Chronic airways disease in First Nations, Inuit and Métis in Canada

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Chronic airways disease is common in First Nations, Inuit and Métis (FNIM) peoples in Canada. Asthma is a frequently reported chronic condition in FNIM children, with prevalence estimates ranging from 6% to 12% (1-6). Asthma in FNIM adults has been less extensively studied but prevalence may be similar to that in children (1,5). Although some studies suggest that asthma may actually be less prevalent in the FNIM population compared with the general Canadian population (1,2), rates of emergency department visits, physician office visits and mortality for asthma have been found to be significantly higher among First Nations and Métis populations (7-9). Less is known about chronic obstructive pulmonary disease (COPD) in FNIM peoples, although prevalence is believed to be elevated due to high rates of cigarette smoking in FNIM populations (7).

Four studies in the current issue of the *Canadian Respiratory Journal* contribute to and update our knowledge of chronic airways disease in FNIM populations. Ospina et al (10) (pages 355-360) conducted a systematic review of asthma and COPD prevalence across several countries and found asthma rates to be generally higher among indigenous populations compared with nonindigenous populations. They also uncovered a glaring gap in knowledge of COPD, finding only one eligible study comparing COPD prevalence between a Native American and non-Native American population. Ye et al (11) (pages 361-366) and Chang et al (12) (pages e68-e74 [www.pulsus.com]) examined factors associated with asthma, most notably breastfeeding, among FNIM children and adults. Finally, Hossain et al (13) (pages e75-e80 [www.pulsus.com]) examined the prevalence and risk factors associated with chronic bronchitis in FNIM children and youth.

These studies, however, have some limitations. The three original research studies used data from the Aboriginal Peoples Survey and Aboriginal Children's Survey. Although these surveys had large sample sizes and appropriate weighting strategies, they were cross-sectional and relied on self-reported diagnoses, which limit both data quality and interpretation. Furthermore, these surveys were limited to off-reserve FNIM populations. Because poor housing quality in First Nations reserved lands has been previously associated with respiratory morbidity (14-16), further investigation of asthma and COPD in on-reserve populations is important. On-reserve data from the First Nations Regional Health Survey will be helpful in supplementing Aboriginal Peoples Survey/Aboriginal Children's Survey data in the future (17). Finally, the risk factors examined in these studies are numerous, but there is limited investigation of the role of smoking and environmental tobacco smoke exposure.

The studies in the current issue provide valuable justification for going beyond survey data to obtain much needed information about respiratory disease in FNIM peoples in Canada. Some additional insight may be obtained using health administrative data. For example, studies of the Métis in Manitoba and Ontario have examined the burden of respiratory disease using hospital, emergency department and physician claims data (18,19). However, primary data collection in FNIM communities would provide even greater clinical detail. Regardless of data source, future studies of respiratory disease should

focus on building ongoing research and knowledge translation partnerships with participating FNIM communities. Chapter 9 of the Tri-Council Policy Statement, the First Nations OCAP (Ownership, Control, Access, Possession) principles, and research guidelines developed by Inuit Tapiriit Kanatami and the Métis Nation of Ontario, provide specific recommendations and direction on working with FNIM populations (20-24).

In summary, chronic airways disease places a significant burden on FNIM peoples in Canada and require further population-specific investigation. We need to collaborate with FNIM communities to build a body of research that advances knowledge of asthma, COPD and chronic bronchitis, and informs culturally appropriate and effective respiratory health interventions.

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REFERENCES

1. Sarkar J, Lix LM, Bruce S, Young TK. Ethnic and regional differences in prevalence and correlates of chronic diseases and risk factors in northern Canada. *Prev Chronic Dis* 2010;7:A13. (Abst)
2. Gao Z, Rowe BH, Majaesic C, O'Hara C, Senthilselvan A. Prevalence of asthma and risk factors for asthma-like symptoms in Aboriginal and non-Aboriginal children in the northern territories of Canada. *Can Respir J* 2008;15:139-45.
3. Findlay LC, Janz TA. The health of Inuit children under age 6 in Canada. *Int J Circumpolar Health* 2012;71.
4. Findlay L, Janz T. Health of First Nations children living off reserve and Métis children younger than age 6. *Health Rep* 2012;23:31-9.
5. Crighton EJ, Wilson K, Senécal S. The relationship between socioeconomic and geographic factors and asthma among Canada's Aboriginal populations. *Int J Circumpolar Health* 2010;69:138-50.
6. MacMillan HL, Jamieson E, Walsh C, Boyle M, Crawford A, MacMillan A. The health of Canada's Aboriginal children: Results from the First Nations and Inuit Regional Health Survey. *Int J Circumpolar Health* 2010;69:158-67.
7. Sin DD, Wells H, Svenson LW, Man SF. Asthma and COPD among Aboriginals in Alberta, Canada. *Chest* 2002;121:1841-6.
8. Rowe BH, Voaklander DC, Wang D, et al. Asthma presentations by adults to emergency departments in Alberta, Canada: A large population-based study. *Chest* 2009;135:57-65.
9. Tjepkema M, Wilkins R, Senécal S, Guimond E, Penney C. Mortality of Métis and registered Indian adults in Canada: An 11-year follow-up study. *Health Rep* 2009;20:31-51.
10. Ospina MB, Voaklander DC, Strickland MK, King M, Senthilselvan A, Rowe BH. Prevalence of asthma and chronic obstructive pulmonary disease in Aboriginal and non-Aboriginal populations: A systematic review and meta-analysis of epidemiological studies. *Can Respir J* 2012;19:355-60.
11. Ye M, Mandhane P, Senthilselvan A. Association of breastfeeding with asthma in young Aboriginal children in Canada. *Can Respir J* 2012;19:361-6.

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12. Chang H-J, Beach J, Senthilselvan A. Prevalence of and risk factors for asthma in off-reserve Aboriginal children and adults in Canada. *Can Respir J* 2012;19:e68-74.
 13. Hossain A, Konrad S, Dosman JA, Senthilselvan A, McCrosky J, Pahwa P. The determinants of chronic bronchitis in Aboriginal children and youth. *Can Respir J* 2012;19:e75-80.
 14. Kovesi T, Gilbert NL, Stocco C, et al. Indoor air quality and the risk of lower respiratory tract infections in young Canadian Inuit children. *CMAJ* 2007;177:155-60.
 15. Bailie R, Stevens M, McDonald E, Brewster D, Guthridge S. Exploring cross-sectional associations between common childhood illness, housing and social conditions in remote Australian Aboriginal communities. *BMC Public Health* 2010;10:147.
 16. Optis M, Shaw K, Stephenson P, Wild P. Mold growth in on-reserve homes in Canada: The need for research, education, policy, and funding. *J Environ Health* 2012;74:14-21.
 17. First Nations Information Governance Centre. RHS – Regional Health Survey. <www.rhs-ers.ca/node/11> (Accessed October 18, 2012).
 18. Martens PJ, Bartlett JG, Prior HJ. What is the comparative health status and associated risk factors for the Métis? A population-based study in Manitoba, Canada. *BMC Public Health* 2011;11:814.
 19. Institute for Clinical Evaluative Sciences, Métis Nation of Ontario. Respiratory disease in the Métis Nation of Ontario. Métis Nation of Ontario, 2012.
 20. Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada. Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans. Ottawa: 2010.
 21. First Nations Information Governance Centre, Assembly of First Nations, National Aboriginal Health Organization. OCAP: Ownership, Control, Access and Possession. Ottawa: 2007.
 22. Inuit Tapiriit Kanatami, Nunavut Research Institute. Negotiating Research Relationships with Inuit Communities: A Guide for Researchers. Ottawa and Iqaluit: 2006.
 23. Evans M, Anderson C, Dietrich D, et al. Funding and ethics in Métis community based research: The complications of a contemporary context. *Int J Crit Indigenous Studies* 2012;5:54-66.
 24. Flicker S, Worthington CA. Public health research involving aboriginal peoples: Research ethics board stakeholders' reflections on ethics principles and research processes. *Can J Public Health* 2012;103:19-22.
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