

## Immunisation: reducing health inequality for Indigenous Australians

*Vaccination programs can act as a paradigm for effective health programs in Indigenous people*

The inferior health status of Indigenous Australians has been extensively reported<sup>1</sup> and is linked inextricably to their ongoing social and economic disadvantage.<sup>1,2</sup> Measures to decrease this health inequity are best focused on prevention and primary care as early in life as possible.<sup>2</sup> Infectious diseases, although accounting for only a minority of the excess disease burden in Indigenous Australians,<sup>1,3</sup> are particularly promoted by features of their disadvantage, such as overcrowding, poor infrastructure for health and hygiene, and poor nutrition. They are also more readily and rapidly targeted for intervention than chronic diseases.<sup>3</sup> Vaccine-preventable diseases are particularly amenable to rapid and cost-effective prevention,<sup>4</sup> and targeted vaccination programs have been shown to reduce health disparities.<sup>5</sup> However, delivery of these programs, like other healthcare interventions, depends on culturally appropriate health services.<sup>2</sup>

The achievements and opportunities for vaccination programs to reduce morbidity and mortality among Indigenous Australians were highlighted in a recent report from the National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases (NCIRS). This provided the first national assessment of the burden of vaccine-preventable diseases and vaccine coverage in Indigenous Australians.<sup>6</sup> It showed that universal vaccination programs with highly effective vaccines (eg, measles, mumps, rubella, poliomyelitis, diphtheria and tetanus vaccines) have achieved excellent disease control in Indigenous people, similar to that in non-Indigenous people. Findings are similar in other countries with comparable Indigenous populations.<sup>4</sup> In contrast, when vaccination programs are more limited (eg, hepatitis A, hepatitis B, influenza and pneumococcal disease), hospitalisation and death rates continue to be higher for Indigenous Australians than for non-Indigenous Australians.<sup>6</sup>

The report also showed gaps in vaccination coverage for both children and adults. Children identified as Indigenous had comparable coverage to other children at age 2 years, but lower coverage at age 12 months, suggesting greater delay in receipt of vaccines. Among adults aged 50–64 years (for whom influenza and pneumococcal polysaccharide vaccine have been funded since 1999 for Indigenous people alone), vaccination coverage was higher for Indigenous people than for non-Indigenous people (47% v 26% for influenza vaccine and 20% v 3% for pneumococcal vaccine), but still suboptimal. For both vaccines, Indigenous adults had higher coverage in remote areas than in non-remote areas (75% v 45% and 48% v 19% for influenza and pneumococcal vaccines, respectively).

These findings highlight two key issues: the potential for expanded vaccination programs; and the need to improve delivery of current programs, especially in non-remote areas.

The value of expanded vaccination programs is compellingly demonstrated by data on hepatitis A and influenza. The recognition of high infection rates and three deaths from hepatitis A in far north Queensland in the 1990s<sup>7</sup> led to a regional vaccination program targeting Indigenous children aged under 5 years from 1999. This virtually eradicated hepatitis A in both the Indigenous and non-

Indigenous population.<sup>8</sup> Similar results after vaccination of high-incidence populations have been documented in the United States and Israel.<sup>9</sup> Yet, the NCIRS report documented hepatitis A as an issue for Indigenous Australians outside north Queensland, with national hospitalisation rates 57 times higher in Indigenous children aged under 5 years than in non-Indigenous children the same age.<sup>6</sup> This highlights the potential of broader national application of the strategy, which is currently being examined by the Australian Technical Advisory Group on Immunisation.

In addition, deaths attributed to influenza and pneumonia are significantly higher in Indigenous Australians.<sup>6</sup> Among age groups either not targeted for influenza vaccination (0–4 years), or where only those with risk factors such as chronic cardiac or pulmonary disease are targeted (25–49 years), the respective mortality rates are 17 times and 28 times higher for Indigenous Australians than for non-Indigenous Australians.<sup>6</sup> In contrast, among Indigenous adults aged 50 years and over, in whom universal influenza and pneumococcal vaccination is funded, the differential mortality rate is much less (three times higher). This suggests that the vaccination program has had an impact and justifies examining more closely the expansion of universal vaccination of Indigenous people to younger age groups.

As to the delivery of current programs, several presentations at the Public Health Association of Australia's national immunisation conference in 2004<sup>10</sup> were pertinent. The conjugate pneumococcal vaccine program (introduced in 2001) provided another example of the success of appropriately targeted vaccination programs, reducing for the first time, in 2003, the national incidence of invasive pneumococcal disease in Indigenous children under 2 years of age to the levels in non-Indigenous children.<sup>11</sup> This is similar to the impact of such a program in the United States.<sup>4</sup>

Other conference presentations highlighted the problems of vaccination delivery to Indigenous Australians in general practice. Although general practice is crucial for vaccine delivery in non-remote areas, only 27% of respondents to a national survey of GPs had a routine system for ascertaining whether their patients are Indigenous.<sup>12</sup> Yet, Aboriginal and Torres Strait Islander people are happy to be asked about Indigenous status, provided it is done respectfully, and the reasons are explained.<sup>13</sup> Improving GPs' identification of Indigenous status could help increase vaccination rates of Indigenous Australians in general practice, which are lower than those of non-Indigenous Australians,<sup>14</sup> and is vital for targeted vaccination. Improving identification is particularly important in non-remote areas, where vaccination coverage of Indigenous people is consistently lower than in remote areas,<sup>6</sup> and where the characteristics of successful programs — accurate data on vaccination status, active promotion and outreach services, and effective collaboration across community, health authorities and providers<sup>15</sup> — are less likely to be found.

Vaccination is a safe, well accepted intervention which offers an opportunity to develop solutions in healthcare delivery that can be applied more generally. Although vaccination programs targeted

only to Indigenous Australians will have less impact than universal programs, particularly in urban areas where Indigenous status may not be identified, the higher burden of disease in Indigenous people will continue to make targeting attractive.

However, to translate the success shown by regional targeted programs<sup>8</sup> to the national level requires substantial investment to improve both data collection (eg, ascertainment of Indigenous status in general practice and completeness of the Australian Childhood Immunisation Register) and service delivery (through culturally appropriate and accessible services). Provision of resources for active program monitoring and coordination equivalent to that found in successful programs in more remote areas is needed.

**Peter B McIntyre**

Director

**Robert I Menzies**

Epidemiologist

National Centre for Immunisation Research and Surveillance of Vaccine-Preventable Diseases, Children's Hospital at Westmead and University of Sydney, Sydney, NSW  
[peterm@chw.edu.au](mailto:peterm@chw.edu.au)

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