

Methodology for measuring Australia's childhood immunisation coverage

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The Australian Childhood Immunisation Register (ACIR) commenced operation on 1 January 1996. It is administered by the Health Insurance Commission for the Commonwealth Department of Health and Family Services. The ACIR holds identification and immunisation details for each child under the age of 7 years who is registered for Medicare, and any child who is not yet registered for Medicare but for whom an immunisation has been notified to the ACIR. By the age of 12 months, 98.4% of Australian children have Medicare registration (personal communication, Kathi Williams, HIC). Medicare registration includes the postcode of residence of each child, allowing reports to be prepared for Australia, for each State and Territory and for smaller units such as Local Government Areas and Statistical Divisions defined by the Australian Bureau of Statistics.¹

Immunisation information may be sent to the ACIR by immunisation providers, including general practitioners, public immunisation clinics and others. The ACIR is still relatively new and not all immunisation providers are yet

supplying complete details of the immunisations they carry out. In addition, some data flow problems were identified early in the ACIR's operation. Thus, the ACIR data currently underestimate the true proportion of children who are fully immunised, particularly in Western Australia and the Northern Territory.

To be considered fully immunised a child should have completed the number and type of vaccinations listed in the National Health and Medical Research Council (NHMRC) standard childhood vaccination schedule.² Thus, at 1 year of age, a child should have completed the primary series with three vaccinations against diphtheria, tetanus and pertussis (DTP or CDT plus monovalent pertussis), three poliomyelitis (OPV or IPV) and either two or three Hib vaccinations (if the vaccine used was PedvaxHIB or HibTITER respectively). At 2 years of age a child should have completed the primary series as well as MMR (due at 12 months), Hib (PedvaxHIB at 12 months or HibTITER at 18 months) and DTP (due at 18 months).

The calculation of the proportions of children who are fully immunised was based upon birth cohorts of three months in width. The first cohort comprised children who were born in the first quarter of 1996 (date of birth between 1 January 1996 and 31 March 1996). At the assessment date of 31 March 1997, the range of ages for the cohort was 12 months to less than 15 months. The second cohort of children (date of birth between 1 April 1996 and 30 June 1996) were examined using 30 June 1997 as the assessment date.

Only immunisations given on or before a child's first birthday were considered. If a child's records indicated that the child had received the last vaccine due in each sequence then it was assumed that earlier vaccinations in the sequence had been given (thus, for example, a record of a child having had DTP3 was interpreted to mean that the child had received DTP1, DTP2 and DTP3). Only children who were registered for Medicare were included in the calculations. The proportion of children designated as fully immunised was calculated using the count of those Medicare-registered children who had

Table 1. Proportion of children immunised at 1 year of age, preliminary results by disease and State, for the birth cohort 1 January 1996 to 31 March 1996; assessment date 31 March 1997

	Number	DTP (%)	Polio (%)	Hib (%)	Fully immunised (%)
New South Wales	21,724	74.8	74.5	74.3	71.9
Victoria	15,644	82.7	82.7	82.4	80.8
Queensland	12,197	80.7	80.6	81.3	78.2
South Australia	4,843	79.1	79.0	79.2	77.3
Western Australia	6,384	66.5	66.8	65.6	63.9
Tasmania	1,631	77.6	78.1	77.1	75.1
Australian Capital Territory	1,062	80.3	79.8	76.6	75.8
Northern Territory	923	64.8	65.0	69.0	61.4
Australia	64,408	77.4	77.2	77.2	74.9

Table 2. Proportion of children immunised at 1 year of age, preliminary results by disease and State for the birth cohort 1 April 1996 to 30 June 1996; assessment date 30 June 1997

	Number	DTP (%)	Polio (%)	Hib (%)	Fully immunised (%)	Change in fully immunised since last quarter (%)
New South Wales	21,975	76.2	76.1	75.7	73.2	+1.3
Victoria	15,353	82.0	82.2	82.1	80.1	-0.7
Queensland	12,300	82.8	83.0	83.9	80.6	+2.4
South Australia	4,721	79.2	79.0	78.8	77.0	-0.3
Western Australia	6,570	69.3	69.6	69.2	66.9	+3.0
Tasmania	1,582	78.3	78.5	78.4	76.0	+0.9
Australian Capital Territory	1,076	81.1	80.9	78.5	77.4	+1.6
Northern Territory	854	65.5	65.9	71.0	61.7	+0.3
Australia	64,431	78.3	78.4	78.4	75.9	+1.0

completed the primary schedule as the numerator and the total number of children who were registered for Medicare as the denominator.

In addition to the proportion of children who completed the schedule, those completing vaccination for individual diseases or groups of diseases were also calculated. The proportions of children fully immunised were lower than the proportions immunised against individual diseases or groups, because children who have missed vaccination against some diseases are not necessarily those who have missed vaccination against the other diseases.

The data presented in Tables 1 and 2 are preliminary estimates of the proportion of children who are fully immunised by State and by vaccine type for the first two cohorts of children

with complete immunisation histories on the ACIR. In approximately 6 months time it will be possible to report on the status of the first cohort as they pass their second birthdays.

References

1. McLennan, W. Statistical Geography Volume 1. Australian Standard Geographical Classification (ASGC). Canberra, Australian Bureau of Statistics, 1996.
2. NHMRC. The Australian Immunisation Handbook 6th Edition. Canberra, Australian Government Publishing Service, 1997.

Acknowledgment

These figures were provided by the Health Insurance Commission (HIC), to specifications provided by the Commonwealth Department of Health

and Family Services. For further information on these figures or data on the Register, please contact the Immunisation Section (HIC), on telephone 02 62036185.

Editorial note

The above report provides the first of what will be regular, quarterly reports on the immunisation coverage data obtained from the ACIR.

This report presents data showing the proportion of children fully immunised at age 12 months for two 3-month cohorts. Future reports will provide data for subsequent cohorts. As the cohorts reach their second birthdays, reports will be extended to include coverage at age 24 months (2 years). These reports will appear in the Communicable Diseases Surveillance section.