

Letter to the Editor

Immunisation coverage estimates

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To the Editor: The article by Hull and McIntyre¹ examines reasons why data from the Australian Childhood Immunisation Register (ACIR) may underestimate true immunisation coverage in Australia.

There are several anomalies in the data presented that are not addressed by the authors. Furthermore Hull and McIntyre present jurisdictional aggregate data from the ACIR that indicate low immunisation coverage in the Northern Territory (NT), but do not discuss reasons why the NT coverage rates do not reflect the true immunisation status of NT children.

The first anomaly is that the jurisdictions with the longest lag times (the time between the date of the immunisation and the date of processing by the Health Insurance Commission) for birth cohort 1, the Northern Territory (NT) and Queensland, have the lowest increase in coverage due to late notifications. This is counter-intuitive and requires further analysis on what the lag time is actually measuring.

The second anomaly within data presented by Hull and McIntyre is found in Table 5 of their article. This table examines coverage of measles, mumps and rubella vaccination for birth cohort 3 (born 1 July 1996 to 30 September 1996) assessed on 30 September 1998 and again on 30 June 1999. For the NT, the coverage between these two dates falls by 0.9 per cent. The authors do not comment on this inconsistency. The most likely explanation is that the two assessments are not performed on records of exactly the same children. That is, the children who were assessed as being resident in the NT in December 1998 are not the same children who were assessed as being resident in the NT in June 1999. Clearly this has major implications for interpretation of the jurisdictional data presented by Hull and McIntyre, particularly for the NT where the population has an extremely high level of interstate and overseas mobility, but also for other areas.

The third anomaly is that for birth cohort 1 (Table 1) the percentage coverage due to Immunisation History Form notifications (2.7%) for the NT is greater than the increase in coverage due to late notifications (1.2%). The Immunisation History Forms all represent late notifications, but the coverage rate has not increased by as much as the level of history forms. Again the authors did not address this inconsistency. I believe that the most likely explanation is the high rate of interstate migration of families who live in the NT.

I believe that the existence of these anomalies compromises the conclusions drawn by Hull and McIntyre and gives an incorrect impression of poor performance by NT immunisation service providers. Other inaccuracies in NT data are due to difficulties matching NT immunisation records with ACIR records generated by Medicare enrolments, and have consistently resulted in ACIR coverage rates that are well below those estimated by the NT Childhood Immunisation Database.^{2,3}

For example, Thorman and Merianos² have estimated the NT coverage rate for full immunisation for the birth cohort 1 (1 January 1996 to 31 March 1996) to be 75%, which is significantly higher than the revised figure of 66.0% quoted in Table 1 of the article by Hull and McIntyre. Similarly, Thorman and Merianos estimated the coverage for MMR vaccine for this same birth cohort to be 91%, compared with the revised estimate of 71.4% from the ACIR. They based their estimates on the NT Childhood Immunisation Database (CID) and, despite the fact that all of the immunisations on the CID have been transmitted to the ACIR, a large gap in the two estimates of coverage remains.

The major reason that the ACIR estimates of immunisation coverage in the NT are inaccurate is that of poor matching of NT CID records with Medicare-generated ACIR records.³ Most vaccine service providers in the NT do not access Medicare and so do not collect Medicare numbers. Immunisations transmitted to ACIR without a Medicare number are matched on name and date of birth and postcode, which results in a large proportion of records that do not match. Indigenous cultural practices, where name changes are common and the spelling of names is variable, compound the problem in a jurisdiction where 40% of the children aged 0-7 years are indigenous.

Another problem is that NT children have a high proportion of duplicate Medicare registrations. In a culture where children are highly mobile between different care givers and between different health care providers, and commonly have changes to their name and imprecise dates of birth, duplicate Medicare numbers are inevitable if health care providers are to be paid. Where there are duplicate (or triplicate) ACIR records, the immunisation data may sit in neither or one of the duplicate records, or be split between them.

These and other related problems are worse for the older cohorts on the ACIR than for the younger. The importance of reporting of a Medicare number with each immunisation notification has been stressed and, by May 2000, 81% of records on the NT CID contained a Medicare number. A process is nearing completion for all indigenous neonates born in NT public hospitals to be enrolled with Medicare prior to hospital discharge. In 1999 a major project was undertaken jointly by Territory Health Services, General Practice Divisions Northern Territory, the Commonwealth Department of Health and Aged Care and Medicare to "clean" ACIR data for NT children and put in place sustainable processes to address these issues. This project resulted in substantial increases in NT coverage rates as estimated by ACIR for the current cohorts, but there is considerable outstanding work to be done, especially for older cohorts.³

1. Hull BP, McIntyre PB. A re-evaluation of immunisation coverage estimates from the Australian Childhood Immunisation Register, *Commun Dis Intell* 2000;24:161-164.
2. Thorman S, Merianos A. Immunisation coverage of children 12-14 months in real time. *Northern Territory Disease Control Bulletin* 1997;4(4):1.
3. Merianos A. Northern Territory vaccination coverage statistics, ACIR third quarter assessments to 30 September 1997. *Northern Territory Disease Control Bulletin* 1998; 5(2):20.