

Asthma in Indigenous Australians: so much yet to do for Indigenous lung health

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Indigenous Australians die of asthma at more than three times the rate of the rest of the nation

The recently released Australian Centre for Asthma Monitoring (ACAM) report *Asthma in Australia 2008* focuses attention on several important and novel findings about asthma among Indigenous Australians (see Box).¹ This is the third report in the 2-yearly series from ACAM, and brings together analyses of routinely collected national data, including data from Australian Bureau of Statistics national health surveys, and current information from published articles. Asthma is clearly identified in the report as a prevalent health problem in the Indigenous population. It is one of the two most common causes of hospitalisation of Indigenous Australians, second only to renal dialysis.² It is also the second most common self-reported long-term illness among Indigenous Australians, and the mortality rate due to asthma among Indigenous Australians is 3.2 times that of other Australians.¹ However, in contrast to the attention given to other medical conditions over-represented among Indigenous Australians, such as cardiovascular disease and diabetes mellitus, disproportionately little attention is given to respiratory disease, including asthma.

In contrast to lower prevalence rates reported in the past,^{3,4} the prevalence of asthma among Indigenous Australians (16.5%) is now higher than among other Australians (10.2%), particularly in adults older than 35 years and those living in urban locations.¹ Furthermore, the report shows that the prevalence of asthma in Indigenous adults older than 55 years is higher than the prevalence seen in children. This is in stark contrast to the data for other Australians and from other countries, which show the prevalence of asthma to be higher in children than in adults. We can only speculate about the reasons, but these may include the cumulative effects of three factors: life-long exposure to pulmonary toxicants, such as tobacco smoke and infections; uncertainty among Indigenous Australians about the nature of the disease and of the diagnosis (probably a very significant factor, particularly in the very young and the elderly); and long-term undertreatment of asthma. Uncertainty about the diagnosis is an issue as most of the prevalence data are based on self-reported questionnaire data from the National Aboriginal and Torres Strait Islander Health Survey 2004–05,⁵ and are not confirmed by clinical examination. Although this survey was conducted on a representative sample of Indigenous people (respondents totalled 10 439), with oversampling in remote communities, there remains a need for well conducted epidemiological studies of asthma and wheezing illness in urban, rural and remote Aboriginal populations that include objective measures, such as results of lung function and airway hyper-responsiveness tests.

The problems of smoking and poor access to high-quality health care for Indigenous Australians are well known and similar to those affecting minority groups in many other affluent countries.⁶ Indigenous Australians have very high rates of smoking, a particular concern in relation to asthma. Intrauterine and postnatal exposure to environmental tobacco smoke has serious implications for lung health in young children, especially the many who suffer frequent wheezing illness and persistent lower respiratory tract symptoms. Concurrent smoking and asthma are associated with accelerated lung function decline, and the report highlights the very serious lung-health con-

sequences of the high smoking rates in Indigenous Australians, for children and adults. Chronic obstructive pulmonary disease (COPD) and lung cancer are other important adverse lung outcomes largely attributable to smoking.

Hospitalisation rates for asthma are disproportionately high among Indigenous Australians, as are rates of absences from work or school because of asthma. This occurs despite rates of possession of asthma action plans among Indigenous patients (24.9%) being similar to those among other Australians (22.5%).¹ A possible explanation is the underuse of appropriate medications and devices. Indigenous Australians are less likely to use inhaled preventer medications for asthma. Studies in different regions of Australia, from the Australian Capital Territory to northern Queensland, have confirmed high levels of parent-reported asthma and symptoms such as wheeze in Indigenous children compared with other children, and relative underuse of preventive treatments for asthma.^{7,8} However, Indigenous adults, especially those older than 55 years, have high overall usage of medications for airway disease.¹

Indigenous people with asthma also have a high prevalence of comorbid conditions that may complicate the management of asthma; in particular, comorbid heart disease, cerebrovascular disease and diabetes mellitus are likely to affect asthma management.¹ Furthermore, Indigenous Australians report poorer quality of life than other Australians with asthma, suggesting asthma has a more serious impact in the Indigenous community than in the non-Indigenous community.¹

These data and other findings described in *Asthma in Australia 2008* have important implications for setting priorities and selecting initiatives to promote lung health in Indigenous communities. A start should be made with research into and implementation of more effective and tailored interventions to minimise tobacco use, particularly in settings where high levels of exposure have such deleterious consequences for healthy lung growth, and aggravating effects on respiratory symptoms in children with wheezing illness. Once symptoms are present, further attention is required to ensure that Indigenous Australians receive optimal care for their asthma, particularly to improve inhaler use and maintenance of long-term medication regimens.

There are difficulties in accurately diagnosing the cause of airway symptoms such as cough and wheeze in young children. As diagnosis drives the management of asthma, it is important to conduct research into and promote accurate diagnosis of asthma and related conditions, such as chronic suppurative lung disease and bronchiolitis and, in older people, COPD. In remote Indigenous communities, asthma-like symptoms may be the presenting features of these other respiratory conditions in both children and adults.⁹

Reasons for the high prevalence and morbidity of wheezing illness and asthma, particularly in the very young (younger than 1 year of age) and older Indigenous people, are not known, and require research and clinical attention. The high rate of hospitalisations for asthma, more than twice that of other Australians, suggests there is a need for careful and systematic investigation to develop interventions most likely to benefit the Indigenous community. These are needed to help improve the quality of medical care and preventive strategies for



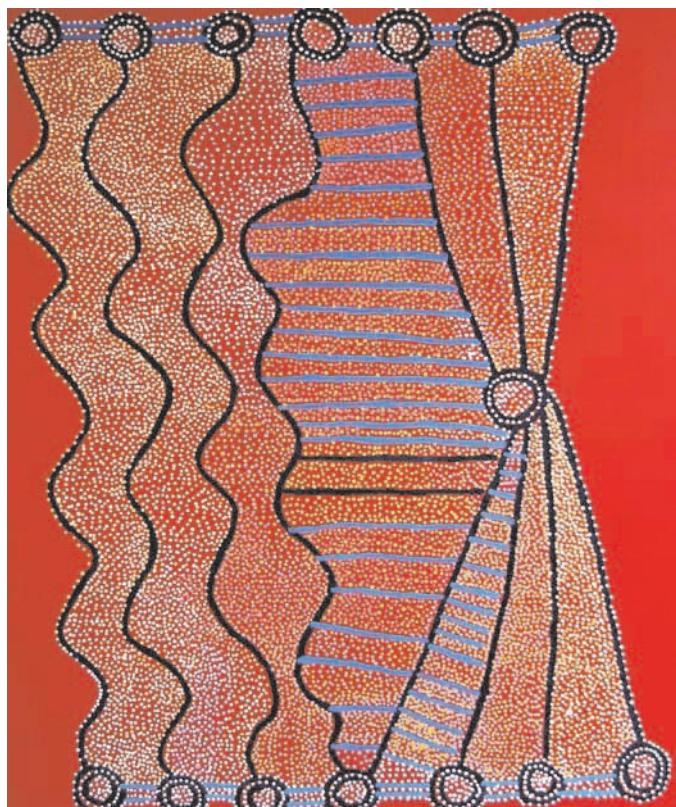
Asthma in Australia 2008: major findings¹

- Prevalence of asthma is higher among Indigenous Australians (16.5%) than it is among other Australians (10.2%).
- Indigenous Australians are twice as likely to be hospitalised for asthma and three times as likely to die of asthma as other Australians.
- Among adults, 48.2% of Indigenous Australians with asthma smoke, compared with 23.8% of other Australians with asthma.
- Indigenous Australians with asthma are three times as likely to have diabetes mellitus as other Australians with asthma.

References

- 1 Australian Centre for Asthma Monitoring. *Asthma in Australia 2008*. Canberra: Australian Institute of Health and Welfare, 2008. (AIHW Asthma Series No. 3. AIHW Cat. No. ACM 14.) <http://www.aihw.gov.au/publications/index.cfm/title/10584> (accessed Mar 2009).
- 2 Australian Health Ministers' Advisory Council. *Aboriginal and Torres Strait Islander health performance framework report 2008 — summary*. Canberra: AHMAC, 2008.
- 3 Veale AJ, Peat JK, Tovey ER, et al. *Asthma and atopy in four rural Australian Aboriginal communities*. *Med J Aust* 1996; 165: 192-196.
- 4 Kamien M. *The physical health of Aboriginal adults in Bourke, New South Wales*. *Med J Aust* 1976; 1: 38-44.
- 5 Australian Bureau of Statistics. *National Aboriginal and Torres Strait Islander Health Survey 2004-05*. Canberra: ABS, 2006. (ABS Cat. No. 4715.0.) <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4715.0Main+Features12004-05?OpenDocument> (accessed Apr 2009).
- 6 Sin DD, Wells H, Svenson LW, et al. *Asthma and COPD among aborigines in Alberta, Canada*. *Chest* 2002; 121: 1841-1846.
- 7 Glasgow NJ, Goodchild EA, Yates R, et al. *Respiratory health in Aboriginal and Torres Strait Islander children in the Australian Capital Territory*. *J Paediatr Child Health* 2003; 39: 534-539.
- 8 Chang AB, Shannon C, O'Neil MC, et al. *Asthma management in Indigenous children of a remote community using an Indigenous health model*. *J Paediatr Child Health* 2000; 36: 249-251.
- 9 Chang AB, Grimwood K, Maguire G, et al. *Management of bronchiectasis and chronic suppurative lung disease in Indigenous children and adults from rural and remote Australian communities [position statement]*. *Med J Aust* 2008; 189: 386-393.
- 10 Wright RJ, Subramanian SV. *Advancing a multilevel framework for epidemiological research on asthma disparities*. *Chest* 2007; 132 (5 Suppl): 757S-769S.
- 11 Bailey EJ, Kruske SG, Morris PS, et al. *Culture-specific programs for children and adults from minority groups who have asthma*. *Cochrane Database Syst Rev* 2008; (2): CD006580.
- 12 Respiratory and sleep health in Indigenous Australians. A position statement commissioned by the Thoracic Society of Australia and New Zealand and the Australasian Sleep Association. <http://www.thoracic.org.au> (accessed Mar 2009). □

Artist: Shorty Jangala Robertson (see page 527)



children and adults at risk of asthma exacerbations and hospital admission. Attention to the presence of comorbidities is advocated both clinically and at a health service policy level. This may include health practitioners incorporating asthma management into cardiovascular and diabetes care plans and vice versa. To rectify the disparity in asthma and asthma-related outcomes in the Indigenous population, a complex multilevel framework¹⁰ is likely to be required, firstly to understand the reasons for this disparity, and then to develop the most appropriate strategies to overcome it.

Opportunities need to be taken to significantly improve the quality of asthma-related care using culturally appropriate programs when they become available. Urgent research into and policy development for the "how to" and "what" of these programs are required. Recent data have shown the efficacy of culture-specific asthma programs compared with "usual care".¹¹ The Thoracic Society of Australia and New Zealand and the Australasian Sleep Association are about to release a report entitled *Respiratory and sleep health in Indigenous Australians*,¹² and the major respiratory advocacy organisations are planning an Indigenous Lung Health Summit to consider the areas most in need of action and to prioritise new initiatives. The initiatives we have recommended here, if undertaken, would be small but important steps in reducing the health gap between Indigenous and other Australians.

Competing interests

Leanne Poulos and Guy Marks are authors of the report *Asthma in Australia 2008*, and Anne Chang is a co-author of the report's chapter on asthma in Indigenous Australians. Christine Jenkins is a member of the Australian System for Monitoring Asthma Steering Committee; the Department of Health and Ageing pays for her air travel if meetings of this committee are in Canberra.

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