

The Health of Canada's Indigenous Children

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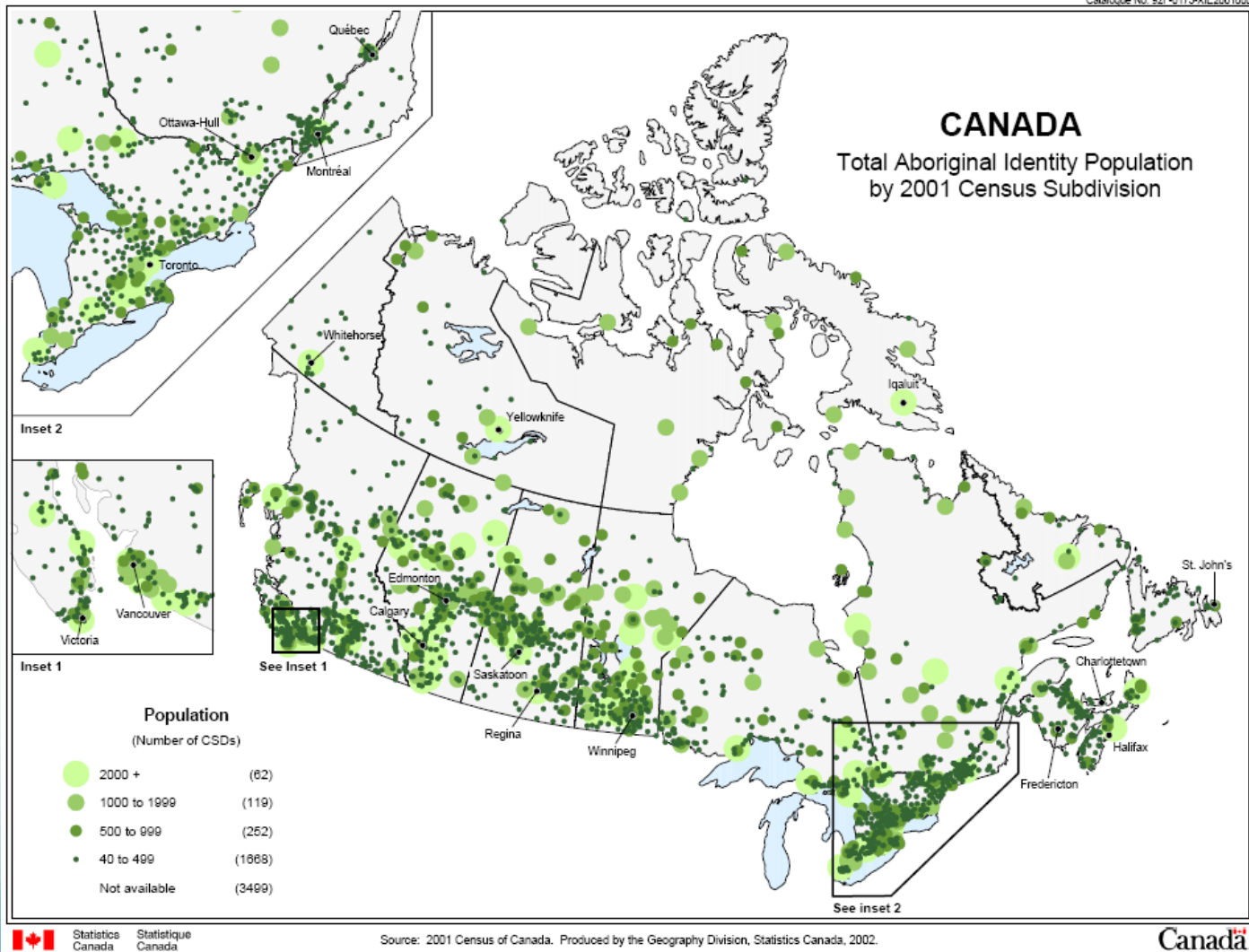
First People in Canada

Population 1 million: 3.6%
of all Canadians

- First Nations People
 - 50 distinct First Nations in 600 Bands
 - 32.6% of indigenous people
- Inuit People
 - 4.4% of indigenous people
- Metis
 - mixed heritage defined by self identification
 - 34% of indigenous people



Indigenous Peoples in Canada



Disparities between Canadians

- Indigenous Canadians are younger
 - 27 years vs. 47 years
- Indigenous people face more economic hardship
 - 41% of Aboriginal people live in poverty compared to 11% of all Canadians
- Aboriginal Canadians are educationally disadvantaged

Health Insurance

- For all Canadians, basic health care is paid by the province or territory
- Federal government takes responsibility for some expenses if you have a treaty number
 - Medications, transportation, supplies, dental, vision, mental health services
- Inuit people do not have treaties but receive similar benefits to First Nations peoples
- Metis people not eligible for non-insured health benefits

Housing for Indigenous Canadians

- 67% people report their houses are in need of repair
- 18% have no phone
- 3.5% have no flush toilets
- 3.7% have no hot running water
- 118 First Nations communities in Canada need to boil their water
- http://www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/water-eau.php#how_many

Air Quality in Home of Indigenous Canadians

- Reduced ventilation, tobacco smoke exposure and crowding may contribute to observed excess of LRTI
- Exposure to tobacco smoke was universal in homes tested
- Association between LRTI and indoor carbon dioxide levels
 - Kovesi (2007); CMAJ 177:155-159
- Youth smoking high (>30% in those <14 and 76% in 15-19 year olds (compared to 6% and 25%))

Inuit Peoples

- Infant mortality
 - 4x higher than for the general population in Inuit communities (20/100,000)*
- Life expectancy 20 years less than other Canadians*
- TB (120/100,000 vs 5/100,000 in all Canadians)
 - *Inuit in Canada: A statistical profile 2008



Top Health Conditions in Children of Indigenous Heritage

- Chronic ear infections
- “Chronic bronchitis”
- Learning disabilities
 - Overrepresentation of developmental disabilities in any marginalized population
 - High rates of FASD sometimes affecting 50% of children in a community
- Obesity and Type 2 Diabetes

Other conditions

- Injuries
- Iron deficiency anemia
- Vitamin D deficiency rickets
- Dental caries

Dental Health

- Though dental care is free only 22% of children with aboriginal status receive annual dental care
- Prevalence of early childhood caries exceeds 90% in some communities
- 50% children have untreated decay



Poor dental health impacts

- Subsequent malocclusion
- Caries of permanent teeth
- Speech and articulation problems *Leake (2008): J Can Dent Assoc. 74:519*
- Children with caries weigh less and may be shorter
- Increased lower respiratory tract infections but causal relationship not clear *Alaki (2008) Pediatr Dent 30:105-110*



Dental Health in Indigenous Children

- Early caries generally mean late caries
- Not just related to bottle feeding
 - Environmental factors, host factors, cultural practises, diet
- Rural, remote and urban problem
- NIHB spends only 10% on dental health promotion



Breastfeeding

- Low rates among First People
 - *Black (2008); Can Journal Public Health 99:98-101*



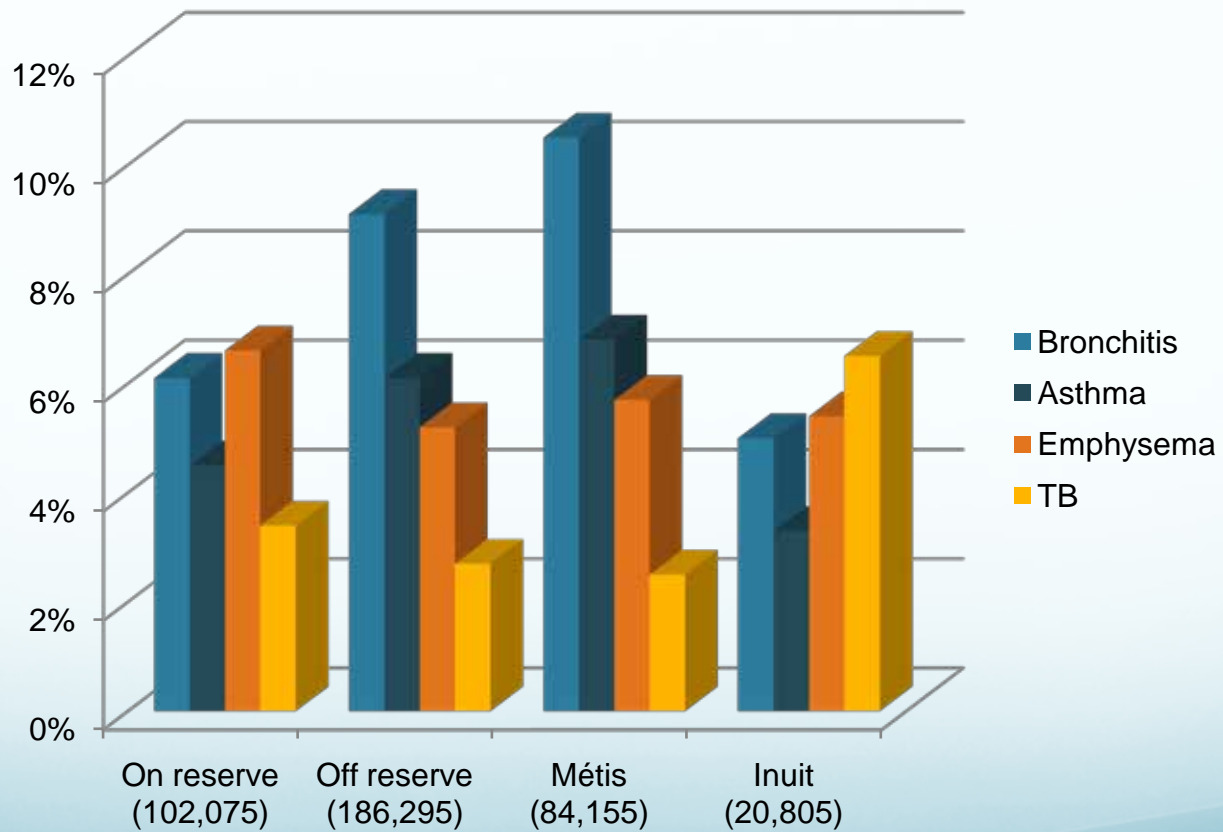
Respiratory Illness

- For all Canadians: pneumonia and influenza are the leading cause of death from infectious disease
- Inuit have the highest rate of hospitalization for LRTI in the world
 - Environmental?
 - Genetic predisposition?

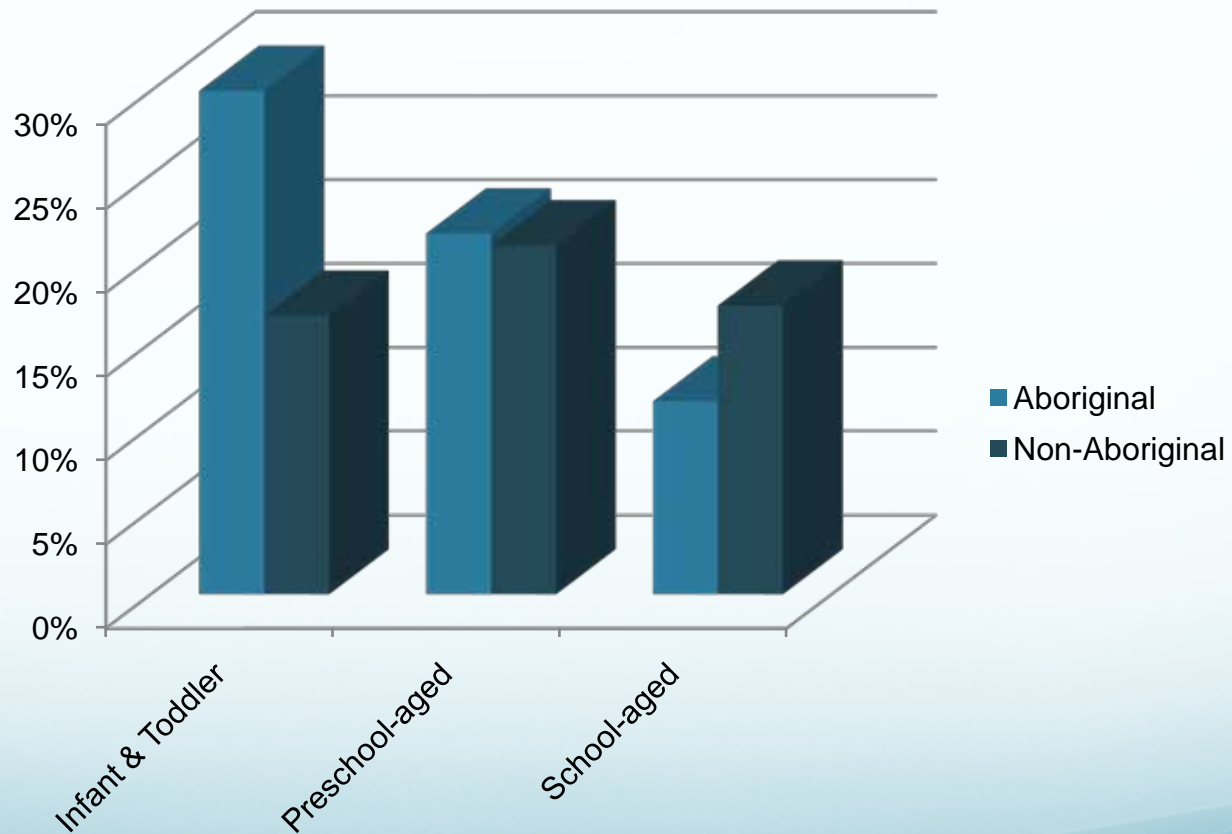


Respiratory Illness

Population ≥15 y (1991)



Asthma-like symptoms



Gao, Can Respir J. 2008;15:139–145

Factors associated with asthma-like symptoms

	Aboriginal		Non-Aboriginal	
	O.R.	p	O.R.	p
Infant/toddler	3.72	<0.0001	1.15	0.64
Preschool age	1.93	0.0004	1.41	0.08
Childhood allergy	2.91	0.0009	3.77	<0.0001
Mom smoking daily	1.88	0.008	1.66	0.03

LRTI in Indigenous Canadian Children

- Streptococcus pneumoniae
- RSV
- Often children require mechanical ventilation
- High cost to health care system due to need for medical evacuation from home communities
- Disproportionately high rates of chronic lung disease
 - *Hemmelgarn (1997); Am J Respir Crit Care Med; 156:1870-5*

LRTI in Indigenous Canadian Children

- Newfoundland & Labrador:
 - Hospitalization was 11.6 vs 3/1000 in the Innu & Inuit communities
 - Infants 93.4/1000
- *Alaghebanda (2007); Int J Infect Dis 11:23-8*
- Nunavik (Northern Quebec)
 - LRTI 10x more frequent than in the rest of Canada
 - Hospitalization 198/1000 infants, 119/1000 toddlers, 31/1000 preschoolers
- *Dallaire (2006); Canadian J Public Health 97:362-369*

LRTI in Indigenous Canadian Children

- Baffin Island
 - Bronchiolitis hospitalization 484/1000 infants less than 6 months (12% intubated)
 - RSV, adeno, rhino, influenza, parainfluenza 1&3, cytomegalovirus, enterovirus, bordetella pertussis
 - All were second hand smoke exposed in utero and at home, crowding

- Banerji (2001); CMAJ 164:1847-1850

Determinants of pneumonia hospitalization in Ontario

- Low education rates predict hospital admission in all ages and all genders (?proxy for SES status)
- Aboriginal status
- Other correlates:
 - Behaviours: smoking, drinking
 - Environmental factors: passive smoking, poor housing, temperature
- *Crichton et al (2007); Social Science and Medicine 64:1636-1650*

Summary

- Despite advances in care, Indigenous Canadians continue to experience more respiratory illness, a higher infant mortality and shorter life expectancy than other Canadians
- Though many factors that are correlated with illness have been identified, direct causal factors remain elusive

