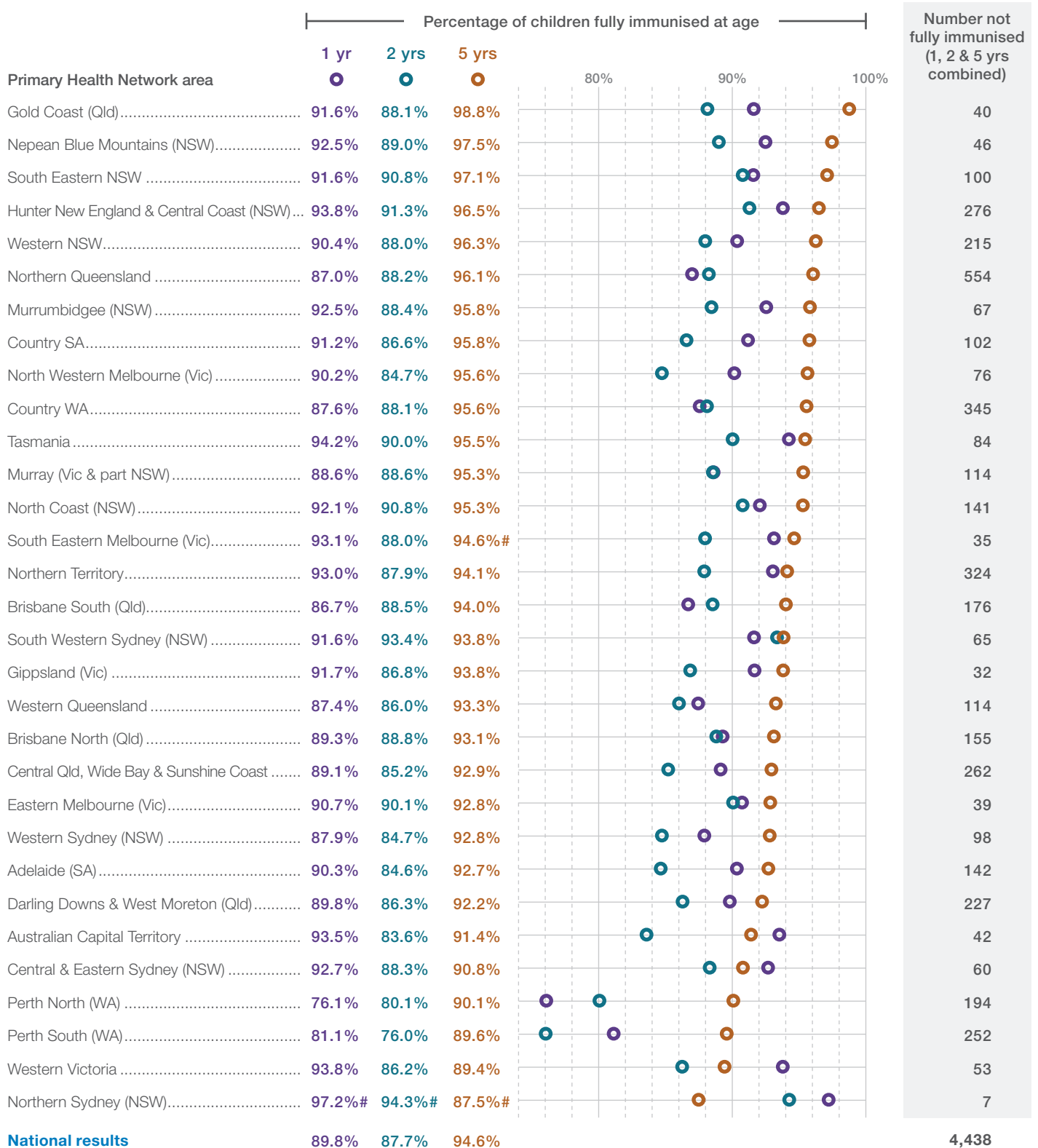
For Aboriginal and Torres Strait Islander children, Statistical Areas Level 4 (SA4s) were used instead of SA3s as the smallest geographic areas. There are larger populations in SA4s and this allows more reliable reporting for smaller population groups such as Aboriginal and Torres Strait Islander children.

Across more than 80 SA4s, the percentage of Aboriginal and Torres Strait Islander children fully immunised in 2015–16 varied considerably:

- **1 year olds** – ranged from 95.9% in Central Coast (NSW) to 72.4% in Perth–North West (WA)
- **2 year olds** – ranged from 96.0% in Coffs Harbour–Grafton (NSW) to 71.2% in Perth–South East (WA)
- **5 year olds** – ranged from 100% in Murray (NSW) to 87.6% in Perth–South East (WA).

Results for Aboriginal and Torres Strait Islander children are available by Primary Health Network area and Statistical Area Level 4 (SA4) at www.myhealthycommunities.gov.au

Figure 6: Percentage of Aboriginal and Torres Strait Islander children fully immunised and numbers not fully immunised, by Primary Health Network area, 2015–16



Interpret with caution: This area's eligible population is between 26 and 100 registered children.
Notes
 • Components may not add to totals due to rounding.
 • Data are reported to one decimal place, however for graphical display and ordering they are plotted unrounded.
 • These data reflect results for children recorded as Aboriginal and Torres Strait Islander on the AIR. Levels of recording may vary between local areas.
Source
 Australian Institute of Health and Welfare analysis of Department of Human Services, Australian Immunisation Register statistics, for the period 1 April 2015 to 31 March 2016, assessed as at 30 June 2016. Data supplied 2 March 2017.

About the data

These data were sourced from the Australian Immunisation Register (AIR), which is administered by the Australian Government Department of Human Services (Medicare). The AIR is estimated to cover 99% of children in Australia. The AIR may underestimate coverage due to incomplete submission of immunisation records or the inclusion of children who no longer reside in an area but have not been updated on the register.

The data reported are for children aged 1, 2 and 5 years for the period 1 April 2015 to 31 March 2016, assessed at 30 June 2016. Data were supplied on 2 March 2017.

See the Technical Note for further information at www.myhealthycommunities.gov.au

Changes to the Australian Immunisation Register

The Australian Immunisation Register (AIR) is a national register that records details of vaccinations given to individuals of all ages who live in Australia.

The AIR captures all the National Immunisation Program (NIP) vaccines, and most privately purchased vaccines, given to people of all ages.²

The Register was established in 1996 as the Australian Childhood Immunisation Register (ACIR). Following its expansion in 2016 to include individuals of all ages, its name was revised to the Australian Immunisation Register.

References

1. Menzies R, Turnour C, Chiu C and McIntyre P 2008. Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia, 2003 to 2006. *Communicable Diseases Intelligence* 32 Supplement: S2-67.
2. Department of Health 2017. Australian Immunisation Register (AIR). Canberra: Department of Health. Viewed 20 February 2017, <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/ohp-acir.htm>

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Please note that there is the potential for minor revisions of this document.